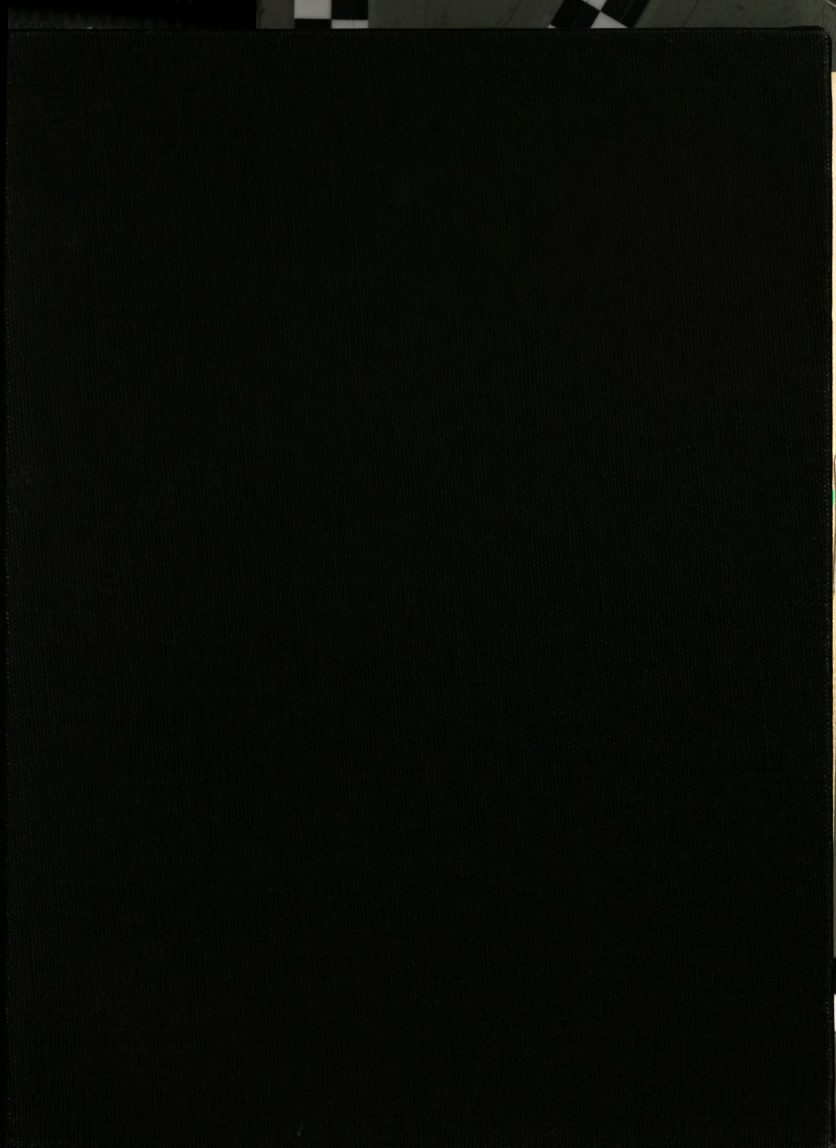






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AN ORGANIZATIONAL ANALYSIS OF A
SCHOOL LEARNING CLIMATE
INTERVENTION PROGRAM

By

Stephen Kyle Miller

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

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1983

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ABSTRACT

AN ORGANIZATIONAL ANALYSIS OF A SCHOOL LEARNING CLIMATE INTERVENTION PROGRAM

By

Stephen Kyle Miller

A growing body of literature exists on exemplary schools for the disadvantaged, but programs to create effective schools based on that research are rare. A significant exception is the program in Pontiac designed to increase achievement by improving the school learning climate. The intervention attempts to produce behavioral, normative, and structural changes that are modeled on the characteristics of effective schools. Those characteristics include high teacher expectations, some form of mastery instruction, high time-on-task, use of academic team games, flexible heterogeneous grouping, and priority of basic skills mastery for all students.

This study is an organizational analysis containing an historical review of the school effects literature, extensive narration of the program, and analysis of processes of change and outcomes which are associated with the intervention.

The longitudinal intervention involved several of the schools with varying intensity and duration. Description of this setting focuses on internal and external environmental factors that affect change, including among others the Superintendent's excellence program, organizational structure, grouping practices, change agents,

financial exigencies, and the effects of grantsmanship.

The analyses indicate that significant improvements in each of four areas--policies and goals, professional behavior, expectations and beliefs regarding student ability, and achievement--were associated with the strategies of the intervention. An analysis of covariance yielded significant differences on project versus non-project treatment groups. But because of confounding variables and insufficient longitudinal measures in the behavioral and attitudinal realms, causality for the changes noted cannot be strictly attributed to the intervention.

A second finding relates to the degree of institutionalization of the intervention across the district. The variance in the degree of change between both individuals and schools and in the extent of program decay over time reflect a major problem in the project: how to implement the change strategies to achieve full participation and long-term effects. Discussion centers on identifying factors which could be changed to increase institutionalization. Those factors include improved leadership, analysis of reward structures, controlling disruptive environmental factors, reducing political intrigue, restructuring the formal organization, inducing changes in informal norms, and increasing focus on priority goals.

DEDICATION

To Mary,

whose assistance, prodding, and love
have been instrumental in completing this

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Professors Keith Anderson and Lawrence Lezotte have both provided extensive career and intellectual guidance. I gratefully acknowledge their help.

Special appreciation is extended to my committee members--Professors William Crano, William Schmidt, and John Schweitzer--for their suggestions on this dissertation and their assistance throughout my program.

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Many persons in Pontiac worked with me. I learned much about both schools and people through this association. Their support and assistance in data collection are sincerely appreciated.

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a sounding board for ideas, but she also did so in a supportive and loving manner. In many respects this is hers as well as mine.

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CHAPTER I

PROBLEM AND PURPOSE

Statement of the Problem

The educational system for the poor and/or minorities in the United States can only be described as dismal. Low achievement, failing students, and functionally illiterate high school graduates are commonplace. Poor discipline, vandalism, and violence are characteristic of many if not most of the schools for the disadvantaged. High rates of truancy, tardiness, and school-leavers compound the situation. More specifically, these indications of a breakdown in the socialization process of society are frequently associated with urban areas, in which the problems in the schools reflect the overall problems of increased size, greater anonymity, higher unemployment and crime rates, and the general malaise of the cities.

The plight of these schools has been documented by researchers who have reported that schools have little or no effect on educational outcomes over and above the effects of family background as measured by race or socioeconomic status (e.g., Coleman, Campbell, Hobson, McPartland, Mood, Weinfeld, & York, 1966; Jencks, Smith, Acland, Bane, Cohen, Gintis, Heynes, & Michelson, 1972). These and other large scale survey research projects have unfortunately brought many researchers and educators to the conclusion that schools do not

make a difference, i.e., that schools for the disadvantaged can expect nothing other than the low achievement and poor quality which are presumed to be the result of family characteristics. In short, urban schools in general are of low quality and are thought to be beyond help by many educators.

Compounding this problem is the fact that the history of educational change and innovation is likewise bleak. Perhaps the greatest lesson learned from the many attempts to introduce change to the schools during the sixties and seventies is that in most cases, the only real change resulting from a program is a new name for doing things in the same old way. These findings have led to further disillusion and loss of confidence in our schools and the prospects for reform in the opinion of many policy makers (see Goodlad, 1975; Morrish, 1976, for general reviews of this problem).

Set against this negative outlook, however, are some optimistic factors. First, not all researchers have accepted the dismal conclusion that schools cannot make a difference. Based on studies of atypically successful low-income and minority schools, research on effective schools offers evidence and hope that schools can and do make a difference in achievement and quality (Brookover, Beady, Flood, Schweitzer, & Wisenbaker, 1979; Edmonds, 1979). One of the leading strands in this area is the work conducted by Wilbur Brookover and associates at Michigan State University on the relationship between school learning climate and student achievement (see Lezotte, Hathaway, Miller, Passalacqua, & Brookover, 1980, for a review).

Likewise, not all of the research and literature on educational change is negative in tone. While many of the change programs that

are attempted have unsuccessful or unintended outcomes, some researchers remain optimistic that planned change can be managed successfully and that an increase in knowledge and understanding of the change process will bring increasing success in this area (e.g., Gross & Herriott, 1979).

This general background provides a frame of reference for an attempt to introduce educational improvement into an urban school district. In the fall of 1977, the school district of an industrial, automobile-dominated city in Michigan contracted with the Brookover team at Michigan State University to implement a program to improve the achievement levels in the city's schools. This intervention project became known as the School Climate Activities Training (SCAT) program with the goal of raising achievement by improving the school learning climate in selected schools in the district. The SCAT program was a multi-year effort to impact on the quality of schooling in the district by introducing a particular comprehensive innovation into the schools: an improved school learning climate.

The general question which this dissertation will address is what are the effects of the school learning climate intervention program and what are the processes of change associated with these results. More precisely, this dissertation will be a descriptive, longitudinal, organizational analysis of a program of planned educational change in the district. The emphasis of the descriptions will be to extract and explain those factors associated with the results of this program, both positive and negative.

The Research Setting

The intervention program which is the object of this analysis took place in Pontiac, Michigan, an industrial city of about 85,000 located in the northern fringe of the Detroit metropolitan manufacturing region. The city is dominated by the auto industry. However, the reality of the city's population is even more bleak than the hard economic times which have hit Michigan's automobile-linked economy during the recent recession. For even prior to the extreme unemployment of the current economic downturn which has left Michigan as the hardest hit of all states, Pontiac was suffering a rate of joblessness that was among the highest in the nation (Efthim, 1975).

Even during economic good times, the city does not mirror the relative prosperity of the high paying auto-related blue collar work force. Many of the auto workers live in outlying suburbs in the surrounding area. Residents of the city are more likely to be unemployed or to receive some form of public assistance than the suburban area. Those who do work are more likely to hold low-paying service jobs (Scherer & Slawski, 1979). Furthermore, the city has a southern flavor; many of the residents, both black and white, have migrated from southern, rural areas. The percent of minorities has increased over the last thirty years, to approximately one-half of the student population (Efthim, 1975).

The race factor has been significant in Pontiac. As early as 1966, concern for the problem of inequality between the races led to the organization of a study commission to address the issue (Pontiac Citizens Study Committee, 1968). Despite an extensive analysis with wide ranging recommendations for reform, the 1968 report stood firmly

on the desirability of maintaining the neighborhood school concept for pupil assignment.

The Citizens Study Committee and report were insufficient to satisfy the black community. In the fall of 1971, Court-ordered bussing was implemented. Bus bombings and Klan activity were highly visible evidence of the resistance which met desegregation. The media focused national attention on the city, leaving the impression that little education was occurring (Efthim, 1975).

Nonetheless, Efthim (1975) and Scherer and Slawski (1979) both indicate that the initial disturbances were short-lived. The school district utilized strict measures of social control, especially at the high schools, which included eliminating all non-academic periods such as lunch hour and study halls. Efthim (1975) notes some positive results based on attitude surveys. Scherer and Slawski (1979), however, found muted "peace" based on rigid social control and an uneasy separation of the races within the high schools. These problems and the issue of poor academic performance are further confirmed in an Emergency School Aid Act proposal (Van Koughnett, Petway, & Daniel, Note 1) to implement a mastery learning-academic team games program in the ninth and tenth grades.

Problems also existed at the elementary level. Brookover, Lezotte, Tornatzky, Abbott, Hall, Passalacqua, and Hathaway (Note 2) document the overall low achievement in the city compared to national and state norms. Of additional concern is the extremely low achievement of minorities compared to whites. Furthermore, these achievement problems intensify over time; scores decline as students move through the grades.

In short, Pontiac's relative poverty, high unemployment, low-level jobs, low achievement, and southern atmosphere regarding racial matters represent a situation typical of the disadvantaged "urban" community. The conventional wisdom suggests that low achievement and poor schools are the inevitable legacy of these family background influences, i.e., schools can do little to overcome these factors. It is in this context that the intervention under review in this study attempted to improve the schools.

Description of the Intervention

In 1976 blacks were elected as four of the seven school board members for the first time (Scherer & Slawski, 1979). Two significant events were to follow from this turning point. First, the board initiated a directive to the superintendent to solicit university assistance to help remedy the relatively low overall achievement and the gap between black and white students. As a result, a team from the Center for Urban Affairs at Michigan State University (MSU) contracted to implement a school improvement program. This plan, adopted in the fall of 1977, called for a study of district goals, policies, and practices with respect to achievement in the basic skills (Brookover, Lezotte, Tornatzky, Abbott, Passalacqua, Hathaway, & Hall, Note 3). In addition, the plan called for a series of workshops for the schools to develop a readiness for change for the intervention (Brookover et al., Note 2). Finally, the MSU team was to implement an intensive intervention in from two to four schools. This intervention was based on previous work indicating that the school social climate or learning environment is highly related to student

achievement (Brookover et al., 1979; Brookover & Lezotte, 1977; Brookover & Schneider, 1975). From this research evolved the overall implementation: a school-based program to increase achievement in the basic skills for all students by improving the school social climate.

The second factor which followed from the majority black school board occurred prior to the 1978-79 school year. The first black superintendent in Pontiac assumed direction of the district; although not directly linked to the school social climate intervention, the new superintendent was to become a factor that must be addressed in analysis of the current study.

The second factor is examined in Chapter V; a further delineation of the MSU intervention project is a necessary part of this chapter.

School Learning Climate

The intervention implemented by the Brookover-MSU team centered on the concept, "school climate" or "school social climate," as defined and used by Brookover and Erickson (1975):

School climate or the social subculture refers to the attitudes, beliefs, values, and norms that characterize the social system of the school. The climate or culture is determined by the aggregate attitudes, beliefs, norms, and expectations of the persons who make up the school social system (p. 360).

In addition:

The school social climate encompasses a composite of variables as defined and perceived by the members of the group. These factors may be broadly conceived as the norms of the social system and expectations held for various members of the group and communicated to members of the group (p. 364).

This conception focused on the normative, attitudinal, and value-based beliefs which characterize a school. This early definition does not explicitly state that the focus of the school social climate is the association with student achievement; however, the research cited to support this concept as the basis of the improvement program (Brookover et al., 1979; Brookover & Lezotte, 1977; Brookover & Schneider, 1975) directly analyzes this cognitive correlation.

The cognitive-achievement emphasis is an important distinction, for the usual emphasis of "school climate" in the literature is on the association with affective outcomes, often adult-based concerns such as communication, morale, or job satisfaction (see Chapter III for a review of this distinction). The school social climate as used for this intervention, however, is clearly intended to enhance student achievement.

The focus on achievement in the concept becomes more apparent as the intervention progresses. While the original concept is primarily normative, the set of inservice modules developed to facilitate implementation of the intervention (described below) includes topics on both instructional and structural aspects of the school social system as well as the value culture of the school (Brookover, Abbott, Hall, Hathaway, Lezotte, Passalacqua, & Tornatzky, 1978b). This set of inservice modules also uses the term "school learning climate" to emphasize the relation to achievement. The inclusion of the word "learning" is to help distinguish this usage from other, more common affective orientations of school climate.

The movement from a primarily normative definition of school social climate in Brookover and Erickson (1975) to a recognition of

behavioral and institutional factors is reflected in a later work summarizing the literature on effective schools, including an informal appraisal of the Pontiac project (Lezotte et al., 1980). School learning climate is defined in this work as, "the norms, beliefs and attitudes reflected in institutional patterns and behavior practices that enhance or impede student learning" (p. 4).

The latest work on school learning climate provides evidence for the further evolution of the concept. After several revisions which reflect improvements based on the ongoing project, the inservice modules have been published under the title Creating Effective Schools (Brookover, Beamer, Efthim, Hathaway, Lezotte, Miller, Passalacqua, & Tornatzky, 1982). School learning climate in this work is described in terms of degrees of effectiveness, i.e., the higher the achievement, the more effective the climate. The factors which contribute to more effective schools are gleaned from studies of effective schools (see Chapter III).

These factors are grouped in three areas: the ideology of the school, which represents the original normative definition of school social climate in Brookover and Erickson (1975); the organizational structure of the school, including such factors as grouping practices, emphasis on differentiation of students, and reward incentives for achievement for various role groups in the school; and the instructional practices in the school which encompass the actual teaching/learning interactions. In essence, the concept, "school learning climate," as used and developed by the Brookover-MSU team, has come to represent all the factors which contribute to high achievement, i.e., the characteristics of an effective school have been equated

with the expanded concept, "effective school learning climate."

Drawing on Brookover et al. (1982, pp. 28-31), a brief outline of the effective school learning climate is included here. This outline represents the objectives of the school climate improvement program.

A. The Ideology of the School

1. Beliefs and attitudes of the professional staff
 - a) All students can learn the school's objectives
 - b) All students are expected to reach high standards of achievement
 - c) Teachers can successfully instruct all students in the school's objectives
 - d) Individual and schoolwide achievement test performance is an appropriate goal and measure of school success
 - e) Staff norms of high performance promote achievement and counter negative staff attitudes and performance
 - f) The staff is committed to producing high achievement for all students, no matter what it takes
2. Students' perceptions of and behavior regarding the school learning climate
 - a) Norms of high achievement expected of all students
 - b) High self-concept of academic ability
 - c) Low sense of academic futility (see Chapter III), i.e., students perceive that their efforts matter and they control their academic and career success or failure

B. The Organizational Structure of the School

1. Role expectations for appropriate behavior defined in terms of achievement rather than non-achievement criteria

- a) "Effective teacher" defined as instructing all students to high achievement
 - b) "Good student" defined as high achiever
 - c) "Effective principal" defined as instructional leader who promotes effective instruction and high achievement for all students
- 2. Reward structures and systems in the school (and district) are centered on achievement
 - a) Teachers are recognized and rewarded for producing high achievement for all students
 - b) Students are recognized and rewarded for high and improved achievement
 - c) The principal is recognized and rewarded for promoting a high achieving school in which all students master instructional objectives
- 3. Stratification of students is minimal
 - a) Flexible heterogeneous grouping is used rather than homogeneous segregation by ability, race, or socioeconomic status (SES)
 - b) Test data is used for diagnostic purposes rather than sorting and selecting between levels of students
 - c) Compensatory and special education programs help students "catch up" to grade level and are coordinated with (and preferably conducted in) the regular classroom
- 4. Differentiation of the instructional program is minimal
 - a) ~~Common~~ instructional objectives are established for all students
 - b) ~~Common~~ expectations are set for all students
 - c) ~~Common~~ instructional materials are used for all students
 - d) ~~Common~~ role definitions are held for all students
- 5. Parent support and involvement are structured by the school to facilitate school achievement goals

C. The Instructional Practices of the School

1. School goals and instructional objectives
 - a) School goals are clearly stated, and first priority is attainment of mastery of grade level instructional objectives by all students
 - b) Standards for mastery of instructional objectives for all students, and procedures for certification of same, are clearly stated
 - c) Grade level instructional objectives are clearly stated and reflect priority of basic skill achievement
 - d) The professional staff recognizes and accepts the priority of mastery of the instructional objectives by all students
2. Effective teaching based on structured, direct instruction (Brophy, 1979; Good, 1979) incorporated into a mastery learning strategy (Bloom, 1976)
3. An orderly, work-oriented atmosphere reflecting effective school and classroom discipline
4. A high percent of academic-engaged time (Anderson, 1981) for all students
5. Use of academic team competition to promote peer learning and motivation (Slavin & DeVries, 1979)
6. Effective use of reinforcement principles, contingent upon expected learning conduct
7. Effective use of assessment data
 - a) Ongoing monitoring of student progress, including diagnosis and feedback to pupils
 - b) Accurate record-keeping of mastery of objectives for all students
 - c) Utilization of diagnostic information in planning corrective instruction for all students
 - d) Schoolwide data used for evaluating and improving the school's instructional program

The factors in the above outline are incorporated into a set of inservice modules designed to increase achievement by improving the

school learning climate. These modules, developed specifically for the Pontiac intervention, contain the essence of the school climate program. The modules are described below.

School Climate Activities Training

The first set of ten modules, entitled School Climate Activities Training (Brookover et al., 1978b), was prepared early in 1978 and was used in four elementary schools during the spring semester. These modules were as follows:

School Learning Climate: an explanation of the concept, its relation to achievement, and how to improve the climate in the school.

Individual Reinforcement Principles: a summary of correct use of these principles as related to praise and encouragement and the effects of teacher expectations on their use in classrooms.

Teacher Commitment and Student Learning: discussion of teacher dedication to all students' mastery of objectives and ways in which this communicates to students.

Group Learning Games: use of academic team games to promote peer instruction and motivation.

Expectations and Mastery Learning: brief summary for utilizing Bloom's (1976) mastery learning and how that relates to the self-fulfilling prophecy.

Academic-Engaged Time: discussion of the effects of high and low engaged time for students and suggestions for increasing the time-on-task.

The Principal as Instructional Leader: summary of the importance of instructional leadership for high achievement and suggestions for appropriate principal behavior.

Use of Evaluation: description of different types of achievement test data and how to utilize the results to plan for improving the instructional program.

Grouping and Differentiation: brief summary of the literature on grouping and description of the negative effects of homogeneous grouping.

Parental Involvement: description of a program/strategy by which the school and community can work to improve the learning climate in the home.

Following the experiences of the first year of use in the spring of 1978, the School Climate Activities Training (SCAT) program was revised during the summer (Brookover, Abbott, Hall, Hathaway, Lezotte, Miller, Passalacqua, & Tornatzky, 1978a). In addition to sharpening the focus of the concepts, an increase in the number of activities and more explicit strategies for implementation were stressed. The SCAT program was expanded to several more schools during the 1978-79 school year. The order of the revised modules was also altered to reflect priority of the topics for changing the school learning climate and increasing achievement.

School Learning Climate

Expectations and Mastery Learning

Group Learning Games

Use of Evaluation

Parental Involvement

Academic-Engaged Time

The Role of the Principal

Individual Reinforcement Principles

Teacher Commitment and Student Learning

At the conclusion of the 1978-79 school year, the SCAT program was to change focus. A Title IV-C, Elementary and Secondary Education Act (ESEA) grant through the State of Michigan Department of Education was obtained. The Pontiac School District began the process of taking ownership for the project, with continued, but less intensive, assistance from MSU. The program was renamed CRACKLE and a Title IV-C

project director from Pontiac took over the guidance of the program.

As a part of the CRACKLE Title IV-C grant, the modules were again completely and extensively revised. The major change was much increased specificity on "how to" implement the various modules, and a new module on discipline was added (Beamer, Brookover, Efthim, Miller, & Passalacqua, 1980). Considerable user input was solicited during the revision in an attempt to assist a staff to understand and implement the program at a higher level of use (see Hall & Loucks, 1977). A listing of the eleven modules gives some indication of the extent of the changes.

School Learning Climate

Expectations for Learning

The School as a Social System: Role Definitions
and Responsibilities

School Discipline and Classroom Management

Academic-Engaged Time

Effective Instruction

Grouping and Differentiation

Team Learning Games

Reinforcement

Use of Assessment for School Improvement

Parent Support and Involvement

The CRACKLE program was revised once more, this time for publication (Brookover et al., 1982). The major change for this revision was the addition of an Introduction on how to utilize the program, sharpened treatment of concepts and improved readability, more specific activities for each module, the addition of a brief annotated

bibliography, and a reordering of modules 4 through 7 only, as follows:

Module 4 Grouping and Differentiation

Module 5 Effective Instruction

Module 6 Academic-Engaged Time

Module 7 School Discipline and Classroom Management

Despite the evolving changes noted in this section, the overall purpose and format of the school climate program remained constant throughout the intervention: a comprehensive school-based program designed to raise achievement for all the students by improving the school learning climate. In essence the project was to create atypically successful urban schools by having the staffs of participating schools pattern their beliefs, instructional practices, and organizational structures after the characteristics of naturally occurring exemplary urban schools.

Research Questions

The overall purpose of this dissertation is to examine, via an organizational analysis, the processes and results of the SCAT improvement program. In so doing, it is necessary to focus the study on some particular questions. The following research questions give the specific objectives that will be addressed.

- I. With respect to policy and goals in the district, what processes and efforts of change can be attributed to the intervention program?
 - A. Have any changes in policy and goals occurred in the district since 1977?
 - B. If I-A occurred, can these changes be attributed to the intervention program?

II. What are the processes of and efforts to change behavioral practices in the schools among professional staff?

A. Have any changes in professional practices occurred in the district since 1977?

B. If II-A occurred, can these changes be attributed to the intervention program?

III. What are the processes and efforts to change professional staff's beliefs, attitudes, expectations, and evaluations with respect to students' abilities to learn?

A. Have changes occurred in these areas among the professional staff since 1977?

B. If III-A occurred, can these changes be attributed to the intervention program?

IV. Has there been an increase in school and district level achievement since 1977?

A. If IV occurred, can these changes be attributed to the processes described in I, II, and III above?

V. What was the overall impact of the school learning climate intervention program in the district since 1977?

Further discussion of these questions and the manner in which they will be analyzed is found in Chapter IV on methodology.

Significance of the Study

Several issues are related to the current problem. These issues, individually and collectively, establish the significance of this research. First, the entire question of equality in America has traditionally been viewed as a concern and responsibility of education. The schools are supposed to provide equality of education which in turn opens up social mobility and the American Dream to all--rich and poor, minority and white alike. As noted above, however, urban and disadvantaged schools do not, for the most part, provide that equality. The school learning climate intervention

project is an attempt to rectify that shortcoming.

Second, and closely related to the first, is the need for greater understanding of the schooling processes which produce effective schools. The proposed study addresses that issue since the intervention program attempts to produce effective schools.

Third, a need for greater understanding of the processes by which schools change is also needed. The intervention program being studied provides data for analysis of how change occurs; in short, producing effective schools requires knowledge of how organizations and schools change as well as knowing what the school should be changed to.

Fourth, the problem under consideration has not been previously researched. Studies of organizational and educational change do exist (see e.g., Herriott & Gross, 1979), but to the author's knowledge, the school learning climate as an educational innovation in a district has not been studied. Hathaway (1980) reported on a one-year intervention to raise achievement by improving the school learning climate in a single school. But the current project is multi-year and includes several individual schools and district-wide goals and policies. Furthermore, the goal of the current project was specifically focused on increasing levels of achievement in the basic skill areas of reading and math, whereas many intervention programs include or are limited to goals that do not pertain to achievement, e.g., the extensive literature on organizational development in the schools (Fullan, Miles, & Taylor, 1978).

In summary, several objectives are addressed by this study: the importance of improving disadvantaged urban schools in general, the need for further research data and analysis on the make-up of

effective schools and on the change process, and the extensive study of this particular intervention program.

Limitations of the Study

The current study is limited by several factors. First, although some longitudinal achievement data are available, causal modeling using repeated measures is not possible. The achievement data are based on tests which have undergone change during the study; thus, not all of the achievement data has the same significance. Second, some data on attitudes and behavior exist in various forms, but this data does not comprise a complete or consistent longitudinal set from which causal analyses could be conducted. Instead, the study must rely primarily on descriptive and historical analysis of critical incidents, personal observations, interviews, various documents and memoranda, and available research reports. The analysis therefore emphasizes the ongoing process of educational and organizational change. The available data provide benchmarks against which the effects of the processes described can be measured.

Third, not all of the schools in the district were involved in the study. Yet there is no possibility of a "clean" comparison between participating and non-participating schools. All of the schools were exposed to the intervention to some extent; a variety of other factors further compound the effects. Thus, it is not possible to attribute results in a given building solely to any single cause. This issue will be addressed further in Chapter V.

Fourth, this study is confined to a single district. No comparative data on the effects of organizational change in other districts

is possible. On the other hand, the district studied does provide a representative cross section of many poor urban districts. Because of the desegregation program in effect, however, the schools may not be representative of segregated schools. In general, the benefits of the study must come from insights into the nature of change and improvement of schools, rather than being able to generalize regarding the results.

Finally, the research in the area of educational change is primarily descriptive; models of change have significant theoretical shortcomings (see Chapter II). However, descriptive studies such as this are necessary for more complete theoretical models in the future; the current study contributes to the body of extant case studies yet is limited by the lack of theory in the field.

Summary

Wilbur Brookover and associates (including the author) at Michigan State University conducted a longitudinal intervention program in an urban, auto-dominated, industrial school district. The intervention was to raise achievement by improving the school learning climate. The study outlined above is an organizational analysis and description of that intervention program.

The community in which the research took place was described and details of the intervention were given. The research questions were listed, and the significance and limitations of the study were discussed. Changes in the conception of the school learning climate from the beginning of the intervention to the present were also described in order to link this study to the body of effective schools research.

CHAPTER II

THEORETICAL FRAMEWORK

This chapter will present the theoretical framework for the analysis of this study. At the outset, the author recognizes the limits of social science theory in the study of organizational change. These limits arise both from the nature of social science theory itself and from the particular problems associated with the study of organizations and organizational change. These two perspectives will be addressed in turn.

Nature and Limitations of Social Science

First, as Persell (1977) notes, social theory must address four levels of analysis--societal, institutional (or organizational), interpersonal, and intrapsychic. No social theory at this time adequately addresses all four levels. While there are macro or grand theoretical formulations, these do not provide the degree of specificity or predictability needed to guide policy formation or day-to-day routines. On the other hand, various theories exist in more limited contexts such as the interpersonal or the intrapsychic levels, e.g., symbolic interactionism as derived from the work of Mead (1934) or attribution theory as formulated by Kelley (1967) or Weiner (1972, 1979) among others. These two formulations primarily address the interpersonal and the intrapsychic, respectively, although

both are somewhat applicable at either level. But just as the grand theories do not possess the needed specificity at micro levels, the more limited theories do not address themselves to the problem of integrating all the various levels into a workable holistic framework. Furthermore, even the more limited theorizing at particular levels has not reached the levels of reliability of the physical sciences.

These problems, although significant, should not, however, leave the impression that the social sciences are of no help in the effort to understand and improve society. The efforts of social science over the past 25 or so years have been largely directed at what Merton (1957) calls "theories of the middle range." These efforts, aimed at understanding and explaining certain problems or aspects of social behavior, usually on a particular level of analysis, have provided us with a much increased understanding of the patterns and regularities of our social world. Thousands of studies of empirical findings provide data with which to test the validity of the propositions of these middle range theoretical efforts. While the levels of reliability and degree of understanding may not have reached that in the physical and biological sciences, they have far surpassed the level of "common sense," tradition, religious certainty, or mystical cults that would be the alternative to the social sciences (Harris, 1974, 1979). Even education, probably the least advanced of the social sciences, can make this claim (Gage, 1978).

Perhaps one of the best ways to assess both strengths and weaknesses of the social sciences in general or a given theory in particular is to address the uses of scientific theory. O'Connor (1957) suggests that theories have several functions--organization of

knowledge, description, explanation, and prediction. Harris (1968) suggests that another important form of prediction is retrodiction, the capability of a theory's predictions for behavior in times past to accurately reflect what in fact did happen. In this sense, retrodictive statements based on theory can be tested against historical findings, whereas post hoc explanations merely attempt to make sense of known historical events.

Scientists in general stress that propositions about knowledge are stated in terms of probabilistic outcomes (e.g., Harris, 1968, 1979; O'Connor, 1957; Wilson, 1975) and that theories are to be evaluated in terms of comparisons based on which formulations provide the most accurate and reliable descriptions, explanations, and pre/retrodictions with respect to the reality of the surrounding empirical world. Implicit in the scientific outlook is the requirement that theoretical propositions will be revised to conform to the realities of the objective world as they are tested with data. Implied also is the requirement that new theories which out-perform old theories are preferred, but, as Kuhn (1970) notes, a given theoretical outlook or paradigm often acquires familiarity, allegiance, or other sentiments which can impede the acceptance of new theory. On the other hand, the difficulty that new or competing theory(s) encounter also leads to more stability in the scientific world; when a new paradigm is finally accepted, there is less likelihood that it is based on fad, a condition which is all too prevalent in disciplines where personal experience or "practice" are preferred over theory, e.g., education in America as exemplified by the "adoption" of one new innovation after another throughout the twentieth century (Gage, 1978;

Goodlad, 1975).

While the limitations of social science provide a general framework, it is also necessary to consider the limitations of organizational change theory. This second set of limitations are particularly germane, given the research problem which this study addresses.

Organizational theory cannot claim a single dominant perspective; rather, several viewpoints or models are prominent in the field. Part of the reason why this lack of consensus exists stems from emphasis on different levels or units of analysis. The study of organizations results in different insights depending on whether one analyzes individuals in the organization, the organization itself, several similar organizations, or the relationship between the wider society and the organization. Further differences can arise from focusing on power and control and their use as opposed to examining the structures and functions of organizations. Furthermore, social science is supposedly value neutral, but differences can also arise due to underlying premises as to whether organizations are basically good or evil. These and other perspectives have resulted in posing different questions, examining different aspects of the organizations, and formulating different theoretical models. To this date no single model adequately encompasses all of these perspectives.

This situation of multiple emphases and models could lead to a relativistic "pick the model which you like best" impasse. But the reality of the social world precludes this. While it is possible to ask different questions or emphasize different aspects in different

models, it does not hold that all questions, emphases, or models are of equal importance or produce equal results. In selecting a theoretical framework from which to conduct a study, the functions of theory (O'Connor, 1957) and the criteria for evaluating scientific evidence (e.g., Denzin, 1970; Harris, 1968, 1979; Kuhn, 1970; Wilson, 1975) must be considered. The framework to be developed below reflects this.

The literature on organizational change is even more problematic than on organizations. Much of this literature is completely atheoretical, consisting of no more than case descriptions of attempted change. Although some models have been developed, they are rudimentary at best. For example, Gross and Herriot (1979) have formulated a model that incorporated aspects of several earlier and simpler models of organizational change. But even this newer expanded model, the Elaborated Leadership Obstacle Course, remains primarily at the first two levels of the functions of theory--organization and description. Explanation and especially prediction are barely addressed. Although oversimplifying, these four functions of theory could be compared, respectively, to classifying what is known, telling how something occurs, exploring why it occurs, and being able to tell how much or under what conditions it occurs. Thus, each function of theory provides a more advanced level of knowledge. By this analysis, current work on organizational change provides some guidance to important factors to consider in classifying or describing the change process, but little help in explaining why, when, or how much change might occur.

The assessment above agrees with Whitford's (1981) conceptualization of the weaknesses of theoretical models in this area. Although the current study does not provide an improved model for organizational change, the general problems of explanation and prediction in this area are discussed.

The foregoing section has briefly presented some of the limitations and weaknesses of social science research, especially as related to the areas of organizations and organizational change. The existence of certain criteria which must be considered when setting forth the theoretical framework for a study were also discussed. The framework to guide the current study is developed in the following section.

The Theoretical Framework

As noted above, asking the right questions is essential to good theory. The first question in this case is, What is the objective (or innovation) of the organizational change under consideration? Chapter I describes the sequence and details by which the school learning climate improvement project came about. This chapter in turn addresses the conceptualization of the school learning climate and the theory from which it derives.

The School Learning Climate

The school learning climate refers to the factors within a school which work to impede or enhance student learning. As used currently (Brookover et al., 1982), the concept examines the ways in which three separate but interconnected aspects of the school combine to provide an overall environment that is more or less conducive to

learning. These three factors are as follows: (1) the ideology of the school--the beliefs about students' abilities to learn, expectations for students, attitudes, self-concept, sense of control, and other related factors. These factors include aspirations, values, and expectations of all of the various groups in the school--teachers, students, parents; however, the staff's beliefs and attitudes have been found to be especially important in shaping the overall learning climate in the school. Put simply, school-to-school differences in the extent to which students are believed able to learn and are expected to learn (because of SES, race, labeling, or other characteristics) are associated with differential levels of student learning; (2) the structure of the school--horizontal and vertical means of stratification (e.g., tightly or loosely coupled, the extent of student grouping by ability or curriculum), role definitions of appropriate behavior, and reward structures and incentives are some of the factors in the structure of the school. Size, staffing patterns, and age of students are others; (3) instructional practices of the school--the actual delivery of the educational content to the student by the teaching staff. For example, the extent to which some form, explicit or implicit, of teaching for subject mastery occurs, the amount of academic time-on-task, use of reinforcement principles, or use of academic team games are some ways in which instructional practices are delivered and can vary from teacher to teacher or school to school.

The concept of school learning climate focuses on the overall interaction and interconnectedness of these three factors, with the assumption that the level or practice in one area will have some

relation to what happens in the other two areas. Likewise, it is assumed that changes in one area will likely result in changes in one or both of the other two areas.

Theoretically, the concept has moved to this focus on all three sets of factors because empirical research has indicated the need to broaden the investigation of the factors which influence student achievement. Early research on the school social climate (Brookover & Schneider, 1975; Brookover et al., 1979) focused on the attitudes, expectations, and evaluations that teachers held for students (the ideological component). It is this strand of research which has primarily guided the work on school learning climate from its inception: students perceive and learn what is appropriate and expected behavior for them in a given school and learn to behave in a manner consistent with those expectations.

Brookover (1959) has identified this emphasis on perceptions of expectations for appropriate behavior as a social-psychological conception of school learning. It is based on the symbolic interactionist wing of sociology. The foundations of symbolic interaction derive primarily from the work of Mead (1934) and Cooley (1902). Mead's formulation of the "generalized other" is basic to this understanding.

The very universality and impersonality of thought and reason is from the behavioristic standpoint the result of the given individual taking the attitudes of others toward himself, and of his finally crystallizing all these particular attitudes into a single attitude or standpoint which may be called that of the "generalized other" (1934, p. 90).

In other words, the process by which the individual internalizes the attitudes of the social group becomes the basis of symbolic

[illegible]

interactionist theory. First, the medium of interaction is symbolic--words, ideas, thoughts--primarily in verbal form. Symbols carry common meanings which allow communication of intents, needs, etc., between the individuals who share the symbolic matrix. Second, the social act is the basis of the interaction. Symbols are communicated in the process of carrying out the social basis of life, as defined by the members of a given society (Mead, 1934).

Mead's work as described here has been extended and refined by various theorists. Particularly related to the work on school learning climate are two areas. Brookover, Erickson, and Joiner (1967), in the third report of a longitudinal study of self-concept and achievement, emphasize the distinction between perceptions and objective reality. Building on the work of Thomas (1931), who said, "The things that men believe to be real are real in their consequences" (p. 189), Brookover et al. (1967) stress the processes by which perceptions are picked up and reinforced. They show that the expectations of significant others are highly influential in the actual perceptions that students hold and act on with respect to school-related phenomena. This work is clearly consistent with the other related area of symbolic interactionism, the work on reference groups and significant others (see Rose, 1962; Shibutani, 1962, for discussions of symbolic interactionism and reference group theory, respectively).

The influence of reference groups on normative values, shared (symbolic) attitudes, and beliefs about appropriate behavior in a given social situation relates directly to the ideological component of the school learning climate: among various groups of actors in

the school, the complex of attitudes and beliefs combines to form a common basis for appropriate behavior in that setting. The underlying basis of this complex set of interacting norms is the shared meaning of communicated and perceived expectations for behavior in the social setting (the school). Of course, not all of the groups within a school share common purposes or expectations. Certain student groups for instance, may pursue goals widely disparate from academic achievement; for that matter, teachers may hold different goals and expectations for different students, e.g., the college prep students versus the vocational track. But the particular combination of groups, expectations, and perceptions that occur within any given school will define appropriate behavior for that school, including conflict between groups if that is the consensually shared meaning of perceptions.

At this point, it is necessary to return to Persell's (1977) admonitions about the appropriate level of analysis. Clearly, symbolic interactionism is a social-psychological interpersonal level theory that focuses on how attitudes and behavior are interrelated. The school learning climate, an application of this theory to schools, describes the effects particular complexes of symbolic belief systems (with varying degrees of consensus) have for various behaviors, e.g., achievement, college attendance, dropping out of school, etc. In general this theoretical perspective does not focus on the mechanisms by which a given individual processes the variety of stimuli in the social setting to produce a given attitude or decision. Some of the work on self-concept, self-esteem, or self-investment (see, e.g., Brookover et al., 1967; Faunce, 1979) does

look at internal processes, but for the purpose of better understanding interpersonal interaction. On the other hand, cognitive social psychology has focused on intrapsychic processes. This discipline also looks at interaction but as it relates to within-the-individual processes. These two theoretical perspectives are closely related. However, for the current study, the focus will remain at the interpersonal and organizational levels. This is not to say that cognitive social psychology cannot provide further insights; rather, the limits of this study and the data available preclude that investigation.

Symbolic interactionist interpersonal analysis has other shortcomings. At the more inclusive level of organizational analysis, the focus on interaction between individuals can prevent a fuller understanding of the relation of the organization as a whole to the wider society. Interpersonal analysis can ask why persons behave as they do within the organization; organizational analysis is more effective in asking why and how the organization qua organization is (and acts) the way it is.

Despite the limitations of symbolic interactionist theory at the intraindividual and organizational levels, this perspective is crucial to this study. The descriptive nature of the case study focuses on interpersonal behavior as well as organizational change. Symbolic interactionism provides a framework for interpreting change by and between individuals. The description of the normative behavior of various groups in the school within the framework of the school learning climate, as outlined in Chapter I, is a specific example of this theoretical perspective.

Organizational Analysis

As noted above, the literature presents several competing models of organizational behavior. Choosing a theoretical framework from these requires value judgment on the strengths and weaknesses of the perspectives of the various models. Reviews of the literature provide helpful insights on relative effectiveness of different models, but the reviews themselves can (and do) reflect the bias of the scholar's own training. For example, a general text or review written by a theorist/researcher trained in the human relations theory of organizations (Likert, 1967) will stress different aspects and ask different questions than a review/analysis from a Neo-Weberian-contingency theorist such as Perrow (1979).

One possible means of resolving this problem is to choose a model that stresses the aspects of an organization which are closest to the specific research questions in the ongoing study. But this in some sense creates a situation in which the tail wags the dog, i.e., research determines theory rather than theory guides research. This implies that all (competing) theory is of equal value and the researcher's preference becomes the deciding factor. Furthermore, if by this approach, a model is chosen which focuses on the individual within the organization, there may still be more than one model which looks at individual behavior. Finally, by choosing a model that is consistent with the level or unit of analysis, that model may deflect attention from questions that would focus on the relationship to a level of analysis higher or lower than the unit chosen, simply because that model itself does not raise these relational problems.

But giving reasons why specific approaches to choosing between conflicting models are unsuitable does not resolve the issue. Some criteria for choosing are still needed. Those criteria must be consistent with the commonly accepted canons of scientific thought as noted in the section above, primarily the degree to which competing theories provide probabilistic confirmation based on empirical evidence. Looking at macrolevel sociocultural theories can be an important guide to this process.

As explained in the section on the limitations of social science, macrolevel sociocultural theories do not provide sufficient detail to explain events at micro levels. Theories which focus on lower (or smaller) units of analysis are necessary (at the present state of development of social science) to explain specific or short range behavior. But these micro level theories should be consistent with the best available sociocultural level theory.

This last assertion requires further explanation. One of the canons by which science evaluates competing theory is scope or range, the extent of the universe that the theory purports to explain. All other things being equal, the theory with greater scope is preferred. The result of greater scope is that theory is better interconnected into the wider universe. Conversely, theories with limited scope are in danger of being so isolated that they cannot be generalized beyond very situation-specific contexts. It follows then that as theories become more powerful, they must increase in scope. And as the scope increases, the theory approaches the level of generality of macro theory. Hence, increases in the scope of a theory must be in the direction of the best available macro theory.

Fortunately, the difficulty of evaluating competing theories at this level is less difficult. These macrolevel theories must account for available evidence on the question of the basic determining factors of society. Much of the best evidence comes from historical, anthropological, and archeological studies. Thus, the best socio-cultural theory must retrodict to available evidence in these areas. Evidence is accumulating around the cultural materialism theory of Marvin Harris (1968, 1979), and both archeologists and anthropologists are among the forefront of social scientists who are moving in this direction.

This theory posits that societies and cultures evolve and are shaped in the long run primarily by the manner in which people manage to produce the basic requirements of life such as food, shelter, transportation, clothing, and reproduction. Systems of governance, rules of lineal descent and property, social groupings, and familial arrangements are primarily accommodations to the basic modes of production. Ideological components of the culture provide a set of values, beliefs, religion, myth, etc., which justify or rationalize the system that has been created to meet the basic necessities of life. This theory is not strictly mono-causal. Short-run decisions and current social structures provide feedback which can affect the production system. A common instance of this is Ogburn's (1938) concept of cultural lag, in which prevailing beliefs and institutional features change more slowly than the technological base, causing social dislocations as people continue to be guided in daily behavior by now outmoded (slowly changing) beliefs. This brief description of Harris' theory (1977) provides the basis upon which competing

organizational models can be judged: to what extent are the various models consistent with the theory of cultural materialism.

No single organizational model is wholly consistent with Harris' work. However, the emerging field of work on network analysis and the environment (e.g., Domhoff, 1979; Perrow, 1979) probably comes closest to this position. A brief description of the major emphasis of this field follows. Research in this area has not yet been synthesized into a representative model, but similar interests can be identified among various researchers.

Two major questions dominate: (1) What is the relationship between the organization(s) and the larger environment? This includes describing the other organizations with which a given organization interacts (often referred to as an organizational network), the processes by which the organizations in this network influence one another, the effects of the network on the goals and production of a given organization, and the causal issue of whether the environment influences the organization or vice-versa; (2) Who or what controls the organization? Issues here include: whether actors in the organization set goals, policies, etc., or whether the organization takes on a life of its own, generating a momentum over which persons have little control; analysis of interlocking directorates; relative control of organizational elites versus bottom-up participant control; and influence of society's wealth or power elite versus upper level management who direct organizations operationally. As this representative set of issues illustrates, the major thrust of this field is not only how individuals interact and organizations work but also why certain complexes of behavioral interactions and

organizational patterns came about instead of some other pattern. Applying these concerns to schools would shift the focus from an emphasis on merely describing, for example, the school learning climate and its effects on student outcomes, to an additional concern with why a school has a given learning environment.

These concerns are important to the current study. This case history looks at organizational change at the level of the individual school and in the district as a whole. The analysis focuses on those environmental forces which impinge on organizational behavior. Thus, organizational theory based on environmental analysis provides direction to this study apropos to the research questions identified in Chapter I. Likewise, this framework is consistent with the issues just discussed regarding the philosophy of science.

One last concern relates to theories of organizational change, which will be briefly dealt with in the next section.

Organizational Change

People who work in and with organizations, as well as social theorists who study them, are often concerned with not only understanding how and why they work but also how and why they change and how to control that change. But the state of the art in this field is undeveloped at best. The model by Gross and Herriott (1979), referred to above, is probably the most complete attempt at theorizing in the area; yet it is hardly more than a descriptive categorization of stages of change that administrators should be aware of in order to enhance the chances of successful planned change. While this is a necessary stage in theory building, factors relating to explanation

and prediction are also needed.

Because the literature on organizational change does not provide an adequate theoretical guide, it is necessary in this area to turn again to the framework developed above for organizational theory. For the same factors which are theoretically important in understanding both how organizations operate and how they relate to the wider society also are important in understanding how and why they change. Thus, for this study the guiding theoretical perspective for organizations (described above) will also be used to address organizational change.

Two related points can be made. First, for both organizations and organizational change, reward structures within the organization and in the wider society, probably much underestimated and too little studied, are consistent with the framework developed above and will be utilized in this study. Second, cognitive social psychology on the relation between attitudes and behavior (e.g., Abelson, Aronson, McGuire, Newcomb, Rosenberg, & Tannenbaum, 1968; Fishbein, 1967; Weiner, 1972) and sociological work on social change and social movements (e.g., Howard, 1974; Lauer, 1977; Rogers & Shoemaker, 1971) can probably provide more insight into problems of organizational change than the more atheoretical case studies and descriptions of much of the work on educational change. This literature will be utilized as apropos.

Conclusion

This chapter has developed two main areas. First, parameters and constraints on the criteria by which social science theory is

developed and evaluated were briefly discussed. Within this context, theoretical perspectives for the school learning climate, organizational analysis, and organizational change were developed. In the next chapter literature in these three areas will be reviewed relevant to the current study.

CHAPTER III

REVIEW OF THE LITERATURE

Chapter II provides a theoretical framework for this study. This chapter reviews the literature pertaining to the problem. The review will present an historical overview in order to integrate previous research from three separate but related areas--organizational theory, educational change, and school learning climate. Yet the literature in each of these areas is voluminous and much is of only secondary interest to this study. Therefore, this review will be selective and critical rather than exhaustive. Selection and critique are guided by the framework developed in Chapter II.

A separate section will be devoted to each of these three areas. But between and within sections there are no easy or neat categorizations of types of studies. Strands of research overlap in methodology and content. The focus of research changes over the years, and concepts come to have different meanings. In some sense then, any attempt to order the literature produces arbitrary decisions. Yet the range of studies requires a framework in order to note generalizations and exceptions. Likewise, changes over time will be analyzed, and an attempt will be made to explain shifts in meaning of concepts or research focus. Thus, this chapter extends, follows, and relates to the theoretical framework described above.

School Learning Climate

A full understanding of the concept, "school learning climate," requires that it be placed in historical context. As noted in Chapter I, the concept as used currently includes behavioral and structural components of the school social system (Brookover et al., 1982; Lezotte et al., 1980) which relate to student learning as well as the emphasis on social-psychological norms, attitudes, and beliefs that are associated with achievement in earlier work (e.g., Brookover & Schneider, 1975; Brookover et al., 1979). Reasons for stress on achievement, the earlier social-psychological approach, and the more comprehensive conceptualization of recent work become more evident if this strand of research is related to the larger field of research in the sociology of education.

Historical Context

The landmark decision Brown v. Board of Education (1954) in school desegregation was a major factor in drawing attention to the legal and social inequities in the U. S., but also on social science research on the schools. Very little empirical research had been done prior to that time (Brookover, 1982).

In the years that followed, the status-attainment model of research predominated; studies focused on the relation between demographic variables, ability, and years of schooling. The theoretical framework was that of functional sociology and was closely tied to the work on education and social mobility (e.g., Blau & Duncan, 1967; Duncan, Featherman, & Duncan, 1972). The work of Sewell and Shaw (1967) is representative of the Wisconsin model of status-attainment,

an extension of the Blau-Duncan work that emphasizes the social-psychological effect of aspirations as mediated through significant other interactions. This research is extensively reviewed in Hauser's (1971) study of 1957 data on high schools from Nashville. This analysis, and these studies in general, concluded that variance in achievement between schools was small (15-30%) and was due to differences in SES due to the composition of the student body from one school to the next. Hauser (1971) argued that there was no evidence for any contextual effect in schools, i.e., what happened in a given school was simply the aggregation of the individual abilities and social class background of the students in the school. If the students in a school were different, then outcomes would differ accordingly, but a group or school effect over and above the summed individuals was not evident.

Persell (1977) reviews these earlier studies as well as later research in this area. Hauser, Sewell, and Alwin (1976) conclude again that high schools make little difference (1-2% of the total variance) after controlling for differences in the aggregate characteristics of the student body from one building to the next. But as Brookover et al. (1979) and Persell (1977) note, these status attainment studies use data in which the average SES of the student body is used as a proxy for the climate in a school. No direct measurement of the social-psychological processes in the school is available, a caveat that Hauser et al. (1976) note but dismiss as unimportant. But as will be shown below, this methodological point can result in widely different conclusions about the effects of schools. The "no school effects" of the status attainment literature has not gone

unchallenged.

In a related body of literature, high school students' aspirations for college or job were analyzed for impact on actual college attendance or vocational decision. This review by Bain and Anderson (1974) looked at the social or school climate of the school as it related to future outcomes, but like the work on status-attainment models, aggregate SES of the student body was a proxy for school climate (see Brookover et al., 1979; Lezotte et al., 1980, on this issue).

Persell (1977) suggests that the status-attainment work described above was in general based upon a model of social causality in which education is a major determinant of adult occupation and social status. And education, in turn, is largely determined by individual ability. In other words, this is a highly meritocratic model. The work of Parsons (1959) is relevant here. Parsons described the relation between schools and the wider society in terms of the then predominant structural-functional (pre)paradigm of sociology. The major function of schools was to sort and select for talent in accord with society's stratified economic needs. In this sense, the status-attainment work can be seen as an empirical extension of Parsons' (1959) heuristic model of meritocratic selection.

But a major event in United States history was to provide a new research direction that provides an alternative to the status-attainment/structural-functional model. Brown, the electronic media, growing affluence, and other factors led to the stirrings of the Civil Rights movement; see Howard (1974) for a review of this movement. In 1964, a coalition of blacks, liberals, and northern

moderates passed the Civil Rights Act. This act called for a massive survey to determine the factual basis of segregation and inequality in American schools. The presumed inequalities to be found between black and white schools in the South were to be used as the basis of Justice Department enforcement of the Brown ruling. That study by Coleman et al. (1966), later to be known as the Coleman Report, became a landmark in school effects research.

Prior to the Coleman Report, schools were evaluated primarily by the amount of inputs which they received. These inputs were factors that could be measured in quantitative terms: teacher salaries, number of volumes in the library, per pupil expenditures, age of buildings, size of science labs, years of faculty experience, etc. It had always been assumed that inequalities in these areas were responsible for inequitable outcomes. The Coleman Report showed otherwise. These input factors had virtually no relation to achievement. On the other hand, the major factor in achievement differentials both between schools (15-35% of the total variance) and within schools (65-85% of the total variance) came from family background as measured by SES and race. Schools had little effect on achievement after SES and race were controlled.

At first this seems to confirm the status-attainment literature. But three differences can be noted. First, there was some school effect, even if not a lot. Second, some of the school factors which were related to differences in outcomes were social-psychological and qualitative. After controlling for the background demographic variables, the student body composition as measured by SES and percent white explained the greatest proportion of achievement variance. So

far, these results were not all that different from the prevailing research in the area. But the other findings in the social-psychological realm were to become a major influence on future research. The students' perceptions of their control of their fate (sense of control) was the next greatest factor in the school, and this factor appeared to be somewhat independent of individual family background characteristics of the school. For teacher variables, the most important was a measure of teachers' verbal ability. These findings were to mark the beginning of a research effort to find the factors, in large part social-psychological, which accounted for differences in school quality. Smith's (1972) reanalysis of the Coleman Report, focusing on teacher perceptions of tracking, among other factors, foreshadowed much of the ensuing emphasis on expectations and perceptions in research on school effects.

Third, the Coleman Report became a major policy instrument. The subject of extreme polemics, ongoing policy debate, and numerous re-analyses (e.g., Harvard Educational Review, 1968; Mosteller & Moynihan, 1972), the Coleman Report achieved educational and public prominence that the academically focused status-attainment work never had. Thus in large part the controversy generated by the Coleman Report lead to the later emphasis on the social-psychological factors in the school.

However, the findings of the Coleman Report were not the only factor involved. At about the same time, Johnson's Great Society War on Poverty was becoming the major force regarding educational policy. Two underlying premises guided this policy, which resulted in programs such as Headstart and Title I remedial assistance (Ryan, 1976).

First, liberal politics and functional sociology, as represented by the status-attainment work, assumed that education was the primary factor in producing the talent needed for American technology and the primary avenue to social mobility for bright, energetic individuals from all levels of society. In short, education was the key to a meritocratic society.

Second, the environment in which lower class, primarily black, children grew up precluded their becoming a part of middle class America, not because of a lack of native ability, but because the "culture of poverty" (Lewis, 1966) produced in them a value system which was debilitating. These children of poverty acquired values that moved them to desire immediate gratification, a life of welfare, promiscuity, an aversion to hard work, and a dislike of school and authority as opposed to the middle class virtues of hard work, delayed gratification, strong family life, success in school, and respect for authority. The extra boost of the War on Poverty remedial educational programs was needed to overcome these effects of poverty.

In this context the Coleman Report, with its findings that schools had little impact over and above family background and that achievement was highly associated with race and SES, was taken by many as confirmation of the culture of poverty hypothesis.

Many researchers, however, remained unconvinced that the results of the Coleman Report or the culture of poverty thesis were valid. Over the next few years, both were to be critiqued widely: the Coleman Report, first in the series of policy debates and reanalyses noted above and later in the research on effective schools described below; the culture of poverty in a series of works which questioned

the premises, the data, and the causal ordering between the imputed negative values and the dismal economic circumstances. Ryan's (1976) work is perhaps the most widely known critique of this middle class ideology of "blaming the victim," but Ryan's impassioned expose of the self-gratifying, conscience-salving belief system (the liberal could help the victim of poverty improve or change his/her deficient attitudes or skills while ignoring the structural inequities in society that cause the problem initially) is supported by several more staid social science critiques (e.g., Leacock, 1971; Persell, 1977; Stein, 1971; Valentine, 1968, 1971).

As of this date, it is safe to say that most serious social scientists accept the cultural deprivation explanation as bankrupt. But as will be evident in the review of effective-schools literature, it unfortunately is a concept that still holds considerable influence among the public, policy makers, and educators alike. Regardless of today's educational beliefs, however, the critique of this thesis was one of several strands of research which led to the current emphasis on social-psychological processes in the study of schools.

But the trends and events mentioned above are not the only ones that had an influence on research in this area. At least three other conceptually distinct, yet related movements must be recognized.

First, the relationship between teacher expectations and student achievement, while a central aspect of research on school learning climates and effective schools (e.g., Brookover, Schweitzer, Schneider, Beady, Flood, & Wisenbaker, 1978c), clearly has also been an independent movement. For example, two early works dealt with low expectations in ghetto schools and consequent negative effects for

students and communities (Clark, 1965; Harlem Youth Opportunities Unlimited, 1964). In addition to such early work in minority communities, there was the contribution of psychologists. Perhaps the popularizing event in this field was Rosenthal and Jacobson's (1968) earlier work on the experimental bias effect in experimental psychology. His documentation of this effect in animal studies led to the now famous case in which selected, randomly chosen students were designated as "bloomers" to the faculty in Oak School. Later re-testing showed that the I.Q. of these "bloomers" went up significantly more than the remainder of the class. Although the original study has been severely critiqued on methodological grounds, the self-fulfilling prophecy in the classroom became a major research area.

Questions which remain in the field now have to do with how expectancy results are transmitted (see Brophy & Good, 1974; Persell, 1977, for reviews) or the causal ordering of teacher expectations and student results (e.g., Crano & Mellon, 1978) rather than the existence of the effect. Teacher expectations are now recognized as one of the primary factors among the social-psychological processes which account for variations in between school quality.

A second source of emphasis on social-psychological processes in schools is closely tied to the literature on organizations. Much of the work on educational administration has been heavily influenced by the human relations model of organizations. This tie can be seen in the concern for the degree of "good feelings" in the relation between principal and staff and among staff members. Supposedly these good feelings result in higher job satisfaction with consequent better

performance by staff. Perrow (1979) provides a description and critique of the human relations model in which he notes that implicit in this model is a concern for social control. This is consistent with Mills' (1959) earlier critique of the human relations theorists. Clearly a major criteria for evaluating schools has been social control, both well disciplined students and a satisfied, accepting staff.

Perhaps it is this implicit thrust for social control, among other factors, that has led to an ironical situation vis-à-vis research on the social-psychological processes in schools: the most widely known explicit measure of the "climate" in a school, the Organizational Climate Description Questionnaire (OCDQ) by Halpin and Croft (1963), which is also the most widely studied of the various climate conceptions, has probably contributed least to knowledge about processes in the school that affect achievement. (See Green, 1976; Mullins, 1976, cited in Halpin & Andrews, 1977, for reviews.) Whatever the reason, the simple fact is that very few studies using the OCDQ have used achievement as a dependent variable. The pre-dominant concerns of this movement have been adult job satisfaction, relation to change (but not change in achievement), problem solving, and communication.

It would seem that this strand of research either has simply assumed without testing that the factors listed above would result in higher achievement. (This is clearly the case in the school-based organizational development movement (OD), which is closely associated with both the human relations model and the use of the OCDQ (see Fullan et al., 1978). Or perhaps these researchers have assumed that

schools are not likely to have much impact once family background differences are accounted for, in which case correlating with achievement would be wasted effort. Of course, Halpin and Andrew's (1977) assessment of the research generated by his own work 14 years earlier (Halpin & Croft, 1963) could also be a factor: most of the subsequent studies were poorly done and had no theoretical focus.

Whatever the reason, there is a need for more work in this area. Several empirical analyses show no relation or even a negative correlation between adult satisfaction and achievement. A study by Conran and Beauchamp (1976) showed that the organizational climate of adult-oriented job concerns and feelings was negatively associated with achievement. Brookover et al. (1979) found no relation between satisfaction and achievement. One theorist (Hage, 1965) even suggested that one axiom of organizations is a negative correlation between satisfaction and productivity. More will be said on this topic in a later section.

The third related area which contributed to the social-psychological emphasis in studying schools was the work on self-concept. Much of this work has dealt with a global definition of self, sometimes termed "self-esteem" (see Coopersmith, 1967; Rosenberg, 1965) and is less directly related to schools and achievement. But a considerable number of studies have investigated self-concept of academic ability or a similar construct. The work of Brookover and associates at Michigan State University is particularly germane here.

This literature is reviewed and the results of a longitudinal study of the relation of self-concept of ability to achievement in

high school are reported in Brookover, Paterson, and Thomas (1962), Brookover, LePere, Hamachek, Thomas, and Erickson (1965), and Brookover et al. (1967). The significant findings of this study for the present review are contained in the relationship between the evaluations of student ability held by significant others, students' perceptions of evaluations of their ability by significant others (the primary factor in the conceptualization of self-concept of ability), and school achievement. In sum, self-concept of ability functions as an intervening variable between significant other expectations and evaluations of students and student achievement. The construct also functions as a threshold variable, i.e., a necessary but not sufficient factor in high achievement. The concept demonstrated very little reduced effect on achievement when measured intelligence and SES were partialled out. Furthermore, changes in the level of expectations and evaluations were highly associated with changes in self-concept.

This work on self-concept of ability is an antecedent to the conceptualization of the school learning climate. Brookover and associates incorporated both the theoretical framework of symbolic interactionism and the empirical findings on expectations for and evaluations of students into the social-psychological measures of the school social climate. A description of the developmental process is presented in Brookover and Schneider (1975).

The historical background described above is not intended to be exhaustive. Indeed, one could argue that important factors in the development of research on effective schools have been left out. In particular, the research on effective teaching (reviewed in Brophy,

1979) has not been included. This area has been far more concerned with individual teachers and their combined effects within a school. Gage (1978) summarizes much of this work and the assumptions of the related process-product (pre)paradigm. But the current study focuses on the organizational level. The delivery of instruction by staff is one component of this level, but the study of the actual teaching process lies at the individual level of analysis and is beyond the scope of this study. Furthermore, as Goodlad (1975) notes, a full understanding of individual teacher behavior is impossible without analyzing the contextual constraints and normative forces embedded in the social system in which the teacher works.

Despite the lack of complete comprehensiveness, the above outline does provide a background from which to review current work on effective schools. It is important to note that influences and trends in the social scientific study of schools are not unrelated to the forces in the wider society which are reflected in efforts to change and improve the schools. The attempt to understand these societal influences on schooling necessitates the use of a theoretical conception of organizations, as described in Chapter II, which focuses on historical and external environmental factors. The emphasis in this review on historical trends as well as on studies directly related to the current problem reflects this theoretical perspective.

The School Effects Literature

The conclusion by Coleman et al. (1966) that schools make little difference on achievement independent of family background characteristics must be placed in historical perspective. Although earlier

sociological studies had clearly shown that family background characteristics were the major determinants of achievement (see e.g., the classic studies by Hollingshead, 1949; Warner, Havighurst, & Loeb, 1944; and the review by Hauser, 1971), educators in general still had a rather naive faith in the goodness of schooling. The sociological studies had not yet penetrated general consciousness in educational circles.

Another factor in this general faith in education was the continued acceptance of dollar-related input factors as the key determinant of school quality. The Coleman Report (1966) laid to rest this myth and received the kind of publicity that general education could not ignore. Coupled with the Great Society's War on Poverty and its increased publicity on the plight of the poor, including their educational shortcomings, the Coleman Report can be looked at as the beginning (symbolically) of the widespread conclusion that schools do not make a difference.

On the other hand, the research on effective schools is predominantly upbeat, giving us reassurance that schools in fact can and do make a difference. Social science has progressed to a point that former findings are now questioned and conclusions have come about face. To explain why this shift has occurred, it is necessary to trace the development of the school effects literature.

As noted above, the Coleman et al. (1966) research has been extensively reanalyzed and critiqued (e.g., Harvard Educational Review, 1968; Mayeske, Wisler, Beaton, Weinfeld, Cohen, Okada, Proshek, & Tabler, 1972; Mosteller & Moynihan, 1972). Despite all of the critiques, the major findings of the report are now accepted as

basically sound. But the debates and further research spurred by the controversy produced advances in both understanding and methodology on the factors which affect school quality. These advances will be briefly reviewed below.

Parenthetically, the changes in the variables studied and in the basic conclusions in the 15 years of research on schools from the mid 60s to 1980 are consistent with Kuhn's (1970) work on advances in science, i.e., the major problems of a discipline gradually yield to normal science, improvements in instruments and methodology, and the combined effects of many studies, most by researchers who will never contribute major theoretical advances. In this case, the major impetus was an intuitive and somewhat experiential sense that the conclusion that schools make little difference was wrong. Well educated and financially able parents, policy makers, and researchers (see the revealing anecdote on network information about the "good" schools in Pettigrew, 1975) had characteristically ensured that their own children were enrolled in "good" schools, either private or public.

Input-Output Studies

Large scale survey data bases which compare student and family background and school characteristics to some outcome measure, usually achievement, have been the mainstay of educational research on schools in both sociology and economics. It was this kind of research, of which the Coleman Report is the prototype, which had led to the dismal conclusion about schools in the mid 1960s.

In 1972, another major study concluded that schools had virtually no effect on adult income and earnings. Family background and luck appeared to be the key factors. This study by Jencks et al. (1972),

like the Coleman Report (1966), received much public attention and strongly reinforced the notion that schools did not make much difference.

But about the same time, an extensive and critical study appeared, one that was not widely known. Averch, Carroll, Donaldson, Kiesling, and Pincus (1972) confirmed that family and student background characteristics were the only variables that consistently correlated with achievement. This conclusion was qualified, however, by four important limitations of the research reviewed: (1) outcomes other than standardized cognitive achievement were rarely used, (2) cost analyses of various factors were seldom conducted, (3) very few studies had attempted to measure directly the behavioral and attitudinal processes within the school, and (4) operational definitions of the complex processes in the school were crude at best. Averch et al. (1972) then suggested that there was a need to explain the extremes of good and bad rather than merely looking at overall averages and that future research should concentrate on the transactions within the school between staff and students.

Both economic and sociological studies have moved in this direction in the ensuing years. Several major studies and three recent reviews all point to similar findings: that selected factors in the school do result in differences in the level of achievement, even with demographic variables controlled.

Centra and Potter (1980) present a structural model of school and teacher variables which affect learning outcomes. Their review contributes to an understanding of these factors within schools but has some serious shortcomings from the organizational perspective

presented here. Centra and Potter suggest that achievement variance between schools is so small in comparison to within variance that future research should concentrate on the classroom level and on the individual teacher-student relationship. While this level of analysis can be fruitful, between schools and district level analysis can hardly be written off. Two glaring errors perhaps contribute to this questionable conclusion.

First, the Centra and Potter (1980, p. 274) model shows no predicted causal relation between within-school conditions and teaching performance, instead suggesting that all influence from within-school conditions is mediated through demographic teacher characteristics. In the absence of empirical evidence to support this exclusively indirect effect, this claim appears questionable, given the extensive work in the area of teacher expectations noted above. Second, their review of between and within school studies is deficient. They rely almost solely on quantitative production function studies; completely missing are the social-psychological studies which have measured attitudes, expectations, beliefs, values, etc. (to be reviewed below). In addition, only one (a minor one at that) study of atypical schools is noted. Thus the particular studies, which indicate that certain combinations of within-school transactions, beliefs, and structures can lead to between-school differences, are omitted.

The second recent review of input-output analyses by Glasman and Biniaminov (1981) also offers a structural causal model. The review is an important summation of this literature, but as the authors point out, these quantitative studies do not deal adequately with the dynamics of the teacher-student relationships in terms of expectations

and transactions. The model offered does provide for the influence of student attitudes on school outcomes, e.g., self-concept or locus of control, but posits only a secondary direct effect, rather than a main direct effect, on these student attitudes by instructional staff. The second objection noted to the Centra and Potter (1980) study is also applicable here. The difference in this case is that the Glasman and Biniaminov (1981) study acknowledges that these studies are not included in their review and that these social-psychological factors need to be considered.

A third review by Murnane (1981) takes a somewhat different approach. Although Murnane is an economist and looks at econometric production function studies, he concentrates on those which have attempted to isolate the factors which most explain differences in school quality. Consistent with the recommendations of Averch et al. (1972), the findings of these studies suggest that the interactions and expectations of staff and students are alterable and that these dynamic characteristics of the school do account for variance in achievement. This is also consistent with Bloom (1980) who suggests that future educational research should concentrate on alterable variables, e.g., time-on-task versus time available, teacher attitudes and behavior versus teacher demographic characteristics, etc. Among other factors, Murnane (1981) identifies the following which correlate with higher achievement: teacher intellectual ability, motivation, and overall "good" ratings by supervisors; student body composition--the higher the average SES or academic ability, the more positive the effect on individual students; inconclusive evidence on class size--although Glasman and Biniaminov (1981) present evidence for an

interaction effect in which low ability classes suffer more negative effects from higher class size; promising results that time involved in learning, if measured more precisely, is an important factor.

Murnane's (1981) findings also indicate some variables that are not related to outcomes: physical facilities and the areas of curriculum and instruction, due to problems of measurement and inconsistency across schools. But like Glasman and Biniaminov (1981), Murnane (1981) also notes that the social-psychological factors have not yet been sufficiently addressed in econometric quantitative studies.

These three reviews, representing the state of the art for input-output studies, illustrate some important conclusions about research on school effects. First, differences in the quality of schools, beyond variance in family background characteristics, can be and have been identified using large scale data bases. This conclusion, as opposed to the earlier "no school effects" result of the Coleman et al. (1966) research and the status-attainment work (e.g., Hauser, 1971), is due to more direct measurement of social-psychological factors within the school rather than the earlier emphasis on facilities and monetary input variables. Second, the factors identified to this point by input-output studies do not have the richness of detail or specification of processes when compared to organizational/case studies or social-psychological studies of learning environments. (Both of these areas will be reviewed separately below.) Third, to the extent, however, that these input-output studies are now finding factors consistent with these other two types of studies, albeit not as richly described, the degree of generalization of results is strengthened, compared to the more limited generalizability of case

studies or smaller data bases. Fourth, some further methodological issues, besides the emphasis on direct measurement of social-psychological processes, have contributed to findings in this area.

Methodological Issues

How is achievement measured? Madaus, Kellaghan, Rakow, and King (1979) compared the amount of variance explained between schools for content-specific, school taught subjects such as algebra or chemistry versus standardized measures of verbal ability. The former are more sensitive to between-school differences. Madaus et al. (1979) contend that standardized verbal measures tap family influence, intelligence, and general experience to a much greater extent than content-specific achievement and are therefore less sensitive to school-based learning. The Coleman Report (1966) used a standardized verbal measure of achievement for the analyses from which comes the conclusion that schools do not make a difference.

How is the learning or social climate of the school conceptualized? Early research, especially the status-attainment literature and studies on the effects of aspirations on college or future job (reviewed respectively by Hauser, 1971; Bain & Anderson, 1974), generally used the aggregate level of SES, and percent white if available, as a proxy for the direct measurement of the value climate in a school. At issue is the existence of a contextual effect. Hauser (1971) contends that once the individual characteristics of the students are fully controlled, no effect over and beyond the differences in the aggregate of students between schools will exist. But McDill, Rigsby, and Meyers (1969) and Brookover et al. (1979)

argue that composite SES and percent white are not an adequate measure of values and social-psychological factors; unless the value climate of a school is measured directly, the researcher must assume that a given level of student body composition has one and only one possible value structure associated with it. That assumption not only seems preposterous, but has also been shown empirically to be invalid (see Brookover et al., 1979; McDill, Meyers, & Rigsby, 1967).

But the existence of a contextual effect is a complex methodological problem. Multicollinearity and longitudinal growth must be accounted for, yet are difficult to study. Longitudinal studies are expensive and, when available, often do not have data that contain direct measurement of social-psychological processes. For example, Jencks and Brown (1975) analyzed longitudinal data from Project Talent. They concluded that high schools accounted for only 1-4 percent of the variance in achievement between schools. But their data was for ninth through twelfth grade with later follow-up data. Variations from differences in schools prior to ninth grade would not be reflected in their data. Further, no direct measure of social-psychological factors was included. Yet despite this, the authors note that a difference of 2/1 exists in the quality of the top fifty schools in verbal achievement compared to the bottom fifty. The difference was 6/1 in mathematics, which reinforces the point made by Madaus et al. (1979) about content-specific, school-based instruction as opposed to standardized verbal scores.

Luecke and McGinn (1975) demonstrate that regression techniques for cross sectional data cannot be relied upon to accurately assess longitudinal realities. They generated simulated longitudinal data

for a set of schools. Their cross sectional regression analysis both under and overestimated the simulated longitudinal data set (primarily underestimated). Brookover et al. (1982) note that the influences in a school on an individual student, class, or cohort cannot be attributed to only one teacher. Students have many teachers over the years; the faculty as a whole must take collective, longitudinal responsibility for outcomes. This view is also consistent with Finn's (1972) observation that the cumulative effects of the self-fulfilling prophecy, i.e., expectations and responses to those expectations which begin in infancy and continue through family, community, and school, are so pervasive that it is probably impossible to get an accurate appraisal of an individual's true ability apart from these continuing environmental forces. Thus a variety of factors related to longitudinal measurement suggest that typical cross sectional analyses of schools are likely to underestimate the effects of schools.

Compounding the difficulties of longitudinal effects is the problem of multicollinearity: separating the effects on outcome measures of closely intertwined social factors. The individual's family background characteristics, usually measured by SES and race, the composition of the student body in terms of SES and percent white, and the direct measurement of the value/learning climate or other social-psychological processes (if available) are highly interconnected. Separating these effects completely is beyond methodological capability. At best, we can separate effects into the uniquely explained variance for each factor and a portion of the variance that is common to all of the factors.

The Coleman Report (1966) dealt with this problem by assigning the commonly explained variance to the first variable entered into the regression equation, arguing that family background influence occurs prior to school influence. Critics of this procedure (e.g., Hanushek & Kain, 1972) say that this results in a gross overestimate of the effects of the first entered variable. Mayeske et al. (1972) used a technique of variance partitioning to separate effects. In general, they found that the commonly explained variance was greater than that which was uniquely explained. Alwin (1976) compared two procedures--contextual analysis, where the school effect is the net effect once variation due to individual variation and school composition are accounted for, versus analysis of covariance (ANCOVA) procedures where schools are used as treatment categories and the individual level variables are defined as co-variates. He concluded that within and between group variance is confounded in both methods, with no significant differences in the two models.

Alexander, D'Amico, Fennessey, and McDill (1978) suggest that three distinct approaches have been used to try to measure the composition effects on school outcomes--direct measurement of the values/expectations or normative climate, the network of peer interactions and interpersonal group influences which are directly related to the composite SES (and percent white, if available) of the student body, and the structural characteristics of the school as represented by the degree of tracking and percent of students in the various tracks. The authors conclude that the three methods, although conceptually distinct, are so highly interconnected that methodological separation of the variance due to the three sets of variables is not possible

with current statistical methods. On the other hand, Alexander et al. (1978) note that the three measures, taken together, do account for between-school effects and, when held constant, appear to reduce the variance due to the family background of individual students to insignificance.

Another methodological issue is the question of the proper unit of analysis. The Coleman Report (1966) used the individual student but did not have data linking students to specific teachers. Hanushek (1971) used the individual student but as linked to a certain teacher. This study became a prototype for econometric production function research, to the extent that Murnane's (1981) review of factors which affect school quality relies predominantly on this type of study. Three influential works in this mode are Murnane's (1975) research on inner-city school effectiveness, the Summers and Wolfe (1977) Philadelphia Federal Reserve Bank Study, and Murnane and Phillips' (1981) study of effective inner-city teachers. On the other hand, some researchers suggest that the classroom, school, or district is the proper unit of study. In truth, there are relationships at each level that can improve our understanding of schools.

Policy-related decisions such as the distribution of resources between schools or the ratio of administrators to teachers have been shown to affect achievement outcomes at the district level (Bidwell & Kasorda, 1975). Furthermore, district-level contingencies or environmental forces can influence the individual school's or teacher's impact on student outcomes; it is for precisely this reason that the current study has adopted an organizational/environmental framework for analyzing the effects of the school learning climate improvement

project. The issue is, however, methodologically complex. A recent study by Hopkins (1982) presents further empirical evidence on the issue of the individual versus the group as the proper unit of analysis.

Particularly related to the proper unit of analysis is the problem of identifying the resources that each child in a district or school actually receives rather than simply relying on the average resources available. School-to-school as well as within-school differences in resources can be quite common due, for example, to tracking (Rosenbaum, 1976, 1980), time-on-task (Hyman & Cohen, 1979), level of discipline (Jones, 1979), as well as quality and quantity of instruction related to overall level of expectations and emphasis on academic achievement (Coleman, 1981a, 1981b; Coleman, Hoffer, & Kilgore, 1981).

One last methodological issue should be mentioned. Although various researchers (e.g., Centra & Potter, 1980; Jencks et al., 1972) have suggested turning away from research on between-school differences because the majority of the total variance in outcomes is within schools (even though this review indicates that their conclusion is premature), little or no research has been done on the question of school effectiveness as related to the amount of variance in achievement rather than mean level of achievement. A whole range of research questions need to be addressed. Are schools with a restricted (or wide) range of within variance more or less effective as measured by mean achievement? What happens to schools (if they exist) that have restricted range of achievement because of ceiling effects? or floor effects? These questions are only representative

of an area of research that should be pursued vigorously.

Social-Psychological Learning Environments

Closely related to the input-output production function studies of large scale data bases are those which have directly measured the social-psychological processes, attitudes, and expectations in the school. Conceptually, the distinction is sometimes more a matter of emphasis rather than of statistical procedures since some of the latter studies have used regression techniques similar to the input-output analyses. But despite the methodological similarities and the trend toward more direct measurement of these transactions and attitudes within the school by the more quantitatively oriented studies just reviewed, the contribution of the studies on learning environments is a separate and important development of the overall school effects literature.

In effect, the two types of studies are merging; the formerly quantitative data analyses have increasingly gathered data on the social-psychological factors that the learning environment studies have shown to make a difference in school outcomes. The most obvious example of this statement can be seen by comparing two data bases that much of the status-attainment work used (basically a conclusion of no school effects) with a recent, large scale, longitudinal data set: neither the Wisconsin data by Sewell and associates (e.g., Sewell & Shaw, 1967) nor the Nashville data (Hauser, 1971) contained extensive direct measurement of the learning climate in the school; conversely the current study by the National Center for Educational Statistics (NCES), which was used for the highly controversial comparison of

public and private high schools (see the methodological and policy debates in Educational Researcher, 1981; Harvard Educational Review, 1981; Phi Delta Kappan, 1981) contains rich descriptive measurement of interactions, goals, expectations, and other social-psychological variables. Significantly, despite the furor over the policy implications favoring private versus public high schools, the conclusion that what happens within a school affects student achievement with respect to between-school comparisons is no longer at issue. A caveat is necessary here, however; policy makers and the public too often lose sight of the evidence for school effects in the highly politicized arena of educational budgets in a time of shrinking governmental resources.

Given this methodological qualification, what are the major findings of the learning environment research? Four major conclusions can be gleaned from this literature: (1) Schools (and classrooms) do make a difference, (2) The primary factors which account for differences in school outcomes are social-psychological in nature, (3) The different studies have used different operational definitions, methodologies, and emphases, yet have remarkably similar conclusions, (4) The characteristics found to make a difference are those factors which comprise the school learning climate improvement project, which is the basis of this study. (Those factors are described in Chapter I and will be related to the appropriate studies below.)

There is no natural way of classifying studies of learning environments. However, an arbitrary grouping by age of students (elementary versus secondary), unit of analysis (classroom versus school), and psychological emphasis (affective versus cognitive) provides a

useful, if not mutually exclusive or theoretical, basis for discussion. Several of the more important studies are reviewed here.

Perhaps the earliest attempt to measure social-psychological climates directly was the classic study by Lewin, Lippitt, and White (1939) on the effects of different types of leadership style. Working with after-school clubs, the researchers experimentally varied "democratic," "authoritarian," and "laissez faire" leadership behavior to produce the respective social climates for the meetings. This study has been widely cited to show the superiority of the democratic social climate. In affective responses by the boys involved, this type of leadership was preferred and produced more positive independent behavior when the leader was out of the room. But this study is apparently much cited and little read. Contrary to the common conclusion that this series of studies shows superiority for the "democratic" climate, the results indicate otherwise. Data reported on outcomes of the boys' activities are sparse; however, the evidence indicates that the authoritarian leadership was more effective based on actual production of the masks that were the objectives of the craft activities (see Lippitt & White, 1952, for a review).

Consistent with a careful reading of this work, the current research on "direct instruction" is now demonstrating that teacher directed instruction with emphasis on achievement, productive use of time, and control of subject matter and pupil activities is most effective for high achievement, particularly in the core studies of reading, math, and required academic subjects (Brophy, 1979; Good, 1979). As an aside, it should be mentioned that direct instruction does not have to connote harsh, drill-sergeant behavior. Perhaps

because the term "direct" is less affectively loaded than "authoritarian," and because the empirical evidence is much greater, direct instruction is now becoming recognized and accepted as a means of producing higher achievement whereas the authoritarian climate has had a negative image.

Direct measurement of the learning environment in the school itself was not to occur for several years. Perhaps the first attempt at this was the study of elementary classrooms by Fox, Lippitt, and Schmuck (1964). They gathered data from sociometric techniques and questionnaires on teacher and student perceptions of power, social status, expectations, support from parents, and related factors. Fox et al. (1964) found that the social-psychological climate of the classroom varied widely and was strongly associated with students' self-concept, satisfaction with school, and utilization of intelligence (degree to which students achieved relative to their aptitude). Teachers were an important factor in these varying classroom climates. As is the case for most of the work in this area, reference groups, sources of expectations and evaluations, and students' perceptions of these influences comprised the theoretical model which guided the study.

Another milestone study by McDill and associates utilized faculty and student perceptions of the academic climate in 20 high schools. Six different measures--academic emulation, intellectual-aestheticism, cohesive and egalitarian aestheticism, scientism, humanistic excellence, and academically oriented status system--were statistically significant after individual level SES, ability, and values toward school were obtained. These school level measures of academic climate

varied widely between schools; furthermore, when the climate was held constant, school differences in SES were no longer statistically significant for mathematics achievement (see McDill et al., 1967; McDill & Rigsby, 1973; McDill et al., 1969).

In addition to these early studies in the 1960s, four other influential works can be identified. Two of these studied the effects of classroom climates on learning outcomes. Walberg and his associates developed the Learning Environment Inventory (LEI). The LEI contained 15 sub-scales based on students' perceptions of the classroom learning environment in high school. Originally used for physics (Anderson, 1970), the LEI has been widely adapted. O'Reilly's (1975) study of mathematics achievement was similar to the earlier work in physics, indicating that the LEI scales accounted for significant achievement differences even after individual level SES and ability were controlled.

Another set of classroom climate scales was developed by Moos and Trickett (1974). Titled the Classroom Environment Scale (CES), the nine subscales measure student perceptions of environmental press in four areas--dimensions of relationship, personal development, system maintenance, and system change. This work, based on the needs-press theory of Murray (1938), is one of nine Social Climate Scales that were developed to apply to a variety of work and group environments (see Insel & Moos, 1974; Moos, 1974). The CES has been correlated with both affective and cognitive outcomes. More complete overviews can be found in Walberg (1976, 1979), Moos (1979), and a recent review monograph and continuing research by Fraser (1981, 1982).

A third influence was the Michigan study of 91 randomly selected elementary schools (Brookover et al., 1978c, 1979) which led to the intervention project of which this current study is a part (see Chapter I). This research utilized 14 social-psychological climate variables--5 teacher, 5 student, and 4 principal--measuring teacher and principal expectations and evaluations of student ability, academic push, and student perceptions of these factors. This related cluster of scales probed both current and future expectations. But of all the factors, Student Sense of Academic Futility, a school-specific adaptation of the Coleman et al. (1966) student sense of control, explained about half of the variance in achievement in reading and math. Taken together, these climate variables explained slightly more of the achievement than the family background factors of SES and percent white. When these composition variables and structural measures of the school were added to the climate scales, 86 percent of the achievement variance between schools was explained in the statewide sample.

The Brookover et al. (1979) study, drawing on the research on self-concept (Brookover et al., 1963, 1965, 1967), the Coleman Report (1966), high school academic climates (McDill et al., 1967), and a previous exploratory study of atypical schools (Brookover & Schneider, 1975) was able to demonstrate that social-psychological factors affecting learning vary widely from school to school and that much of this variation is independent of SES and race. Perhaps even more important, the study demonstrates that the adult staff has the major influence on the local normative values, beliefs, attitudes, and expectations in a given school.

An analysis of the factors in this study that are associated with student achievement reveals a double link to teacher expectations and evaluations. First, teacher expectations are directly associated with achievement, i.e., the self-fulfilling prophecy. Second, as noted above, the students' sense of futility was the most powerful single variable associated with achievement. But when student futility was used as a dependent variable (conceptualizing it as an intervening, personalogical internalization of the overall school social climate), the variable that was most highly associated with student futility was teacher expectations. In effect, teacher expectations and evaluations formed both a direct and an indirect (through student futility) link to achievement. The study also indicated that the structure of the school was a significant factor. Specifically, the vertical differentiation of the instructional program in terms of grouping and tracking was negatively correlated with academic performance; the more differentiated the school, the lower was the overall achievement.

The research program headed by Brookover at Michigan State University has generated several additional studies. A complete listing is not possible here, but several of the more directly related can be mentioned. Various studies have investigated patterns of expectations (Gigliotti, 1972), variables associated with high and low achieving schools matched for demographic background (Schneider, 1973), and sex and race differences in perceptions of students (Hathaway, 1977). Other research from this perspective will be noted below in other sections.

A fourth major study by Rutter, Maughan, Mortimore, Ouston, and Smith (1979) of 12 inner-city London high schools utilizes a somewhat

different methodology. This is a longitudinal four-year analysis of four sets of variables: (1) intake--social background, behavior, and cognitive abilities; (2) process measures--behavioral and organizational observations of the learning environments within the schools; (3) outcomes of schooling; (4) ecological or societal factors. In general the study demonstrates that the high schools produce differing results, after the individual characteristics of the incoming students are controlled. Rutter et al. (1979) suggest that faculty attitudes, behavior, and academic focus produce an overall "ethos" that is unique to each school. This composite ethos is associated with student outcomes; furthermore, the complexity of many factors of attitudes, behavior, teaching process, etc., none of which is highly associated with outcomes by itself, combines to produce an overall ethos that is strongly associated with outcomes. This ethos appears to be very similar to the academic climate of McDill et al. (1967) and the school social climate of Brookover et al. (1979). A more complete analysis of the ten conclusions of the Rutter et al. (1979) study shows them likewise to be highly consistent with the findings of the McDill et al. (1967) and Brookover et al. (1979) studies.

The six works just cited by no means exhaust the literature on direct measurement of the learning environment. As is true of any attempt at classification, many of the actual studies do not fit neatly into any one category or "ideal type." Several studies, similar to or highly influenced by one or more of the above, are noted below. The Alexander et al. (1978) study (cited in the section on input-output analyses) is an example. That study can be seen as a

bridge of studies from three different perspectives--status attainment (see Garrison, 1982; Hoelter, 1982; Scritchfield & Picou, 1982, for recent work in this field), input-output analyses, and direct measurement of the learning environment.

Another variation of the direct measurement of the learning environment was the study of the Hartford, Connecticut, busing program. Mahan and Mahan (1971) were able to randomly assign inner city students to other urban and suburban schools. Using mean achievement scores and sociometric data for measures of the classroom social climate, the results clearly showed that the changes in mental ability scores for the individual students were dependent on the mean achievement level of the classroom they were placed in. Mahan and Mahan (1971) suggest that earlier studies and conclusions that schools cannot overcome the effects of low income or minority status were seriously flawed in two respects. First, the data was correlational and inadequately measured the school's actual social-psychological climate with respect to the reference group characteristics of peers. This study provides experimental controls with longitudinal data; with those conditions controlled, changes in the school environment produced changes in mental ability. Second, earlier studies were based upon a conception of remedying individual deficiencies in the child rather than attempting to change the social environment. This last point is precisely what critics of the "culture of poverty" thesis have claimed: rather than "blaming the victim" and then concentrating on the "defects" of the individual, we should be concerned with the structural and social conditions that produce those "deficits" in the first place. The studies just cited provide strong evidence that

school environments are variable and that this variance is associated with academic performance and even measured mental ability in schools and classrooms.

This factor of variability has been too little studied. Perhaps because the predominant mode of studying school climates has been to use a composite measure of SES and percent race as a proxy for the social climate, there has been a tendency on the part of researchers to assume that a given social or learning environment is much like any other of similar composition. Glasheen, Hadley, and Schneider (1977) were able to use longitudinal data collected on ninth graders in four high schools in an eastern city to test this. Their study, similar in many respects to the McDill et al. (1967) and Brookover et al. (1979) studies, shows that the normative learning environment does affect achievement after family background characteristics have been controlled. But this study also shows that the interactions between family background, ability, attendance, school climate measures, measures of students' self-concept and fate control, and achievement differ from one school to the next. In other words, the various factors such as attendance or self-concept did not explain equal amounts in the four schools. Thus, there is evidence that the direct study of the social-psychological learning environment must not only be concerned with identifying relevant factors and their measurement at the composite level, but also with the particular way in which these factors interact and their differential effects in a given school, even if the aggregate levels are similar. This implies that learning environments are far more complex than previously proposed in various models of school attainment or achievement.

A further example of the complexity of school environments is the study of 19 Israeli junior highs by Chen and Fresko (1978). They conceptualize school climate by the type of mobility or selection system (tracking) in the building, hypothesizing that teacher and student attitudes, behavior, and evaluations of ability will be primarily determined by this structural feature. The authors controlled for SES, dichotomized race/ethnicity (white--European, American or non-white--Oriental, Asian, African), and measured internal-external locus of control. Findings indicated that overall school achievement was associated with the three levels of school climate (non-tracking was scored high climate while rigid tracking was conceptualized as low climate). As predicted, low income students with external locus of control fared worse in the low climate schools (rigid tracking). But as in the Glasheen et al. (1977) study, interactions among the factors within the social system, including some U-shaped curvilinear relations, were found. Again, the findings suggest that factors in the social system are not independent but combine in different schools to produce a learning environment that is complex and can be conceptualized and measured in a variety of ways. But direct measurement does reveal school effects that are not explained by family background.

Two of the studies noted above present cross-cultural confirmation of school effects (Chen & Fresko, 1978; Rutter et al., 1979). Two other cross-cultural studies produce similar results. Madaus et al. (1979) sample 47 of 582 high schools in Ireland. They suggest that the Coleman Report (1966) and other similar studies which produced essentially a "no school effects" finding independent of family background can be explained by three methodological

distinctions: (1) building level versus classroom level of analysis (significant differences could be masked by averages); (2) using static dimensions of the school such as size, facilities, etc., instead of dynamic or direct measures of attitudes, beliefs, interactions, etc.; (3) use of a general measure of intellectual/verbal ability as the achievement variable rather than a content-specific test of school-based curriculum. (For further discussion of these factors, see the section above on Methodological Issues.) Madaus et al. (1979) were able to collect data to test all of these hypotheses. All were confirmed at highly significant levels. Mean levels of achievement between classrooms accounted for 40 percent of the total variance, a figure considerably higher than the 15-30 percent between school variance found in the Coleman Report (1966). In this study, family background was not an important factor, just barely significant and much less important than the various measures of classroom climate and tracking. However, this finding could be due to Ireland's high rate of drop-outs, which produces a natural homogenization by social class. A study by Brimer, Madaus, Chapman, Kellaghan, and Wood (1978, cited in Madaus et al., 1979) in England produced similar results, further strengthening the conclusion that school effects are significant when the social-psychological learning environment is measured directly.

Despite the consistency of findings in the studies just cited, discussion of the social-psychological literature on school effects cannot be considered complete without noting two other issues. The first is the extent to which internal-external locus of control (Rotter, 1966) or some variant thereof, e.g., sense of control

(Coleman et al., 1966) or student sense of academic futility (Brookover et al., 1979), is associated with achievement, self-concept of ability, the learning environment, and demographic background variables. This issue is deserving of further attention for three reasons. First, the consistency with which this variable produces significant associations with achievement, across different studies and varying conceptualizations of the learning environment or related research, is remarkable. Second, the strength of this association is consistently high and in some studies is the most potent single variable (Brookover et al., 1979) or the second strongest school-related variable (Coleman et al., 1966). Third, the concept, "motivation," despite methodological and theoretical problems (see e.g., Bolles, 1978; Uguroglu & Walberg, 1979; Weiner, 1972, 1979) seems somehow linked to the various measures of locus of control. An analysis of this literature is impossible here. The reader is referred to two recent reviews which relate this phenomena to the wider social-psychological arena (Miller & Crano, 1980; Stipek & Weisz, 1981).

The second related issue is how and to what extent the affective dimension of the school environment relates to student outcomes, particularly achievement. Many investigators in the realm of school climate appear to be more interested in non-cognitive outcomes (e.g., Beane, Note 4; Fox, Boies, Brainard, Fletcher, Huge, Martin, Maynard, Monasmith, Olivero, Schmuck, Shaheen, & Stegeman, 1973; Willower, Eidell, & Hoy, 1967) or assume that improvement in the affective feelings in a school will automatically result in increased achievement. See Fullan et al. (1978) for an analysis and review of this perspective in the organizational development (OD) literature.

Whatever the reason, empirical research in this area is limited. And the few studies which do exist suggest that the relationship of the affective realm to achievement is not straightforward.

The Organizational Climate Description Questionnaire (OCDQ) developed by Halpin and Croft (1963) is a case in point. As pointed out above in the section on Methodology, despite the large number of studies using this measure of adult job satisfaction and openness of communication, very few looked at how the OCDQ related to achievement. Conran and Beauchamp (1976) found a negative correlation with achievement; they reacted with incredulity, suggesting more research. Finlayson (1973) used a modified version of the OCDQ and found that wide variability across schools existed, sufficient to account for differences in achievement levels, but his research did not actually correlate his measures with achievement. Rasmussen's (1974) study of California elementary schools found no relation between achievement and his measure of adult interpersonal relations. A negative relation between achievement and adult staff relations was also found by Brookover and Lezotte (1977). Schools with improving achievement had staffs with relatively high amounts of conflict and dissatisfaction. Declining schools had happy, satisfied faculty.

Several possible explanations for these results can be given. One possibility is that the affective realm is not closely associated with cognitive outcomes. But intuitively this explanation leaves many educators uncomfortable; furthermore, two studies just cited produced negative correlations, and the human relations school of organizational thought, dating back to the Hawthorne studies (Roethlisberger & Dickson, 1947), is based on the theory that higher morale results

in greater productivity. Further analysis of the human relations school of thought is given in the section on Organizational Theory, below.

A second possibility is that a curvilinear relation exists. Both low and high adult oriented "climates" might be associated with lower achievement and an optimal, medium level with higher achievement. In this explanation, too low a morale could be debilitating. Too high could result in goal displacement in which the means to higher achievement (better morale) becomes an end in itself, displacing the goal of student achievement. Another possibility is that measures of adult morale (the affective dimension) and the learning environment (the cognitive dimension) are simply two separate aspects of the total school social environment. Whatever the explanation, more research on this topic is clearly needed.

The research just reviewed provides increased insight into the factors affecting school outcomes. The studies have been grouped arbitrarily based on similarities of methodology, variables utilized, and findings. The findings support and extend the results from the input-output analyses reviewed above. The studies to be reviewed next, organizational and case histories of districts or individual schools, provide further corroboration of the conclusion that schools can and do make a difference, but from yet another methodological approach.

Organizational and Case Histories

Studies of this type have both a distinct strength and weakness. Their strength lies in the richness of detail and the focus on process that can be attained from in-depth analysis of a small sample. The

small sample size is also the weakness. Generalization from case studies is limited at best. But in combination with other types of research such as survey studies using large data bases, the organizational analysis is both useful and methodologically sound. This type of study is ideal for investigating exceptions or "outliers" to find why they depart from the typical pattern (and to find if these exceptions have similarities which can account for their exceptionality), for generating hypotheses to be tested in later studies using large and more representative samples, for developing new operational variables that are associated with the exceptional nature of the cases selected, for providing counterexamples to commonly accepted beliefs, and for confirming in greater detail the findings of survey research. The studies to be reviewed here have performed one or more of these functions.

Again arbitrarily, these studies are grouped in two categories--natural experiments on the effects of not going to school (or on drastically changed conditions in the environment) and studies of atypically successful schools.

The Effects of No Schooling

The extreme situation is the rare occurrence of a child raised in virtual isolation, the so-called feral child. Davis' (1940) report of such a case, and his review of other recorded instances, leads him to conclude that the extremely low level of social, mental, and emotional functioning are due to the deprivation of early interaction with a primary group, rather than genetic deficiency. These cases show clearly that deprivation of normal socialization can produce

severely stunted functional performance.

Related to the case above is the effect of not going to school, or having the school and community change drastically over a relatively short period of time. Such situations present an alternative means of addressing the question, Do schools make a difference? In this sense, the comparison is going to school versus not going to school. This contrasts with the sense in which the question is usually posed, going back to the Coleman Report (1966): Does going to school X versus school Y produce differential outcomes. The usual outcome investigated is student achievement, although other outcomes of schooling have been and frequently are used.

Perhaps the most notable example of no schooling occurred from 1959-1963. Prince Edward County in Virginia closed the public schools rather than comply with the Brown (1954) desegregation mandates. Private schools were set up for whites; blacks were without schools with the exception of those few who were able to stay with relatives or friends outside the county part or all of the four years. The effects on blacks in achievement and I.Q. compared to the blacks in an adjacent county were devastating. Achievement levels were down from 2.5-4.0 grade levels in the group who received no formal education and I.Q.'s were depressed from 15-30 points. This study by Green, Hofman, Morse, Hayes, and Morgan (1964) indicates that deprivation from schooling depresses not only school-specific achievement but also the supposedly more stable aptitude or intelligence measures as well.

Wheeler's (1942) comparative study of East Tennessee mountain families in 1930 and 1940 has similar implications. The same

researchers, testing the same families, found an average increase of 10 points in I.Q. Wheeler hypothesizes that the opening of the region with new roads and better communication during the New Deal-Depression projects changed the overall environment. This change was mediated through the schools by reducing the number of children who started school after age six and the number of children who were overage for grade. In this instance earlier and greater exposure to school was the factor which was associated with the higher I.Q./aptitude results. Wheeler (1942) also found related studies with similar results.

That not being exposed to school, or being exposed to drastically changed school and environmental experiences, produces extensive differences in both achievement and I.Q. has been dramatically documented. Wiley and Harnischfeger (1974) link this conception of quantity of schooling to the more usual manner of posing the school effects issue: What is the difference between school X and school Y. Studies which reached the dismal conclusion that schools do not make a difference (e.g., Coleman et al., 1966; Jencks et al., 1972) had conceptualized attendance as a family background variable rather than a school context variable. But a quantity of schooling variable can be utilized in the "no schooling" studies just cited as well as in the various kinds of school effects research. By focusing on Carroll's (1963) model of school learning, the two major variables with respect to time can be summarized as follows (Wiley & Harnischfeger, 1974):

$$\text{degree of learning} = f \frac{\text{time actually spent}}{\text{time needed}}$$

The time-actually-spent variable bridges the gap between gross measures of amount of schooling and an individual student's actual academic

engaged time (Anderson, 1981; Rosenshine, 1979; Rosenshine & Berliner, 1978). Thus differences in length of the school year, e.g., Hicks' (1970) report that achievement scores in New York City were depressed by two months due to the extended teachers' strike of 1968-69, the length of the day, allocation of time to various academic or non-academic subjects, disruptions because of discipline problems, instructional efficiency, and attendance all become factors which contribute to the actual time spent on learning.

Using this connection (time-actually-spent), it is possible to classify studies of "no schooling" as a subclass of the school effects literature. The time variable is measured at a macro level instead of individual/micro level as in most studies of time-on-task.

Atypically Successful Schools

Research in this area has been principally of two kinds. First, case studies of particular schools describe the interactions within the social system which are then associated with the school's achievement level. Generally, the school so studied has first been identified as unusually high achieving, given the student composition in terms of SES and percent white. Occasionally, however, case studies present stark descriptions of racist (Rosenfeld, 1976) or social class (Rist, 1970) discrimination. Both of these ethnographies provide rich detail on the ways in which teachers and schools communicate negative self-fulfilling prophecies through put-downs, labeling, grouping that is based on social class characteristics, and differential access to quality and quantity of instruction.

The prototype of atypical case studies is Weber's (1971) Inner City Children Can Be Taught to Read: Four Successful Schools. The existence of exemplary low-income and/or minority schools is now widely known and accepted in the research community and is spreading throughout the ranks of practitioners, although there remains a significant segment of educators and the public who believe that poor and minority children cannot learn well. But Weber's (1971) research was conducted at a time when it was almost universally believed that schools could do nothing to overcome the effects of disadvantaged status. In the strictest sense of the term, Weber presented a counter-example study. The four schools selected were clearly inner city, very low income, high percent black, and yet had third grade mean reading scores at or above national norms (50th percentile). Furthermore, Weber tested the children himself on a test he developed and normed to ensure that children had not been "coached" or "taught the test."

The Weber (1971) study found eight characteristics common to the four schools: (1) strong instructional leadership, (2) high expectations, (3) positive atmosphere, (4) strong emphasis on reading, (5) additional reading personnel, (6) use of phonics, (7) individualization, and (8) careful evaluation of pupil progress. In addition, Weber found six factors which were not common to all four schools, thus indicating that these factors may be questioned as to their necessity for high achievement: (1) small class size, (2) achievement grouping, (3) superior quality of teaching, (4) ethnic background of teacher similar to that of the students, (5) preschool education, and (6) optimal physical facilities.

While not all of the characteristics which Weber identified have stood the test of further studies, much of his research is consistent with later studies. Even more important is the tradition of research in this vein that has continued at an ever increasing rate. Not all of the studies can be reviewed in detail here, but together they present a consistent profile of characteristics that are common to atypically successful schools. A more comprehensive review is given in Purkey and Smith (in press).

For example, Sowell (1974) analyzed Dunbar High School in Washington, D.C., a black institution with a superior reputation. Sowell's (1976) further study of distinguished black high schools found that they shared with Dunbar rigorous standards of excellence, high expectations, academic focus, tight discipline, and exceptional instructional leaders. Fuerst's (1981) description of black schools doing better than expected in Chicago had similar results.

Kozberg and Winegar (1981) describe their reform efforts at South Boston High School in terms of strategies highly consistent with Sowell's (1974, 1976) studies. Specifically they recommend: (1) increasing time-on-task, (2) emphasizing the social context of learning, (3) eliminating tracking, (4) teaching appropriate school behavior and values, (5) high expectations, (6) common objectives and curriculum for ninth graders with emphasis on basic literacy, self-discipline, and the relationship between work and life, and (7) a learning environment which is highly structured and shaped by adults, but reflecting input and dialogue by students.

Hoover's (1978) study of black schools at grade level is notable for a different approach. Based on extensive interviews and

observations, Hoover produces a comprehensive list of reasons--blaming the victim and blaming the system--which school personnel typically give to explain why poor and minority children can't learn. Hoover (1978) then suggests that successful staffs reject this scapegoating explanation and instead commit themselves to getting the job done. Common characteristics of successful schools include direct and structured instruction in standard English, group-oriented and co-operative approach to learning (e.g., Johnson & Johnson, 1975), positive and firm discipline, high expectations and emphasis on student motivation, strong program of staff training, strong administrative leadership, and a focus on academic excellence.

Highly consistent with these characteristics are the 10 factors associated with the differences between six improving schools and two declining schools in the Changing Schools study (Brookover & Lezotte, 1977). These eight schools, with achievement changing significantly over a three-year period, were identified from the Michigan Educational Assessment Program (MEAP) criterion-referenced test given to all 4th and 7th grade students in the state in math and reading. Briefly, differences between the improvers and decliners were as follows: (1) the extent of acceptance and focus on basic skill achievement, (2) the level of teachers' evaluation of students' abilities to learn and master instructional objectives, (3) the extent of expectations for students to do well in and complete high school and college, (4) extent to which teachers and principal accept and assume responsibility for students' achievement, (5) amount of instructional time devoted to basic skills (associated with teachers' efficacy, the extent to which staff believe they can influence learning),

(6) principal as instructional leader and strong disciplinarian in improvers versus more permissive, collegial-oriented, public relations approach with less emphasis on instructional objectives in decliners, (7) extent of acceptance of an accountability model for student achievement and of belief in the validity of MEAP as an indicator of success, (8) improvers with lower teacher morale and satisfaction with the current situation versus decliners with greater complacency and satisfaction with level of achievement and working conditions, (9) parent involvement not clear cut, but less total involvement and greater parent-initiated contact in improving schools, (10) compensatory education program in which decliners have greater number of regular staff involved in identifying target students, with associated tendency toward diffusion of responsibility for students' achievement and greater tendency to "write-off" their responsibility for students' achievements. Taken together, the Brookover and Lezotte (1977) findings present strong evidence that teachers' beliefs and behaviors are strongly associated with student achievement over time.

One other study should be mentioned here. The Phi Delta Kappan (1980) study of exceptional schools contains eight case histories as well as a review of the literature and the results of interviews with several leading researchers in the field of effective schools. Findings of significance include the importance of goal focus on academic excellence and basic skills achievement, effective discipline, and instructional leadership, among others. But this study also highlights, by way of omission, the necessity of defining the criteria for effectiveness. Several of the case histories are self-selected "effective" schools, illustrating that there are degrees of

effectiveness and that some of these schools apparently define effectiveness in criteria other than achievement.

Certainly achievement is not the only criteria for evaluating schools. But as Brookover, Ferderbar, Gay, Middleton, Posner, and Roebuck (1980) demonstrate, mastering the basic literacy skills of mathematics and language arts is a necessary first goal for any other academic objectives which may be deemed important. Furthermore, social-emotional criteria such as self-concept, good citizenship, preparation for work, or fate control can only be facilitated by the mastery of basic literacy skills by all students. Schools which claim effectiveness without evidence of mastery of basic achievement skills by the vast majority of all students should be viewed with caution. Simply put, mastery of basic literacy skills is a necessary threshold for success in all areas in modern society.

In addition to the case histories just reviewed, there is a second type of study that is common in the area of exemplary schools research. This second type is often designated by the term, "outlier studies." In actuality, the methods of collecting data are similar to the research noted above, utilizing methods such as interviewing, observations, document analysis, surveys, etc. These studies are grouped separately here because of their approach to identifying the sites to be investigated. Most schools lie fairly close to the SES-percent white/achievement regression line. However, a few schools at both ends of the spectrum, i.e., high achieving, low income/minority schools and low achieving, high income/white schools, are by definition exceptions to the typical regression line that has been documented so extensively in the Coleman Report (1966) and most

other research on achievement and family background demographic factors. The computer program identifies those schools which are the most distant from the regression line, and these become the sample for the study.

Much of the impetus for this type of research can be traced to evaluation research on compensatory education programs from the Elementary and Secondary Education Act of 1965. A brief review by Austin (1979) documents the generally dismal state of these programs, such as Title I, in the late 1960s. Most of the major studies of compensatory education concluded that the programs were not successful. So common was this finding that Jensen (1969, p. 2) begins his famous Harvard Educational Review article on the genetic deficit of blacks and the heritability of I.Q. with the statement, "Compensatory education has been tried and it apparently has failed." This same viewpoint was completely consistent with the results of the Coleman Report (1966) and other social science research on schools.

Not all of the compensatory education research, however, was this negative. Hawkrige, Chalupsky, and Roberts (1968) discovered that not all compensatory education in California was equally effective. This study described exemplary programs and their characteristics. At the same time, this study and another by Hawkrige, Campeau, and Trickett (1969) were to set a trend in the identification of exemplary schools. Wargo et al. (1971) and Kiesling (1971) continued this line of research.

The idea that some programs were better than others was extended to schools by Klitgaard and Hall (1973). Their statistical search for effective schools was based on an entirely different policy and

social science perspective than the large scale input-output analyses such as the Coleman Report (1966). Granting that most schools were close reflections of their demographic makeup, Klitgaard and Hall (1973) asked if there might not be exceptions or outliers which did produce success for disadvantaged schools. They suggested that research and policy should be concentrated not on the many schools which apparently had no impact beyond family background factors, but on those few schools which demonstrated that factors in the school could make a difference.

The number of studies using some variant of the statistical approach of Klitgaard and Hall (1973) has increased rapidly. Edmonds' (1979) review cites work by Edmonds and Frederikson (1978), Frederikson (1975), and Lezotte, Edmonds, and Ratner (1974) which identifies high achieving disadvantaged schools that are indistinguishable from similar schools, based on family background social indicators, with one exception: the comparison schools are low achieving, as is typically expected. The data utilized for these studies--Detroit Model Cities and reanalysis of a portion of the Coleman Report (1966)--do not allow in-depth study of the school factors that could explain this divergence. But this technique does illustrate that even large scale data bases can be used to demonstrate that some schools are instructionally effective for poor and/or minority children. A study by Lezotte and Passalacqua (1978) uses a similar approach. This analysis utilizes previous achievement at the individual level as a control for SES. After thus controlling for SES, Lezotte and Passalacqua (1978) find that the school attended explains another 16% of the variance. They conclude that this is a true "school effect" and note that this

result is comparable to other studies with respect to the size of a school effect.

This same approach to studying outliers has also become a common means for state departments of education and large city systems to identify successful schools. Edmonds (1979) reviews the State of New York (1974) pairing of two comparable inner city New York schools: one effective and one ineffective in teaching reading. Madden, Lawson, and Sweet (1976, cited in Edmonds, 1979) utilized 21 pairs of elementary schools matched for family background but differing substantially in achievement. Other states (or cities) conducting this type of analysis include Rhode Island (Bassis, Brittingham, Ewing, Horwitz, Hunter, Long, Maguire, Morton, & Pezzullo, 1976), Maryland (Maryland State Department of Education, 1978), Michigan (Brookover & Lezotte, 1977; Brookover & Schneider, 1975), Philadelphia (Cooley, 1978; Kean, 1979), and Delaware (Venezky & Winfield, 1980).

Space does not allow separate analysis of each of these studies, but it is safe to say that the results of these studies are consistent with those already cited in the section above on case histories. In some of the studies (e.g., Bassis et al., 1976; Maryland State Department of Education, 1978) SES and percent white are related slightly to the outcomes. But the conclusion in these studies and the other research is that factors within the school are predominantly responsible for the differences in achievement. It is also important to note that not every factor found in these analyses occurs in each study. But the factors noted here, and summarized in Chapter I of this study, do occur with sufficient regularity to give credence to their inclusion among the characteristics of atypically successful

low-income/minority schools.

A comment on the increasing prevalence of research in this area is also in order. Five reviews of these outliers or case studies have appeared recently in addition to the present historical emphasis here. These reviews suggest that the explosion of research in this field is continuing. An issue of Educational Leadership (1982) was entirely devoted to effective schools. Furthermore, school improvement programs are becoming commonplace as legislatures, communities, and educators all become more aware of and interested in the existence of better schools for all children. Space precludes a complete listing of these programs; however, the last section of this chapter suggests the extent of this movement.

Instructional Practices

One last aspect of the broader conception of school learning climate must be noted. As indicated above, the original usage of academic climate (McDill et al., 1967) or school social climate (Brookover et al., 1979; Brookover & Erickson, 1975; Brookover & Schneider, 1975) was primarily concerned with the attitudes, expectations, and beliefs that are prevalent in a school. The case studies just reviewed also emphasized structural characteristics of the school such as tracking or reward structures. But eventually learning depends on the actual delivery of instruction by the teaching staff. Thus Brookover et al. (1982) define the school learning climate as having three interrelated components--the ideology, the structure, and the instructional practices. The current study, which is an analysis of organizational change at the district and school level, is not

primarily concerned with research on teaching, an individual level focus. But a teacher's instruction is not unrelated to the characteristics of the school in which it occurs. Individual behavior such as teaching is closely associated with the structure of the school and the ideological norms and attitudes which prevail. These interacting forces will be noted in the following brief listing of some important areas of teacher effectiveness.

One major influence on instruction is the belief which teachers hold regarding human potential to learn. Teachers who believe that the ability to learn well is distributed along a normal curve will behave differently than those who believe that virtually all children can learn effectively. The large body of empirical and theoretical work on mastery learning is particularly germane here. Bloom's (1976) theoretical perspective, the programmatic procedures for implementing mastery learning (Block & Anderson, 1975), and a review of the literature (Block & Burns, 1976) all contribute to the conclusion that mastery learning is associated with higher achievement. Some form of mastery learning, either explicit ala Bloom (1976) or implicit through a focused emphasis on mastery of instructional objectives (Brookover et al., 1979; Brookover & Lezotte, 1977) is frequently a characteristic of effective schools for the disadvantaged.

Implicit forms of mastery learning often resemble a complex of teacher behaviors which have come to be known as direct instruction (see Brophy, 1979; Good, 1979). In direct instruction, which is associated with higher achievement particularly in the basic skills area, the teacher is highly goal focused on achievement, uses large group instruction followed by appropriate practice and small group

follow-up, and maintains control of activities and time to ensure that children's energies are directed academically. Coincidentally, direct instruction is associated with a conception about the role definition of teaching that prioritizes achievement for all students.

Mastery learning is also highly associated with increased time-on-task (Hyman & Cohen, 1979). And time-on-task is another instructional variable that is strongly associated with effective teaching and higher achievement (Anderson, 1981; Rosenshine, 1979; Rosenshine & Berliner, 1978) as well as a characteristic of effective schools (e.g., Bassis et al., 1976; Brookover & Lezotte, 1977; Maryland State Department of Education, 1978).

Time-on-task is itself closely associated with the level of discipline in the school and classroom. Several researchers have explicitly noted the connection between instructional effectiveness, good classroom management, and higher time-on-task (e.g., Brophy & Putnam, 1978; Jones, 1979; Kounin, 1970). The interconnection of these factors and their joint influence on achievement is stressed by Brookover et al. (1982) in their program for school improvement.

Reward structures and teachers' reinforcement practices form another example of the connection between the structure and ideology of the school and instruction. All too often, reward incentives and the kind of praise and encouragement given to pupils varies with the type of students. Brophy's (1981) review indicates that children from minority or low-income families are often praised inappropriately for incorrect answers. Inappropriate praise is perceived by the child as an indication that the teacher feels the child is incapable of better work, or results in confused understanding of the problem for the

pupil. This type of teacher behavior is often an attempt to make children feel good about themselves and is consistent with beliefs that poor children are unable to learn well.

Another instructional strategy is the use of academic team games. In this approach learning is cooperative within the teams rather than competitive between individuals. Teams compete on academic content, and rewards are analogous to the sports model with standings and trophies utilized as reward incentives. Slavin's (1977, 1980) reviews emphasize the relation of this approach to reward structures while Slavin and DeVries (1979) review the success of this approach in raising achievement.

One final topic can be noted, although grouping practices are perhaps better viewed as a structural feature of the school rather than an instructional variable. But instruction often occurs within the context of grouping, largely associated with basal reading groups in elementary school and in curriculum tracks at the secondary level. Grouping practices are also highly associated with beliefs about children's abilities to learn. Perhaps in no other facet of the school are the ideological, structural, and instructional components so closely interconnected as in grouping.

Some of the research is inconsistent. However, the predominant finding is that grouping by homogeneous ability either has no significant effect on mean school achievement or results in lower mean school achievement compared to heterogeneous grouping. Effects within groups are more pronounced. High ability groups sometimes show no significant difference and sometimes have slightly increased achievement. Low and middle achievement groups, especially low groups, on

the other hand, have consistently lower achievement compared to heterogeneous grouping. Rosenbaum (1976, 1980) reviews the negative effects of labeling, teacher expectation, and the stratification function of the schools in the wider society. In their summary of the characteristics of effective schools, Brookover et al. (1982) conclude that both stratification of pupils and differentiation of levels of instruction are minimal in most exemplary schools.

Summing Up

This section has traced the origin and development of research on the school learning climate. Of particular concern was the manner in which various kinds of school effects research have become incorporated into the current conception of the school learning climate. Coincident with the incorporation of the school effects literature was the development of the conception of school social climate from its early emphasis on the prevailing beliefs, norms, values, and attitudes in a school to the current broader conception of school learning climate which includes structural features of the school and instructional practices as well as the normative, ideological component of the early studies.

But the movement to expand the climate concept to include other aspects of the school which could improve the explanatory power for variance in achievement cannot be understood apart from the historical period in which this trend occurred. For early research on schools in general and school climate in particular was focused respectively on such outcomes as student aspirations or adult-oriented satisfaction and communication. A further end of this review therefore was to

trace the gradual shift toward a focus on student achievement as the major school outcome. Although other factors are noted, the role of the Coleman Report (1966) as commissioned by the Civil Rights Act of 1964 is seen as pivotal in this shift. The development of the various types of school effects research, in reaction to the findings of the Coleman Report (1966), parallel the expansion of the climate concept to include structural and instructional aspects of the school.

Finally, this entire section on the school learning climate is included here because of its seminal position in the current research problem. This study is an organizational analysis of planned educational change: the implementation of a program designed to increase achievement by improving the school learning climate. The program to improve school learning climate, however, was a comprehensive strategy which included efforts to modify structural aspects of the school and instructional practices as well as the normative climate.

In essence, the school learning climate program was an effort to create effective schools similar to the naturally occurring schools which had been studied in the school effects literature. The result was the equating of the expanded concept of school learning climate with the totality of the school effects literature in order to maximize understanding of and strategies for school improvement in the intervention program. The comprehensive review above is thus an effort to tie the various characteristics of effective schools, including their origin and development, into the problem to be analyzed for this study: the school learning climate improvement project.

Organizational Theory

This section will cite selected studies in organizational analysis. Those studies particularly relevant to school learning climate or educational change are cited in the sections in this chapter directly above and below. But as noted in the theoretical framework of Chapter II, it is necessary to have an organizational model which guides the research and analysis. The framework laid out in Chapter II stresses an environmental and network analysis of organizations and a view of organizations as tools which can be used for or which function to accomplish certain purposes or goals. Who or what controls the organization is thus an important corollary question. Harris' (1968, 1979) work on sociocultural evolution and the organizational work by Domhoff (1979) and Perrow (1979) were cited as influential in the theoretical framework selected. The remainder of this section reviews a limited number of works which contribute or describe concepts of importance to this analysis. An exhaustive survey is not appropriate or intended here.

Topics on organizational analysis are many and can be grouped in a variety of ways. Because of the emphasis on change at both the organizational and individual level in the current study, three arbitrarily chosen topics will be reviewed. The intent here is not to provide a theoretically complete review of organizational concepts; rather the topics are selected because of their relation to the theoretical framework outlined in Chapter II, particularly as they contribute to an increased understanding of change. The three topics are as follows: individual behavior within a social system, the goals of an organization, and the peculiarities of educational organizations.

Individual Behavior in a Social System

Clearly a complete analysis of the factors which social science has identified as influencing individual behavior, even if delimited to within organizations, is beyond this paper. On the other hand, the conception of individual behavior taken in this thesis emphasizes organizational and social factors over a psychological, individualistic approach. For this review, attention will be limited to features of the social structure and the organizational structure.

Structural-functionalism maintained dominance in sociological theory throughout the 1950s and 1960s. Merton's (1957) seminal work is representative of this field; briefly this position holds that behavior in the vital functions of society, e.g., transportation, big business, education, religion, etc., is related to the institutionalized rules, regulations, traditions, and physical technology that define those areas. In other words, structures provide the behavioral guidelines which define and shape institutions such as child care and reproduction (the family), communication, or schooling. A major tenet of this work is that structures often perform vital but unrecognized and unintended functions in society. Merton (1957) terms these "latent" as opposed to "manifest" functions, which are intended and recognized. Structures can be macro level in scope, e.g., schooling in the wider society, or can operate at micro levels, such as grouping practices and policies within each school. In the latter instance, structures are comparable to the formal organizational rules. At both macro and micro levels, much of the "structure" which controls mass behavior performs in a latent manner. Sociological theory, coincidentally, should inform and make explicit the actual functioning of

the structures which comprise the various institutions and society.

Within the wider society or in an organization, individual behavior is highly influenced by the extant structures. These structures act to limit the choice of behavioral possibilities, define appropriate role behavior, and provide reward incentives and sanctions for individual choice and performance. The emphasis here is on the formative influence of the structure on the individual's thought, personality, and behavior, in actuality operating simultaneously at both macro and micro levels. For example, social class, a macro level force, and the micro level role definitions and formal rules within a school interact in their influence on behavior, to the extent that complete separation of their effects is beyond social science methodologies at this time.

Several studies illustrate this phenomenon strikingly. Lortie (1975) demonstrates that the occupational structures of teacher recruitment, professional socialization, and career reward patterns combine to produce an ethos among teachers that is primarily conservative, present-centered, and individualistic. Cohen (1972) reviews structural features of socialization and the pressures of organizational control which impact on teacher behavior and student learning. Parsons (1959) emphasizes the function of education in the wider society, particularly as related to the stratification and selection of students for the occupational and social class hierarchy, in order to better understand behavior in the school. Mitchell and Spady (1978) discuss the corresponding types of behavior which accompany differential stress on various societal functions, e.g., selection, human development, socialization, or certification of performance.

While the studies just noted are applicable at the macro level, documentation of similar influence at the organizational level is also available. Michels' (1915) study of behavior in socialist political parties is a classic example. Another classic is Whyte's (1957) analysis of the individual's adjustment to and domination by the social ethic of the large organization. This ethic is based primarily on cooperation, loyalty to and trust in the company, and a powerful adherence to the norms of conformity, style and process over substance, and skilled social relations. Merton's (1957) analysis describes the impact of the organizational structure on the personalities of those who work in them. Sociological work on organizational theory has provided numerous other insights; a typical summary of key structural variables such as size, technology, complexity, formalization, and centralization and their relation to behavior is provided by Hall (1977).

However, numerous studies have shown that the formal structure is not the only factor which affects individual behavior within an organization. The famous Hawthorne studies of Roethlisberger and Dickson (1947) demonstrated both the existence and power of the informal group in setting and enforcing norms and values within the workplace. The place of informal group relations in the organization is now so widely accepted that it is often referred to as the informal structure and is the basis of the human relations school of organizational thought. Likert (1967) is representative of this emphasis, which often is advocated in such a way that the concern for group feelings is actually a strategy of organizational control by management (cf. Mills, 1959; Perrow, 1979). An excellent overview of the processes of communication

and group relations can be found in Katz and Kahn (1978).

In actuality, the formal and informal structures of the organization interact with respect to individual behavior. An example of this is Presthus' (1978) analysis of three types of individual reactions to the organization: upward mobiles, highly consistent with Whyte's (1957) organization man; indifferents; and ambivalents. These three ideal types exhibit significantly different behavior and provide evidence that the informal structure can produce widely divergent norms within the same formal structure. A classic interpretation of the interactions between formal and informal structures, and among individual, group, and societal levels, is the conceptualization of the classroom as a unique social system (Getzels & Thelen, 1959).

In brief summary, then, one could say that individuals within an organization will be jointly influenced by formal structures and informal group relations. An analysis of both of these sources of influence is necessary to have a complete view of the social forces which impact individual behavior.

The Goals of the Organization

Analysis of the purpose and goals of an organization requires several additional questions which are consistent with the theoretical perspective described in Chapter II. The following analysis relies heavily on the work of Perrow (1979), Etzioni (1964), Hall (1977), Domhoff (1979), and Weiss (1972). Again, a thorough analysis of the issues involved is not possible, but some key concepts for the current study will be raised.

In the first place, organizational goals are seldom clearly defined; in addition, they seldom enjoy consensus. In other words, goals are often ambiguous, sometimes multiple in nature, and rarely agreed upon by various interest groups in the organization. From these characteristics follow several related questions and concepts.

First, Why do organizations exist? Who created them? Who or what controls them? Answers to these questions are sometimes conflicting, depending upon the school of thought of the theorist. Weber (1947) suggests that organizations arose because they are the most efficient and rational means of accomplishing a given task. In the rational bureaucracy, control is vested in a hierarchical pattern of authority based on the expertise of the person holding the office. The human relations school, however, explains control through a process of obtaining consent of subordinates by their participative involvement in decisions and a concern for the individuals' human needs, as opposed to the strict adherence to official organizational goals.

Two extremes exist: the complete rational emphasis on efficient production of goals versus human concern for individual needs of the various participants in the organization. To some extent, both extremes can be seen in the concepts, "goal displacement" and "goal distortion" (Etzioni, 1964). Goal displacement occurs when the means to achieve a goal becomes an end in itself. Another variation is the development of a new goal that better fits an ongoing process in the organization. Goal distortion, in contrast, is related to the changing definition of the official goal by the various interest groups in the organization, each with its own agenda. The negotiation of competing

agendas is a political process, quite apart from the official rationality of the organization. This conception of organizations is based on a pluralistic notion of power and influence that is similar in many respects to pluralistic views of politics in the wider society; various constituencies are seen as having sufficient influence to offset the wealth of a ruling elite (e.g., see Dahl, 1958, 1961; Polsby, 1960).

This view contrasts with an elite based model of society and organizations, which is the position of this thesis. Perrow's (1979) notion that organizations are tools to be used by their masters and Domhoff's (1979) analysis of the processes by which the wealthy and power elite maintain control of organizations apply here. Perrow (1979) suggests environmental and network analysis, which focuses on interactions between an organization and the surrounding environment, itself composed of other organizations. Domhoff's (1971) documentation of elite control of organizations and their penetration into other organizations and governing bodies through interlocking directorates is also consistent. In sum, Perrow (1979) and Hall (1977) suggest that large organizations not only react to the environment and other organizations but also attempt to control that environment; this is a fundamental distinction from traditional organizational theory which views the organization as a passive entity.

Organizational goals, however, remain a problematic issue in schools. For one thing, the analyses of many organizational theorists have been directed toward private corporations. Public organizations, e.g., schools or governmental agencies, are recognized as being less goal directed and having more ambiguous and diffuse purposes. In the

next sub-section, some issues related to public organizations will be raised. But this point needs to be strongly emphasized: despite the problems associated with goal ambiguity and measurement in public organizations, these factors do not preclude organizational effectiveness. In fact, the review of the school effects literature above suggests that it is the manner in which this goal ambiguity is approached that is a major determinant of success or failure in schools. Setting specific goals, e.g., high achievement for all students, directing the energies of the organizational members to the accomplishment of that goal(s), and believing that the measurement of the goal(s) is a valid indicator of organizational effectiveness are associated with more effective attainment of those goals.

Public and Educational Organizations

Several researchers have attempted to develop concepts that can explain the differences between public sector organizations and private corporations. Compared to the single-mindedness of the private organization (i.e., profit), public organizations are seen to be organized anarchies because of the uncertainty, diffuse and competing goals, unclear technology, and fluid involvement of participants which are characteristic of these public bodies (Cohen & March, 1974). The intent of this conceptualization is to make explicit the uncertainties and ambiguity; hopefully decision-making and control can be improved when leaders understand the nature of their peculiar organizational milieu.

Two other concepts are closely connected to the "organized anarchy" appraisal. Weick's (1976) work on loosely coupled

organizations refers to the tenuous nature of formal organizational ties between members at various horizontal levels. Schools are the prototype of loosely coupled organizations. Teachers have almost no formal contact and little informal contact with other teachers. Rather they interact predominantly with their pupils. Their training, the demands of the organization, and reward structures all combine to produce a loose affiliation based on proximity but with no real incentive nor benefit for cooperation and the pursuit of goals in a more structured manner. Weick (1976) indicates some preliminary evidence that strong teacher unions can affect the degree of coupling; likewise the studies on effective schools suggest that a more tightly coupled organization may be associated with higher achievement. But more research is needed in this area.

Cohen and March (1974) also describe a garbage can model of organizational decision-making. This is related to the public and political nature of the organization. The garbage can becomes a repository of issues, public interest, and interest group agendas which collect around a given problem. Often these other factors have little to do with the original problem. But the very nature of a public problem provides a forum which attracts various groups who desire a public hearing on their own issue. In effect the garbage can model is a form of goal distortion. Again Cohen and March (1974) suggest that explicit understanding of this stylistic process can be used to protect the substantive concerns of a problem. One strategy is to provide a lesser or peripheral issue which can function as the garbage can, thus furnishing the public forum desired by various interest groups. This leaves the more important issue to be resolved through

merit and more reasoned debate.

One last distinction is useful here. Domain theory (Kouzes & Mico, 1979) conceptualizes human service organizations in terms of the conflicting goals and behavior of the three separate "domains" which comprise this type of organization: the policy making board of directors which is politically elected, management with its administrative and supervisory responsibilities, and the professional staff who are charged with delivery of service to the clients. Kouzes and Mico (1979) suggest that conflict between these three domains is inherent because of the different purposes and modes of accountability. Recognition of these differences is a helpful if not necessary condition for effective change or reform.

A cautionary note is appropriate, however. The distinctions between public and private organizations can increase understanding of the unique problems of human service or governmental bureaucracies. But it is easy to accept these insights as rationalizations for why public organizations are so often inefficient. As Wright (1979) demonstrates in John DeLorean's expose of life in General Motors, disagreement over goals, means, short-term profits at the expense of long-range organizational health, and other problems are ever present in the corporate world. While human service organizations must grapple with ambiguity of goals and the competing agendas of different interest groups, organizational effectiveness is not precluded. The challenge is whether the insights of social science will be used to promote improved functioning of organizations (e.g., based on exemplary practices from outlier studies) or as evidence that "little can be done." This choice leads to the problem of organizational change,

the last section of this chapter.

Organizational and Educational Change

The literature on educational change is extensive. However, the lessons to be learned from many of the studies simply reinforce the point made in Chapter II, that much of this work is descriptive and atheoretical. No clearcut conceptual framework can be found which guides research in this area. Furthermore, much of the work that has been done is inconsistent with the theoretical framework proposed for this study, is based on a conception of human nature that is counter to the movement toward effective schools reviewed earlier in this chapter, and is often contradictory with existing empirical evidence.

Because of the differences just noted, much of the literature on educational change is interesting from an historical point of view. But a complete explanation for these contrasting conceptions compared with the current research problem and intervention, although useful, lies beyond the purview of this review. Therefore, a brief outline of these differences will be given. This section will then conclude with a short review of related studies on school improvement.

Historical Perspective

Kurt Lewin's (1952) classic study during World War II with Iowa housewives concluded that small discussion groups over coffee were the most effective means of changing attitudes and behavior toward a patriotic but culturally unappealing goal. During the discussions, the women shared their experiences, new recipes, and mutual declarations to try and eat various organ meats. Contrasting strategies such as lectures or individual consultation with university experts proved

ineffective. This approach to behavioral change has become accepted as perhaps the most successful yet devised; programs such as Weight Watchers, Smoke Enders, and Alcoholics Anonymous are based on a support group similar to that devised by Lewin (1952). The current research program utilizes a "Climate Watchers" informal group in the school to help create awareness of and promote change regarding attitudes about children's ability to learn.

Beyond the research on eating habits, group relations and social change in general became a booming field of investigation in social psychology during the 1940s and 1950s. For example, Cartwright (1954) summarized the effects of group behavior on individual change. Festinger (1953) and Kelman (1958) discuss the degree of internalization of attitude change in the individual as related to group influence. Kelley (1952) summarizes contributions to reference group theory. Bales (1954) investigated the role of group leadership in problem-solving situations while McGrath (1970) looked at group structure and role distribution.

These representative studies form an important background for the field of educational change. The link to education comes through the human relations school of organizational theory. The Hawthorne studies (Roethlisberger & Dickson, 1947) made evident the influence of the group in the formal organization. The classic study by Coch and French (1958) illustrated the importance of participative planning by the organizational members affected by a change program. A major development of this linking between group relations research and the emphasis on the informal group in organizational theory was not only the human relations organizational model (cf. Perrow, 1979) but also

the institution of the training group (T-group) lab in Maine for human relations skills development.

Fullan et al. (1978) document extensively the resulting movement to improve organizational functioning through overall increase in human relations skills, communication, attending to employees' human needs, and participative involvement in change. This movement, which originated in the private sector, became known as Organizational Development (OD). Perrow (1979) has suggested that this human relations movement, primarily utilized by management, is actually a form of social control. Hall (1977) questions the assumption that higher employee satisfaction and morale lead to higher productivity (see Hage, 1965); this parallels the point made in the first section of this chapter questioning the assumption that higher organizational climate on the OCDQ (Halpin & Croft, 1963) leads to higher achievement.

This writer's own general critique of the Fullan et al. (1978) review is consistent with Perrow (1979) and Hall (1977); OD in schools overemphasizes process over product, assumes that improving morale, communication, involvement, and job satisfaction will result in higher productivity, inadequately stresses formulation and measurement of organizational goals, and lacks empirical evidence that outcomes have improved. On the other hand, the Fullan et al. (1978) review provides an extensive documentation of the transfer of OD from the business sector to the schools. To their credit, Fullan et al. (1978) call for changes in the OD movement toward a greater emphasis on student outcomes, a correction long overdue since many OD projects never even mention achievement in the stated goals.

While much of the literature on change and innovation in education has not been explicitly OD, this human relations movement has been an implicit factor in much of the work that has been done. This can best be seen by addressing the decade of the 1960s.

The 1960s: Decade of Change

In 1957 Russia shocked the United States by orbiting Sputnik. The U. S. Congress responded by passing the National Defense Education Act of 1958 which provided massive federal funds for schools for the first time, justified in the name of national security. Scientists concerned with our slipping production of young graduate students in science, math, and foreign language convened at Woods Hole, Massachusetts in 1959. Bruner's (1960) classic, The Process of Education, summarized the thinking that emerged: students even in elementary school were to learn to think and solve problems as if they were miniature scientists. So was born the inquiry-based curriculum in the sciences, the new math, and the foreign languages. The federal government was to provide the funding for the research and development needed to bring about the proposed change. Thus began the decade of change (see Goodlad, 1975; Tanner & Tanner, 1975; Van Til, 1974, for further descriptions of this period and curriculum change in general).

What becomes obvious from a perusal of this literature on educational innovations is that much of the change was nominal only. Many of the touted new science and math curricula were never properly implemented, even where they were tried. The schools had failed! This conclusion regarding the recalcitrance of schools and teachers toward change and improvement, combined with the dismal conclusions

of the Coleman Report (1966), was to mark the beginning of public questioning of our institution's schools. Throughout the late 1960s and on into the 1980s this loss of public confidence has been documented in the annual Gallup polls on education (Smith & Gallup, 1977).

What caused this failure? No easy answers are available. Analysis of what exactly the failure was, let alone why it occurred, or if it occurred, is itself an enormous task. But some helpful insights are possible from a series of reviews and major works on change. These give necessary perspective to the subsequent focus on school improvement.

Morrish (1976) provides one of the most comprehensive reviews of educational change. Of particular interest is his analysis of three basic models of change--Research and Development (R & D), Social-Interaction, and Problem Solving. The R & D model is primarily large scale research-facility developed innovations which are supposedly user proof. This R & D model is also an elitist conception of change; the developers are experts and the users (teachers) are presumably passive recipients who have no real idea of what is best for the system.

The Social-Interaction model is derived primarily from rural sociological studies of the S-curve phenomena, which describes the percentage of individuals in a population who adopt an innovation as it spreads over time (Morrish, 1976). Most individuals can be classified into one of five groups based on their typical reactions to innovation--innovators, early adopters, early majority, late majority, and laggards. The major problem with this model is that it is based on independent individuals such as farmers as the adopting units

rather than organizations. The major review of this work is by Rogers & Shoemaker (1971).

The Problem-Solving model has been utilized in a variety of ways. The OD model just mentioned is one variant of this model. Another variant is the work by Havelock (1970) and Havelock and Havelock (1973) on innovation and the change agent role. The emphasis in this model is on user identification of need and formulation of the problem and solution. This model assumes bottom-up participative control of organizational change programs. A major weakness of this approach is the susceptibility to goal displacement and goal distortion by organizational members.

Much of the work on change in this period reflects these three models or some variant thereof. For example, Bennis, Benne, and Chin (1969), Miles (1964), and Watson (1967) are three of the major works in educational innovation, all of which reflect and advocate strategies consistent with the Problem-Solving model and the insights into resistance to change that have come from the rural sociology Social-Interaction model. And although many of the new science and math curricula of the 1960s were developed and implemented by the federally funded R & D approach, considerable criticism of this model's assumption about the passivity of users and concomitant neglect of the local organizational context has since occurred (e.g., Goodlad, 1975; Sarason, 1971). It is almost as if the proponents of each of these models were unaware of the insights from the other two. In retrospect, the efforts appear disjointed and were often further hampered by inadequate evaluation of program goals.

The end of the 1960s, however, brought growing awareness of the lack of success of the grandiose plans which were to have reshaped the school. It is also significant that critiques of the earlier work on change were now joined to a movement of empirically grounded case studies. The next section reviews the progress of this movement.

The Contemporary Outlook

Perhaps the most significant aspect of the educational change literature of the 1960s is that much of it was prescriptive rather than descriptive. Governmental and research-oriented experts presumed that change would simply follow from their sophisticated new curricula programs. Too little attention was paid to how the innovations were received and implemented at the local level.

Perhaps the social control implicit in OD approaches (Mills, 1959; Perrow, 1979) and in the R & D model indirectly related to federal policy, manpower needs, and educational reforms (Spring, 1975) can explain the prescriptive emphasis of this period. Furthermore, the human relations concern with affect and process as opposed to product is consistent with less concern for evaluation of organizational goals. However, mounting evidence of unrealized change gradually led to empirical studies.

For example, Gross (1979) reviews administrative-oriented approaches to overcoming worker resistance to organizational goals. These models assume that management must take primary responsibility for the success or failure of change. Accordingly, the Overcoming Resistance to Change (ORC) model (reviewed in Gross, 1979) suggests that the administration must take appropriate steps to reduce the

anxiety, fear, or other factors that members in the organization perceive negatively. However, a case study of an educational innovation demonstrated that the ORC model did not adequately conceptualize the entire process of change, especially the implementation stage. Based on this study, Gross, Giaquinta, and Bernstein (1971) developed an expanded model, the Leadership Obstacle Course (LOC). Although this new model is conceptually more complete than the ORC model, the LOC model still remains merely descriptive of the stages and pitfalls of change that the administrator is to orchestrate.

But even the LOC theory was not sufficient. Herriott and Gross (1979) edit an extremely important book composed of five case studies of federal-local collaborative efforts to produce change in rural districts (the Experimental Schools program), along with several organizational analyses. Gross and Herriott (1979) conclude that further elaboration of the stages of change is necessary. The Elaborated Leadership Obstacle Course model (ELOC) represents their updated work. This is the same model noted above in Chapter II regarding the theoretical shortcomings of organizational and educational change in general.

One of the major conclusions of recent work on educational change is the importance of utilizing the school as the targeted unit of change. Although a variety of research supports this finding (e.g., Berman & McLaughlin, 1976; Goodlad, 1975; Herriott & Gross, 1979), the classic analysis of factors in the school which impede change was conducted by Sarason (1971). The focus of this study is the culture of the school, which Sarason (1971) explains in terms of programmatic and behavioral regularities. Regularities are the ongoing patterns

of interactions which comprise day-to-day routines and functions of the organizational members. Both structural or programmatic aspects of the school and individual behavior become so accepted that their existence takes on a moral righteousness. These regularities, of which the teacher-student negotiated compromise on social control versus motivation and learning is central, not only define appropriate behavior, but also provide strong resistance to any innovation which threatens the ongoing regularities. Lieberman and Miller (1978) present a similar discussion which reflects occupational structures as well, consistent also with Lortie's (1975) work.

A somewhat related analysis by Pincus (1974) describes the structural features of schools as public tax-supported organizations. This review contrasts the public schools with private, for profit organizations in a brilliant description of existing disincentives for change. Pincus (1974) notes that governmental policies and the characteristics of public organizations, the "organized anarchies" of Cohen and March (1974), combine to produce an environment that is not favorable to change. But, notes Pincus (1974), change is possible; restructuring governmental policies, along with district-wide and school level incentives, to encourage adoption of the organizational goals is the key. Often this entails bringing about outside public or media pressure for change.

Reformulating reward structures to achieve organizational goals leads directly to probably the single most important factor in organizational change: goal focus, the extent of agreement and emphasis on the organization's goals. Two major educational change programs illustrate this. A University of California at Los Angeles (UCLA)

team directed a five-year school renewal program involving 18 elementary schools from 1967 to 1972, known as the League of Cooperating Schools (Goodlad, 1975). School renewal was oriented toward organizational change and improvement to make schools more humane places for staff and students. Goals were identified by each staff based on their perceived needs. Self-renewal by the school is predicated on the assumption that the staff has within itself the capacity for change if provided some start-up assistance, in this case from the other League schools and the cooperating UCLA staff under John Goodlad. The program explicitly targets the adult life of the schools for change. Bentzen, Bishop, Hoban, Lieberman, Overman, Seeman, Shiman, and Sirotnik (1974) extensively document changes in the various schools among the adult staff. Some of the changes are impressive, although variation between schools existed. However, the point here is plain: this program assumed that changes in the adult staff would result in changes in student outcomes. But the extensive analyses of adult processes simply were not checked for concomitant changes at the level of students. The program as formulated is a classic candidate for goal displacement from student outcomes to adult concerns. Unfortunately the data reported do not inform as to whether this actually occurred.

A similar shift, this time documented, occurred in the Experimental Schools program. This goal displacement occurred at both the local (e.g., Donnelly, 1979) and the federal (Abt & Magidson, 1980) levels. Over a period of time, emphasis was changed from district problems, particularly low student achievement, to programmatic varieties of organizational change. As Abt, Cerva, and Marx (1978,

cited in Abt & Magidson, 1980) note, pupil gains in the ten rural districts were so variable that no consistent claims due to participation in the program could be made.

A close reading of the case studies and analyses in Herriott and Gross (1979) suggests that both goal displacement and goal distortion were the rule rather than the exception. Furthermore, these analyses speak clearly to an all too common phenomenon with respect to goal focus, i.e., the emphasis upon either administrative leadership and pressure for change or bottom-up participative involvement and ownership. The record indicates that successful organizational change is unlikely unless both elements are present.

A parallel situation occurs in the area of staff development. Staff development goals for educational change often take one of three foci on organizational goals: a bureaucratic administrative approach, the individual-personal dimension directed toward achieving individuals' own humanistic concerns, or the authority relations inherent in the organization (Shiffer, 1978). To the extent that any of the three areas are neglected, staff development is less likely to be effective. This conception is similar to the domain theory of Kouzes and Mico (1979). In like manner Williams (1978) stresses the importance of dealing with the political self-interest of various role groups in the organization. Shiffer's (1978) warning on the danger of slighting any of the three areas is also consistent with Lezotte et al. (1980) who stress that successful educational change requires efforts at all levels of the social system--organizational or structural, group, and individual.

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The danger of goal displacement, however, is ever present. A model by Miller and Wolf (1978), for example, falls prey to the common focus on adults rather than student outcomes. Likewise, the Concerns-Based Adoption Model (CBAM), describing Stages of Concern (SoC) and Levels of Use (LoU) through which individuals progress in developmental sequence during the adoption of an innovation (see Hord & Loucks, 1980), is highly oriented toward the individual, adult staff. This work is important for conceptualizing the degree to which an innovation is implemented correctly, yet the danger of goal displacement due to insufficient stress on the organization as a whole or on student outcomes remains.

One last major study should be noted. McLaughlin and Marsh (1978) review the Rand study of change. This study in eight volumes ranks as the most comprehensive empirical analysis of educational change yet conducted. Without listing the major conclusions of this study, the findings are clearly consistent with the factors noted throughout this chapter. Of special interest is the variable with the most powerful association with achievement in the entire study: teacher efficacy, the degree to which teachers perceive themselves able to make a difference in the learning of students. This variable is closely related to teachers' expectations for and evaluations of students' ability to learn, probably the single factor most cited in the effective schools literature. The teacher efficacy variable also taps the fate control dimension in a manner which parallels the various student measures of locus of control reviewed above.

Seemingly inevitably, this review returns to beliefs about students' abilities to learn. Throughout this review allusions to

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the nature of man with respect to educability have been made. The next section addresses some issues in this area that are directly relevant to this study.

Can All Students Learn?

No matter how much we study the factors which affect learning, for most Americans--including researchers, educators, and the public--the ultimate question with respect to student achievement is, How much individual ability does the pupil have? Is the child "slow"? Perhaps he or she is learning disabled (LD)? The standard solution is a series of diagnostic tests to determine why the child cannot learn. The difficulty is presumed to be with the pupil. This model is based on the psychology of individual differences in ability, the underlying assumption of the American Dream.

Individual social mobility is believed to be controlled by one's ability and effort, which determine how well one does in school, which in turn enable one to climb to his/her level of merit in the occupational hierarchy. Our Constitutional rights, particularly our system of public schools, supposedly assure us of equal educational opportunity to achieve our potential, no matter what social class one is born into. Thus in this view, the major factor in success or failure is individual ability, generally believed to be measured by scholastic aptitude or I.Q.

A contrasting but relatively unknown view is the social-psychological explanation of the J-curve of conforming behavior (Allport, 1934; Brookover & Erickson, 1975). According to this model, virtually all students are capable of learning whatever societal

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expectations demand of them. Increasing evidence exists that the ability of virtually all students to learn at grade level equivalents is among the factors that can be distributed in a J-curve. Data from Bloom's (1976) work on mastery learning, Heber's (1972) study of early intervention programs, other countries that have virtually no problem with "slow" learners (Stein, 1971), and the literature on effective schools (e.g., Edmonds, 1979) all suggest that virtually all children in America have sufficient mental capacity to achieve at grade level.

Why is the belief in individual differences so predominant? Numerous radical revisionists have suggested that this ideological belief is rooted in the hierarchical occupational and social class structure of our capitalistic system (e.g., Bowles & Gintis, 1977; Persell, 1977). Of particular interest is Marks' (1980) historical study of the shaping influence on American schooling by E. L. Thorndike's work on the I.Q. test in the early twentieth century. One of the ties to the capitalistic system is the support for Thorndike's work by the Carnegie Foundation. Conceptions of individual difference legitimate the vast differentials in status, wealth, and power. The sorting and selecting of students into the occupational hierarchy by the schools is seen by revisionists to create scientific and objective legitimacy based on I.Q. for the reproduction of the social class system from generation to generation. Everyone "knows" that some people do poorly in school and are not capable of better jobs, and that of course most of those who do not do well in school are the poor and minorities. Marks (1980) puts the matter bluntly when he states that individual differences are socially constructed by the practices in our schools which are designed to

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foster and increase differences in learning, e.g., grouping, individualizing, norm-referenced tests, competitive grading, etc.

The obvious question now becomes, How does this affect research on educational change and effective schools? The answer is that many of the educational innovations and most of the research conducted has been based upon the assumptions of individual difference. Quite simply, it has been assumed that the low achievement prevalent in many schools and in certain children is a function of either limited native ability or culturally disadvantaged family upbringing; schools may have some minor impact, but there will always remain a certain percentage of children who simply cannot learn well. That bias has already been described in the review of the school effects literature. Some obvious examples with respect to educational innovation include the 1960's emphasis on grouping and tracking and the revised curricula of science and math in the post-Sputnik era. Of course the emphasis on I.Q., the use of standardized norm-referenced tests, and the use of reading groups associated with basal readers are prevalent in our society. On the other hand, criterion-referenced tests have only recently become popular.

Project LONGSTEP (1976; Chalupsky & Coles, 1977) stands as the epitome of this trend. In a three-year study of 30,000 students, 80 schools, and 1,500 teachers in 13 districts, a series of educational innovations commonly associated with individualized instruction were implemented. Major findings included: (1) overall, LONGSTEP students did not do better than national norms, (2) in third grade, individualization was negatively related to achievement, and (3) over-achievers in the study were consistently those who had a lower level

implementation and degree of individualization. Although these findings are consistent with the research on effective schools, the belief that individualization is a beneficial innovation remains both prevalent and virtually unchallenged. The Experimental Schools program (Herriott & Gross, 1979), a major federally funded research and assistance effort, was based on comprehensive change that revolved around individualizing and personalizing instruction, consistent with assumptions on meeting the needs of individuals with vast differences in ability.

Despite the prevalence of innovations based on the model of individual differences, some recent work has focused on a social-psychological, social systems model of school improvement. A brief notation of some of this research, of which the current study is a part, concludes this review.

School Climate and School Improvement

The intervention program upon which the current study is based is described in detail in Chapter I. Other reports generated from this project have appeared previously. For example, Miller (1980) suggested strategies to reduce student sense of academic futility. Tornatzky, Brookover, Hathaway, Miller, and Passalacqua (1980) describe problems involved in implementing change. Lezotte et al. (1980) summarize the literature on school learning climate and outline a strategy for changing schools. Kim (1980) found that the association between the instructional climate and the degree of implementation of various instructional innovations was positive. A series of papers discussed goal focus (Hathaway, 1981), organizational structure

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(Passalacqua, 1981), resistance to change (Miller, 1981), and leadership (Logan, 1981) with respect to the ongoing intervention.

The current intervention is not, however, the only one designed to create effective schools. A spinoff project conducted by Hathaway (1980) found that considerable variation between classrooms can occur in a school-based program. Edmonds' (1979) summary of research on effective schools is stated in five basic findings. These findings are the basis of a school improvement program in New York City that was implemented under Edmonds' direction (McCarthy, Lazarus, & Canner, 1980). That intervention is highly parallel to the current program.

In fact, the recent explosion of research on effective schools, especially in many state departments of education, has led to the establishment of several school improvement projects based on the findings of the studies of effective schools. Edmonds (1982) and Shoemaker and Frazer (1981) describe several of these programs. The set of inservice modules originally developed for the current intervention program have been revised and are now published as a complete program for creating effective schools (Brookover et al., 1982). This program is now beginning dissemination at various points throughout the country.

In short, although this review has been lengthy, the story is only beginning. The continuing and rapidly expanding studies on effective schools and programs to improve schools will, in all likelihood, become one of the major movements in education in the 1980s. The need for continued research in this field is obvious; various problems needing additional study have been indicated throughout this

review. It should be noted that other reviews of educational change are included in many of the references noted throughout. Gaynor (1977) presents yet another major summary. Regardless of the source, however, the theoretical work remains at a low level, primarily descriptive. The study of organizational and educational change has far to go.

Summary

The current study is an organizational analysis of an intervention program to increase achievement by improving school learning climate. The project is based on a social-psychological conception of human learning in which virtually all children are believed to be able to learn effectively. This is contrary to the predominant view in education that the ability to learn is distributed in a normal curve.

This chapter has traced the development of the work on school learning climate, on which this intervention is based, and its relation to the school effects literature. In addition, a brief analysis of some applicable concepts in organizational theory is presented. Finally, a summary of educational and organizational change completes this review. The review has focused on the historical development of the belief that effective schools can make a difference in achievement for all students and the current research problem, an analysis of an organizational intervention to produce those effective schools.

CHAPTER IV

PROCEDURES AND METHODOLOGY

This study will be primarily a descriptive organizational analysis. The study focuses on describing and explaining the history of the SCAT intervention program in the district and in selected schools. This will entail, first, describing in narrative fashion the processes by which change is attempted and actually occurs. Then data from various sources (described below in the section on Data Collection) will be juxtaposed with the descriptions in order to analyze the goals, processes, and results of coincident change (or lack thereof) in comparative fashion. This second format will be used to analyze the research questions.

In essence, a "critical incidents" technique of matching particular events with ensuing processes and results will be utilized. However, causal statements will be beyond the limits of the data at hand (see "Limitations of the Study," Chapter I). Thus the study emphasizes processes of change by combining elements of longitudinal case study with the framework of organizational analysis outlined in Chapter II.

This chapter, then, outlines the procedures and methodology which will be followed in this study. First a description and rationale for the case study approach will be given. Then sources of data will be identified. Finally, procedures for the two parts of the analysis

and findings will be given: a narrative of the progress of the intervention and an analysis of the five research questions outlined in Chapter I.

Case Study Research

The study of naturalistic settings has been variously termed ethnography, qualitative research, case study, anthropological research, or even just field research (see LeCompte & Goetz, 1982). Whatever the terminology, a common criticism is the failure to meet standards of scientific objectivity. These standards are generally associated with procedures and methodology that are common in the tradition of positivistic, quantitative research. In particular, the problems of demonstrating adequate reliability and validity, both internal and external, in various forms of field research has received much attention. These and related issues will be addressed in this section.

First, the term "case study" is to be utilized for the current study. This term is both more inconclusive and more restrictive than other related terms noted above. Ethnography or anthropological research connote a form of in-depth study based on extensive observations, use of informants, and detailed note-taking by the full-time researcher. While observations and notes form a portion of the data base for this study, in no way does this research conform to the standards of anthropology or ethnography. The author was primarily a participant-change agent throughout the study. Collected observations, while conducive to an overall analysis of the intervention, obviously would reflect somewhat, no matter how strong the effort to

remain objective, the bias of personal involvement in the SCAT project. Further, the role of change agent precludes the full-time observations and note-taking of the pure researcher.

But the case study format of the current study surmounts the limitations just noted. The problems of personal bias can be resolved, primarily by two strategies. First, recognition of the problem can help to check this proclivity. But this is standard for all qualitative research, and the dual status of change agent and post hoc researcher requires further safeguards. This further check comes, second, from triangulation, the utilization of multiple research perspectives and methodologies (Denzin, 1970; LeCompte & Goetz, 1982). In addition to the observations, this study entails interview data, both pre and post, survey questionnaires, document analysis, other published and unpublished reports, and results of achievement tests throughout the project.

It is in this sense that the term "case study" is deemed appropriate for this research. The framework for the organizational analysis outlined in Chapter II emphasizes first, the processes by which goals are formulated and undergo change and second, the effects that these processes have on the attainment of the original goals, in this instance higher achievement for all students. While the personal observations of the author are vital to this analysis, despite the danger of bias, it is the more complete use of these additional data sources and research perspectives that both justify and permit a more comprehensive case study approach.

The emphasis on processes of change in this study deserves further comment. To understand the manner in which different variables

interact, i.e., how particular processes produce the observed results, the researcher needs to focus on the context in which the behavior occurs. Descriptions of these processes are facilitated by in-depth field studies. But this reality introduces a second major issue in qualitative research: what is the purpose of field studies? Here the criticism of limited generalizability becomes the focal point. From the positivistic, quantitative research perspective, scientific progress comes from discovering, testing, and confirming, in probabilistic form, the existence of associations between variables that extend beyond specific cases to generalizations across cases. From this perspective, the in-depth study of a single case is unlikely to lead to generalization because of the emphasis on the situational factors that are unique to each instance.

But it is precisely here that qualitative case study has both its strength and purpose. For the insight into the processes of the single instance often leads to the proposition that can be tested across cases in quantitative research. In other words, a major purpose of qualitative studies is to develop a series of in-depth empirical descriptions of the processes which occur in a given instance. These studies often generate hypotheses when researchers note similarities in these descriptive studies, which can then be tested for generalizability in more representative samples. At the same time, extensive quantitative studies conducted prior to the detailed investigations of specific instances can frequently suffer from a misguided focus on the wrong variables.

A classic illustration of this phenomenon is the original Coleman Report (1966). That study, one of the most extensive studies ever

conducted of our nation's schools, concluded that schools make little difference in achievement once family background has been controlled. Conducted in 1964, prior to the in-depth case studies of effective schools, the Coleman Report focused on quantitative measures of input factors. In contrast, quantitative studies over the past decade have focused on the processes, behavior, and interactions within the school. These later studies utilized the findings and descriptions from qualitative and exploratory studies of exemplary schools. In essence, the insights and hypotheses of intensive field studies have been confirmed by later quantitative research. This step was short circuited in the case of the original Coleman Report (1966); fifteen years later Coleman II (Coleman et al., 1982) concludes that schools do make a difference and demonstrates that quantitative researchers can learn much from qualitative investigations.

Qualitative research can lay the groundwork for future quantitative studies in any field. Theoretical models which remain at the descriptive or explanatory level rely on the continued accumulation of contextual empirical studies for new insights and further hypotheses. Organizational and educational change is one such area clearly in need of these new insights (see Chapters II and III on the undeveloped state of theory in this area). The current study is a contribution to this field.

A third major issue in qualitative research revolves around adequate scientific standards of objectivity and replicability. Traditionally this concern has questioned the reliability and validity of this form of research. Space does not permit an extended discussion of this issue here. However, an extensive literature on this

subject does exist; LeCompte and Goetz (1982) give a thorough analysis of both internal and external forms of reliability and validity. They conclude that some qualitative studies have been less concerned with these scientific standards than is desirable; however, many excellent studies have been conducted and strict adherence to the procedures of scientific research is possible. Other researchers (e.g., Denzin, 1970, 1978; Harris, 1979) present strong evidence to support this contention. The LeCompte and Goetz (1982) review provides an excellent overall introduction and treatment of this topic.

Data Collection

A variety of data sources will be utilized in this study. The primary sources are listed below:

1. Various achievement scores, longitudinal data.
2. Published accounts and studies of the district.
3. Internal reports and unpublished studies of the district.
4. Interview data from the intervention program.
5. Survey and questionnaire data from the intervention program.
6. Document analysis of policy statements, memos, etc.
7. Ethnographic/participant observer notes of the author and other members of the intervention team.

These sources have been accumulated throughout the course of the intervention. The data permit the multiple perspectives that are necessary for the triangulation of research strategies in an intensive case study. But this study is based on these previously existing sources. With the exception of a few interviews, these data were collected as a part of the ongoing intervention rather than specifically for this dissertation. Of course, the data are subject to the

usual concerns for reliability and validity. This concern is addressed in the preceding section.

Narrative of the Intervention

Chapter V will consist of two sections. The first section will be a descriptive narrative of the SCAT intervention. This narrative will present circumstances by which the intervention came about. That will entail tying the events of the 1976-77 school year to the background of the Pontiac School District previously described in Chapter I. Then a chronological progression of the change project in the district will provide an overall framework for the conceptual organizational analysis.

Interwoven into the longitudinal description of the narrative will be an emphasis on the processes of change in the district and selected schools. The analysis will focus on the school as a social system. Concepts such as leadership, goal distortion or goal displacement, structural impediments to change, and the relation of the school to the larger environment, specifically factors in the district which impinge directly and indirectly on the building level behavior, will be discussed in relation to the actual progress of the intervention.

Overall, the narrative is designed to describe the implementation of an educational intervention to raise achievement. The details of this narrative provide the necessary outline from which the analysis of the research questions can proceed.

Analysis of Research Questions

The second part of Chapter V will address the research questions that are given in Chapter I. Discussion of these questions will utilize two sources. First, the narrative itself provides the setting in which the processes of change occur. The research questions must be analyzed within this context. Second, the various information sources listed above provide the data with which to analyze the specific research questions. The use of these data sources will allow a juxtaposition of various outcomes of the intervention with the processes outlined in the narrative.

Of the five research questions, #4 requires further delineation. Question #4 concerns changes in achievement level. A description of the outcome variables and the method of analysis of changes in achievement are given here.

Outcome Variables

Longitudinal data from two different achievement tests are available in Pontiac. These tests are as follows:

1. Michigan Educational Assessment Program (MEAP): The MEAP is a criterion referenced test given each year in September to all 4th, 7th, and 10th grade public school students in the State of Michigan in the areas of reading/language arts and mathematics. The test was developed by the State Department of Education to provide assessment information to schools on the achievement of all students in the basic skills. Some problem exists for longitudinal comparison because the tests have undergone revisions since their introduction in 1969.

In 1976, the tests included 30 objectives in math and 19 in reading at 4th grade, 40 and 20 respectively at 7th grade, and 26 and 10 at 10th grade. Each objective has five items. A student is considered to have mastered an objective if 4 of the 5 items are answered correctly. Results are reported in terms of the number or percent of objectives mastered by student and building. The existence of this data in longitudinal form permits comparison between schools and shows the extent of improvement in a given school. In addition, the report to the schools contains a breakdown of the percent of students who attain mastery of the objectives by quartile, i.e., the percent who master, respectively, from 0-24, 25-49, 50-74, and 75-100 percent of the objectives. This breakdown allows a school to ascertain its progress by comparing the percent of students in a given category year by year. A decrease in the percent of students in the lowest quartile or an increase in the percent of students in the top quartile are both indications of an improving school.

2. **Pontiac Basic Skills Program or Student Needs Assessment Program (SNAP):** The Pontiac Basic Skills Program is a locally developed criterion referenced test of basic skills in reading/language arts and mathematics. The program consists of from 15-25 objectives per grade for both reading and math from K-9. A pretest is given each fall and a post-test follows in the spring, thus allowing an analysis of the growth in the number of objectives mastered through the year

for individual student, classroom, and school. Scores are reported in basically the same manner as for the MEAP.

Longitudinal data is available, but again some caution is needed for comparison of yearly gains because of test revisions.

Achievement Comparisons

Comparison of achievement will take two forms. First, longitudinal analysis of changes in the level of achievement in the district and individual schools will be presented in tabular form. This will permit investigation of changes in achievement or the existence of trends. For example, the performance level for a school or the district prior to the beginning of the intervention is necessary in order to assess the actual impact of the SCAT program.

Second, comparison between schools is of interest in assessing the impact of the intervention. Schools that were involved in the program in the first year can be compared to the schools that were not involved. Another group of schools are those that became involved in the second year. Comparisons such as these will be made by using the technique of analysis of covariance (ANCOVA). The pretest scores of the schools will be used as the covariate in order to control for initial differences in achievement level between the comparison groups. The analysis of covariance procedure then tests for differences in achievement between the various comparison groups of schools utilizing the adjusted pretest measures.

The general model of ANCOVA is an extension of the model of linear regression and is given by Hays (1973) as follows:

$$y_{ij} = \mu + \alpha_j + \beta_{Y \cdot X} (x_{ij} - \mu_X) + e_{ij}$$

where y = value of the dependent variable

i = i^{th} observation in any group

j = j^{th} treatment group

μ = grand mean

α_j = effect due to treatment j

$\beta_{Y \cdot X}$ = the weight of the linear regression coefficient for the covariate

x = value of the covariate

μ_X = mean of covariate measures

e = random error component

Because of the small sample size and consequent restricted degrees of freedom, there is a very real possibility that no significant differences will be found, i.e., there is the likelihood of a Type II error. Because of the case study format and the limited degrees of freedom, p values will be reported and discussed.

Summary

This chapter has presented a description of the methodology to be used in this study. Additionally, a discussion of the rationale for case study research procedures was given. Sources of data for the study were noted. The procedures to be followed in presenting the findings and analyses of Chapter V include two sections. The first section is a descriptive narrative of the intervention with emphasis on the processes of change and concepts of organizational theory. The second section presents the analysis of the five research

questions, juxtaposing the narrative of the intervention with the various data sources on program outcomes. Procedures for the fourth question, dealing with changes in achievement, were outlined. These include a description of the longitudinal achievement test data, use of tables for charting longitudinal changes in schools, and use of ANCOVA for comparison between treatment groups of schools. In summary, this chapter details the methodology to be used in this study and discusses the reasons for utilizing a descriptive case study format for analyzing organizational change.

CHAPTER V

NARRATIVE AND ANALYSIS

This chapter presents a description of the school learning climate intervention project in the Pontiac Schools beginning in 1977-78. In the first section a descriptive narrative details the sequence of events over the course of the intervention and highlights factors and processes in the schools, the district, and the wider environment which appear to be critical to the outcome of the program. The second section of the chapter focuses on the research questions listed in Chapter I. Data gathered throughout the intervention will be used to analyze the process of organizational change as posed by the five questions. These data, and the five questions, will be discussed with respect to the narrative of the SCAT project provided in the first section. A brief summary of the findings of the narrative and analysis will conclude this chapter.

Narrative of the Intervention

The setting for this study, the city and school district of Pontiac, is detailed in Chapter I. The focus of the study is an intervention program to increase achievement by improving the school learning climate. The program is designed to duplicate in the target schools the characteristics of exemplary schools, i.e., to introduce the factors associated with effective school learning climate. These factors form the basis of the ten inservice modules that each staff

was to study and implement with the assistance of the Brookover-MSU intervention team; the concept and the modules are extensively described in Chapter I.

Likewise, Chapter I gives the circumstances by which the MSU team contracted to work in the Pontiac district, noting both the election of a majority of blacks to the school board for the first time in 1977 and the appointment of the first black superintendent during the summer of 1978. Finally, Chapter I lists the three phases of the intervention for the first year, 1977-78: conducting a study of goals and policies in the district relevant to the attainment of basic skills, implementing an intensive intervention program to raise achievement in 2-4 schools, and conducting awareness workshops regarding the SCAT program for the remaining elementary schools.

This brief introduction updates the intervention to the point of describing the progress of the four schools during 1977-78. Some details of that effort follow.

The Vagaries of Change

Working out the details of the intervention after the initial presentations to the school board and conducting the study of plans and policies consumed the fall semester of 1977. By the time the four volunteer schools for the intervention had been selected, the initial presentations to the four faculties did not take place until February, 1978. Another factor delaying the introduction of the program was the development of the ten inservice modules ex nihilo. Considerable research on effective schools and on the relation between school learning climate and achievement (particularly Brookover & Lezotte,

1977; Brookover & Schneider, 1975; Brookover et al., 1979) formed the basis for the intervention, but translating these research findings into usable form for inservice training for teachers required a considerable effort given the short lead time.

The intervention was undertaken with considerable optimism. Each school was to receive consultant services to introduce to the staff the concepts and practices that were incorporated in the modules. A senior MSU faculty member was to be the expert module presenter, one module per week. In addition, an on-site consultant (graduate research assistant) was assigned to each school for 2-3 days per week to facilitate implementation of that week's module into practice. This in-house change agent was to answer questions, encourage staff, assist in starting new teaching behaviors, and generally act as a catalyst for changing normative beliefs and expectations about students' ability to learn. At the end of 10-12 weeks each staff was to have progressed through the ten modules, studying the concepts and implementing the behaviors indicated into the classroom. Gradually the school climate would be transformed, resulting in higher expectations, beliefs that all students can learn, higher time-on-task, adoption of a mastery learning instructional program, and all of the other factors outlined in the modules.

The reality of working in urban schools turned out to be something less than this ideal. Only a brief sketch of the four schools is given here. A more complete description of the first year of the intervention (1977-78) can be found in Tornatzky et al. (1980).

School A

The intervention in this school never really started. The initial MSU staff presentation to the faculty started with an enthusiastic visit with the principal. But the subsequent hostile meeting with the staff soon brought out the fact that the school had been "volunteered" and that they wanted no part of any outsiders in their school. An ad hoc agreement finally resulted in leaving the ten modules, which the principal and staff were to implement on their own. Subsequent data indicate the extent of the "independent" implementation was limited at best. On the other hand, there is some evidence that this principal's actions, beliefs, and goals were consistent with the program and that some of the concepts and practices had been informally followed previously.

School B

Here the intervention lasted about two weeks. Although this school did vote to participate, the tally was a bare majority. The opposition to the program soon crystallized around the issue of the change agent's presence in the classroom: despite assurances to the contrary, the belief that the classroom visits and the program would be used to evaluate teacher performance would not die. A subsequent vote resulted in the school's withdrawal from the program.

School C

In this instance the intervention made it to the end of the year, but the extent of implementation was a far cry from the ideal envisioned. Because of prior commitments, the scheduled on-site consultant from MSU was not available full time until April. Meanwhile,

a succession of MSU staff members attempted to cover the school on a rotating, and then multiple, basis. The staff and principal in this school wavered back and forth in their reactions to the program. Extensive complaints were lodged against the MSU consultants--"part time" help, too many consultants, poor interpersonal skills, pushing too hard, etc. During this time the intervention itself took a back seat to these problems, although a few individual staff members began to use parts of the program with good success. By the end of April, the staff agreed to continue the program, but only as a prelude to the next year. The originally scheduled on-site consultant was to be the only person from MSU, and only those staff who were interested would do anything with the program that year. The entire staff was to attend the presentations on the modules so that the school could begin planning for a full-scale implementation of the program for 1978-79. During May the principal became much more active in support of the project. Attitudes appeared to become more favorable, relations with the consultant improved (no longer used by the staff as a reason for not participating in the program and for not addressing the need for change and improvement in the school's learning climate as had occurred at the beginning of the intervention), and planning for the following year addressed needs and formulated strategies consistent with the intervention. The end-of-the-year workshop put together by the principal was particularly well-organized and well-received by the staff. A very shaky beginning apparently had been turned around with the promise of great things for the coming fall.

School D

This became the "star" school in the project. Early resistance in this staff centered on the rigid homogeneous grouping by classroom. In particular a first grade teacher, who was both the staff's informal leader and a strong supporter of grouping "fast" and "slow" pupils together, was openly hostile to the SCAT program, which advocated heterogeneous grouping and warned against the labeling effects and low expectations that accompany the slow and average classes. The normative climate began to change when one grade level put together an interclass team games contest, another strategy suggested by the modules. The turning point came when the team representing the "slow" class, those students supposedly unable to learn well, won the contest, outpointing the teams from the "average" and "fast" classrooms. Although this event opened some eyes and the intervention progressed well from then on, there is evidence that even in this school the program was not operating at full efficiency nor with full conceptual understanding. This school had reached approximately level 4, mechanical use, of the eight levels of use (LoU) in Hall and Loucks' (1977) conceptualization of the degree of implementation of an intervention.

Obviously, the course of the intended intervention varied widely from school to school. On the other hand, the four schools as a group significantly outperformed the remaining elementary schools in the district (see Tornatzky et al., 1980). That same analysis, however, also showed that there was no relation between the increase in achievement in these four schools and the extent to which the intervention had followed its intended pattern. These happenings led to a considerable amount of soul searching by the MSU team as preparations

were made to continue the intervention for the next year.

As previously noted, that summer also brought the new black superintendent. Some factors which seemed to affect the actual course of the intervention, and some political realities associated with a change in district leadership, are related in the next subsection.

Exigencies and Processes of Change

The wide variance in the pattern of the intervention in the four schools seemingly implies a purely situational explanation of the process of organizational or educational change: what happens in a given context is dependent on the leadership, personalities, group dynamics, and other unique features of each setting. But this idiosyncratic perspective ignores some aspects which are common to these and other settings for change. On the other hand, a nomothetic viewpoint (Harris, 1968) searches for those factors from which generalizations across situations can be drawn.

The Window Effect

Clark (Note 5) suggests that the social systems in the school and the classroom take on negotiated social rules of accepted and appropriate behavior. The teacher and students arrive at this complex of standards of behavior, routines, rules, and patterns of regularized activities through a process of give and take regarding what behavior is allowed or tolerated in a class. This process is negotiated during the first few weeks of school each fall; once these regularities have been established, they become charged with routine, habit, and even the moral force of rightness and tradition (Sarason, 1971), making change difficult. In essence, proposed changes in behavior or beliefs

threaten the negotiated agreement for appropriate behavior between the students and the teacher. Inherent issues of social control mean that any threat to this negotiated "stability" is perceived as high cost, especially by the teacher who has primary responsibility for maintaining social control (Lortie, 1975).

The window effect (Clark, Note 5) refers to the possibility of change. Once the negotiated social order has stabilized, the window of change closes. Changes introduced after these first 4-6 weeks will challenge the accepted social contract and will be resisted. The obvious implication of this concept is that change introduced at the beginning of the year while the window remains open has a much higher probability of being accepted and maintained. In fact, if the change stabilizes as a part of the social system's behavioral complex, there is a good chance that it may take on the status of a regularity, although there is some evidence that a new innovation may take up to three years for that process to be completed (Kelley, 1980).

The window effect is of particular interest in the current intervention. In each of the first three years of the school learning climate project, the open window of change had passed. In 1977-78 (year one), the program began in February. In 1978-79, a millage election in the fall and an administrative workshop retreat held off the beginning of the program until October 2 and 3 when two full-day faculty inservice days were held; the morning of October 2 was used for the first official address to district faculty by the new superintendent. Some of the schools involved did not have their first actual inservice until late October and November. In 1979-80, the district's continuing problem of finances led to half-day sessions

in the elementary schools for six weeks. When full-day sessions resumed, faculties were shuffled as the elementary teachers who had been pink-slipped for the half-day sessions were called back. In short, optimum conditions for success based on early introduction of change did not occur during the first three years of the program.

The Individual Versus the Group

A fundamental difference between the intervention of record and many of the educational innovations of the 1960s and 1970s lies in the perceived locus of change. In general education has emphasized a model of learning and teaching that focuses on the individual. The individual student, or teacher, is the target of the proposed change and failures to attain the intended goals are often blamed on the inadequacies of the individual: the student is slow, educationally deprived, learning disabled, Title I, etc., or the teacher is resistant to change, unskilled in technique, or lacking in verbal ability or content mastery.

In contrast, the SCAT program emphasizes the social system as the locus of change. Group-based norms and structural features of the organization are seen as the primary influences on the behavior of an individual. If change is desired, the structural aspects of the organization that impede change must be removed, e.g., the barriers to upward mobility imposed by rigid homogeneous ability-grouping should be removed by implementing flexible heterogeneous grouping patterns. Likewise the SCAT strategy for changing individual attitudes lies in bringing normative rewards and sanctions to bear on the individual. The SCAT program utilizes a "Climate Watchers" process similar to the

support group in Alcoholics Anonymous or Weight Watchers (see Brookover et al., 1982) in order to mobilize the power of the peer group. Furthermore, this strategy recognizes the social stigma that can be brought to bear on the individual who bucks the established norms. In factories this concept is known as "rate busting" and few individuals violate these norms. Thus the Climate Watchers process attempts to change the group norms collectively rather than trying to influence the individual apart from the group.

These processes are illustrated in School D. The first grade teacher, the normative leader for grouping by classrooms, was hostile to the program. As other teachers engaged in discussions on the effects of grouping, and as other teachers began having successes with the "slow" students in the academic team games, this individual began to lose influence. Her resistance resulted in her isolation as other staff rallied around the successes of the new program. Finally, she stopped coming to the Project meetings. The following year, School D adopted heterogeneous classes. This teacher, finally accepting the inevitable, became involved in the new program. Her natural leadership prevailed and she resumed her normative influence, but now in favor of flexible heterogeneous grouping.

The problem, however, is not so simple. What is the best way in which to mobilize the peer group (Climate Watchers) in a positive direction? The process never functioned as effectively in the other three schools, and it could even be said that the process worked in a negative direction in Schools A and B. School C perhaps moved from negative to neutral group dynamics. Thus one need for further research is greater knowledge of how to initiate this informal group force in a

positive direction.

Staff Participation in Decision-Making

One aspect of organizational change that is generally accepted is the necessity for bottom-up involvement in decision-making about innovations that will affect the participants. Both the case studies and the analyses in Herriott and Gross (1979) emphasize the need to involve the staff in innovations. The consequences of not heeding this precept are strikingly pictured in School A.

School B indicates the parallel importance of having a substantial majority of the staff in favor of involvement. Almost all innovations take considerable effort and commitment, often over a lengthy period of time before direct evidence of the effectiveness of a program is available. A fragile majority may not be sufficient to carry the staff through these demanding months in the face of (hoped for, but by no means guaranteed) deferred improvement.

Both of these cases also illustrate the importance of the leadership role. The principal in School A had not negotiated the agreement of the staff prior to the meeting with the MSU team. In School B, observations suggest the principal played a very passive role in the staff's involvement. A strong commitment by the principal might have made a difference in a faculty that was fairly evenly divided on participation.

In recognition of this issue, the MSU staff drew up a "Consultation Agreement Between Michigan State University Staff and Participating Schools" (see Appendix A). This agreement spelled out the extent of commitment by the staff and principal in order to implement

the program. Likewise MSU responsibilities were detailed. Any staff wishing to become involved in the intervention was required to discuss these commitments and then sign this form, along with the MSU staff. This reasoning included several points: (1) staff knowledge of what the intervention involved in the way of time and commitment (as opposed to finding out after the fact that they had been "duped" into a lot of hard work); (2) staff discussion and agreement regarding their decision to participate; and (3) public commitment concerning their decision. This last point has been shown to decrease the likelihood of later changing a decision, consistent with cognitive dissonance theory (Aronson, 1968; Festinger, 1957). The Consultation Agreement was put into force with the 1978-79 year.

Reward Structures and Incentives

Related to the issue of staff involvement is the matter of what rewards and incentives are available to the members of an organization. This is particularly germane when behavioral change is expected. Lortie's (1975) analysis of rewards for teachers indicates that the structure of schooling does not provide incentives to staff for bringing all students to mastery of instructional objectives.

On the other hand, the school learning climate intervention specifies the goal of mastery of instructional objectives for all students, at a considerable cost in effort, commitment, risk of failure, adoption of new instructional practices, and change of deep-seated beliefs and attitudes. Yet any reward of hoped-for higher student achievement is postponed until the end of the year.

The problem is twofold. First, some immediacy of rewards is needed to maintain initial motivation. Second, the reward system for the school staff needs to be tied directly to the performance of all students. These two factors cannot be assumed to occur without special planning, effort, and coordination in the school and the district.

In order to maximize the likelihood of change, both the formal and informal reward incentives should be addressed at all levels--central office, school wide, and classroom. Official recognition of and actual rewards for increased achievement or other goals need to be built into the system for central office staff, principals, teachers, and students. Likewise informal recognition through praise and approval from superiors and peers should be tied to improved or high performance.

In the current study, one form of informal incentive is success itself. There is a certain sense of intrinsic satisfaction in doing anything well. This became evident in watching students use recess to practice for academic contests in several schools. Team competition is a widespread American phenomenon; tapping this motivation for academic purposes, along with the added rewards of team trophies and recognition, simply reflects the use of planned reward structures to help change behavior in the desired direction. For teachers, this intrinsic motivation parallels that of the students; to extend the analogy, coaches get satisfaction from success at two levels--what their coaching (teaching) has done compared to other coaches and what that coaching has done for the youngsters in his/her charge. This form of success provides one answer to the problem of immediate rewards.

Relating formal reward structures to the intervention is more problematic. One issue is the extent to which variance in formal reward incentives is provided from school to school. Second is the extent to which the reward structures of the entire district are consistent with the goals of the intervention. But throughout the program, the MSU team and the staffs of the participating schools had to contend with competing claims for the attention and rewards that accrued from the district. The issue is explored further below.

Conflicting Priorities

The focus of the SCAT intervention is higher achievement for all students. Obviously this was a goal of both the school board and the central office. But school districts are large organizations with multiple functions and various interest groups. Other important goals include maintaining the financial wherewithal to continue schooling, personal career goals of individuals in the district, social control and the struggle over authority and influence among competing individuals and groups in the organization (Pincus, 1974). While this list does not exhaust the possible conflicting goals, it clearly represents factors that can distract or divide organizational focus or energy from academic goals. The goal distortion involved in conflict over district priorities and the pursuit of interests other than officially adopted goals can be seen in several processes which occurred throughout the course of the project.

First, a continuing financial crisis has been a reality for the district. When a recent millage vote was finally passed, it came after eight straight defeats over the last three years (Newsnotes, 1982).

During that time programs have been curtailed, including all sports and other extra-curricular activities and separate teachers for non-academic activities such as music. In the fall of 1979, the State Department of Education refused to allow the district to operate on half days. After six weeks, the system returned to full-day sessions, further increasing and postponing the financial crisis. Even the recent voter approval gave only a temporary respite. The amount of effort devoted to the passage of a millage renewal by the district at all levels--the board, administration, staff, and cooperative parents and community--became a clearcut drain on the pursuit of academic goals.

Second, the new superintendent had been influenced by the EXCEL (1978) program of the Reverend Jesse Jackson and Operation PUSH. In 1978-79 P.O.P., similar in many respects to EXCEL, was introduced. P.O.P. emphasized attitudinal change, commitment to excellence, and a general effort to improve overall education. But the program was primarily attitudinal and focused more on the individual than on the social system. Furthermore, the P.O.P. program was perceived by many in the district to have a "black" orientation and to be the new superintendent's pet project. Separating reality from perceptions of the program, however, is beyond this study. And to the extent that P.O.P. was designed to increase achievement and improve attitudes, it was consistent with the goals of the MSU school climate program.

But in practice, the P.O.P. program became a competitive alternative to SCAT, one which many perceived to be what the new superintendent wanted. Over time, the P.O.P. program phased in many of the programmatic aspects of the school learning climate intervention, at the

encouragement of the MSU team. However, there is little doubt that P.O.P. added to the diffusion of goals and resulted in conflicting messages over the appropriate direction for individual schools. More to the point, P.O.P. created a competing set of formal rewards and recognition in the district. In essence, the reward systems were perceived to be tied to participation in a particular program rather than an increase in the level of performance in the school. And the program alternatives were tinged with political overtones.

The third point illustrates these political exigencies. Allegiances frequently shift with a change of leadership. The new superintendent brought the usual shuffling of positions. But there is some evidence that blacks and whites reacted differentially to the first black superintendent. Again, an analysis of this facet is beyond the current study, but the political realities are not unrelated to the intervention.

School C illustrates the possible influence of these last two factors. The principal there was a black female whose style of leadership could be viewed as tending toward authoritarian with the staff and humanistic with the students. One result of this was a continual backlog of student problems in the office, a reflection of an overall need for improved discipline and time-on-task in the building. This principal was clearly concerned about low achievement, especially among minority students. The participation of School C in the MSU program reflected her concern.

As noted above, the spring of 1978 saw a marked improvement in her instructional leadership and support for the program, following the rocky beginning during which she had not taken an active part.

There is informal feedback that strained relations with her staff, including a somewhat one-sided decision to become involved in the program to start with, may have left her stock of social capital depleted. To that extent she may not have been able or willing to provide stronger leadership in the face of the MSU staff problems early in the project. As the year progressed, improved relations between the staff and the MSU consultant as well as the staff and herself may have allowed her to increase her support and leadership of the SCAT project.

For whatever reason, School C had undergone a significant change in attitude and readiness for the intervention; the leadership of the principal clearly was a major factor in this turnaround. But over the summer, with the coming of the black superintendent, something happened to School C's interest in the SCAT program. At the beginning of the 1978-79 year, a series of incidents--including illness of the principal, the school's fall camp program, and other factors--delayed the start of the grade level meetings and the focus on time-on-task, academic team games, and other planned activities scheduled at the end of the previous year's workshop. The MSU consultant, on an on-call basis for the second year of the intervention, received polite rebuffs to offers of assistance. Meanwhile, School C was "P.O.P.-ing" with the superintendent's new program.

At the same time, the principal was highly supportive of the SCAT-MSU program at the fall retreat held for all district administrators. This same public support, however, continued to translate into delays for the actual implementation of the SCAT instructional program. Finally, a meeting with the principal, the on-call consultant, and

one of the senior MSU staff members to iron out the problems was cancelled by the principal. The cancellation notice was in the form of a message that School C was withdrawing from the SCAT program to concentrate on P.O.P.

No final assessment of the reasons for the withdrawal is possible, but informal feedback from various sources gives some clues. One unsubstantiated report suggested that the principal was disappointed about a possible promotion. Later interviews suggested that the principal was uncomfortable with the MSU consultant assigned to her building, a white male, and that the consultant invaded her leadership and autonomy. Although there may be some truth to that hypothesis, the timing of the withdrawal would not seem to support this. The first year SCAT schools were scheduled to receive only supportive, on-call assistance from the MSU consultants who were to be spending most of their time with a second wave of SCAT schools for the new year. The first year schools were to continue the program through the principal's leadership, aided by the normative support generated by the ongoing Climate Watchers process and the continuing grade level meetings for planning and implementation. Under those expectations, threat to the principal's leadership and contact with the consultant would be minimal. Another strong possibility is the report that political motives were involved. A strong activist and supporter of the new superintendent from the black community was a parent in School C. As this woman was also reputed to be close to the principal, there could have been political advantage for adopting the superintendent's new P.O.P. program.

Whatever the actual reason, this analysis reveals the complexity of organizations and the conflicting goals and interests that can become factors in the extent to which a given school attains official academic goals or even attempts to implement programs designed to enhance these goals. Goal displacement and goal distortion for political, interpersonal, or other reasons should not be underestimated.

"Contamination" of the Intervention

One last factor to be discussed relates to the problem of program evaluation. In the ideal situation evaluators can make comparisons between schools that implement an innovation and those that do not. Random assignment is desirable but generally not feasible, given the problems of resistance when school staffs do not voluntarily agree to participate in a program. But even with controls for differences in schools at the beginning of an innovation, and recognizing the differences that may be inherent in "volunteer" schools, comparisons between intervention and non-intervention schools can still be simplistically naive. This comparison assumes that the intervention schools have implemented the program in its entirety and that non-intervention schools remain uncontaminated by the concepts and practices of the innovation.

Research by Hall and Loucks (1977) indicates that assumption is not valid. As illustrated by the descriptions of the four schools above, the actual degree of implementation of an innovation varies widely between schools. The actual progress of an innovation in a school, even one that eventually adopts it completely, is likely to

show a gradual progression from level 1 to level 8 over a period of time that can range up to three or more years.

The flip side of the assumption is also questionable. Hall and Loucks (1977) indicate that levels of use (LoU) measurements in non-intervention schools reveal that some of these supposed innovation-free schools are actually operating at a higher LoU than some intervention schools. Two factors can contribute to the appearance of innovation concepts in these "control" schools.

First, most innovations are not completely new inventions. Especially in social innovations such as a new teaching method, some elements of that innovation already exist. What is new is the way in which these elements are combined or managed. A good example of this is Bloom's (1976) mastery learning. Thus in all probability there are some teachers in any non-intervention school who are familiar with or already using portions of the new innovation. Also, to the extent that an innovation is the product of an exemplar-based research program, i.e., an attempt to implement the techniques that are consistent across "natural" effective teachers or schools, the "innovation" in this case would very likely already be present among those exceptional teachers in a building.

The second factor has to do with the social and communication networks among teachers. Teachers in an intervention school are not isolated from other schools. Word of mouth, news media, training workshops, teacher associations, and district curriculum consultants can all be sources of information about the new innovation. Likewise, there are numerous reasons why non-intervention schools may adopt parts or all of an innovation--social desirability, peer pressure, district

pressures for change, individuals with strong values about staying current with recent research, etc.

This concern over the "purity" of the SCAT program in intervention versus non-intervention schools is a legitimate threat to evaluation procedures in the Pontiac intervention. In the first place efforts were made throughout the intervention to provide conceptual and attitudinal inservice to all schools in addition to the intensive involvement with the project schools. The first year included workshops for all elementary schools. In 1978-79, the new P.O.P. program, while more of an attitudinal focus on commitment to excellence, was clearly consistent with the SCAT program in its message: all children can learn, and higher achievement and better schools are the goal. In addition, the administrative retreat for all principals and central office staff in Fall, 1978, included several presentations by the MSU staff. Other workshop presentations by the MSU staff were given to district-wide groups, including Title I parent advisory board, Title I Instructional Leaders, Special Education staff, a school/parent relations retreat, and inservice to district curriculum consultants.

In 1979-80 under the new Title IV-C grant, the project, renamed CRACKLE, expanded to provide information, workshops, and assistance to schools throughout the district, even moving to the secondary level. Two significant aspects of this expanded focus were provided to all elementary schools. A sequenced basic skill chart was developed to assist in identifying the missing prerequisite skills for a student experiencing difficulty in mastery of grade level objectives. Related to this was a major accomplishment of the new CRACKLE Supervisor: getting all elementary schools to schedule the objectives for

reading and math for the year, with a comprehensive school plan for teaching these objectives to all students. Originally a part of the SCAT program, this school plan had the effect of intensifying efforts to achieve mastery of the instructional objectives.

Finally, the media cannot be overlooked. In the spring of 1978 two articles appeared in the local paper. The first quoted the Director of Elementary and Secondary Education, who was the original contact and sponsor for MSU in the district, as saying that all students could learn and that if Pontiac children were not doing well (which they were not), then it was because the teachers had low expectations and were not doing their job. Dr. Wilbur Brookover, the head of the MSU school learning climate team, was also introduced in this article. To put it mildly, the manner in which these remarks were made, apart from the truth of the matter, created instant controversy for the SCAT program. To some extent, the controversy polarized the district between those who believed that all students could learn and those who knew that many--the poor, minorities, special education and Title I--could not. Dr. Brookover's name became associated with conflict and controversy. But out of this controversy came an awareness of what the intervention was about, at least at a superficial level, that permeated the district. This same controversy served to heighten awareness of Pontiac's low standing in achievement in Oakland County and to bring the goal of higher achievement for the district out into the open.

A second newspaper article focused on the academic team games in School D, discussing the early success of the program in motivating students and demonstrating that all students can learn well when

provided appropriate expectations and learning environment. The extent to which this media exposure and controversy created a diffusion effect throughout the district is difficult to ascertain, but the assumption of "purity" of the intervention, given the increased awareness of the whole achievement problem, is of doubtful validity. The analysis of variance procedures utilized in the second part of this chapter must therefore be viewed as exploratory only because of this issue, possible Hawthorne effects, and other problems noted in Chapter IV.

The Second Year, 1978-79

The coming of the new superintendent and the distractions of the tax levy in the fall of 1978 have already been described above. Alluded to also was the administrative retreat at Higgins Lake at which the new superintendent introduced his P.O.P. program. This conference was designed to establish a working relationship for and set the tone of the new administration. A clearcut theme was higher achievement for all students. Each school had a choice about how to go about raising its achievement level, but every school, and every principal, was to be responsible for achievement results. Principals unwilling to accept this challenge or responsibility were to seek other means of employment. The program choices included P.O.P., SCAT-Brookover, both ("P.O.P.-over"), or a self-developed school improvement plan to fit the needs of the principal and staff. The superintendent, a dynamic speaker, made it clear that P.O.P. or SCAT were highly recommended.

This strong message, coupled with both large and small group sessions by the MSU staff at the retreat, produced renewed interest in the SCAT program. The Consultation Agreement was reviewed at this meeting to prevent further occurrences like School A's "volunteered" status. The MSU staff left this meeting with several sites as possibilities for the intensive intervention for the year.

As in the first year, the course of the planned interventions and the negotiations regarding participation in the SCAT project took divergent paths. The on-call consultant basis for the first year was described above. An update on the first four schools follows.

School A

Based on contacts at the retreat, a different MSU consultant was assigned to this school. The principal continued to guide the program himself, but several long discussions with the new consultant focused on efforts to have the staff implement the mastery learning instructional method and on transforming the academic games from individual to team competition to take advantage of peer tutoring, within team cooperation, and the motivational aspects of the team sports model. These same discussions revealed a principal quite skilled at utilizing informal means of give and take to obtain what he wanted, but a reluctance to push very hard to get a traditional staff to attempt the full-scale intervention. Still, the basic message of higher expectations for all students apparently resulted in a consistent effort to increase achievement.

School B

The MSU team had no contact with this school after the vote to withdraw from the project. Second-year achievement data were not

available because the school piloted a new form of the district's basic skills test.

School C

A lengthy description of the short tenure in this school in the second year appears above in the sub-section, "Conflicting Priorities."

School D

This school continued its participation in the program. A major change was the switch to heterogeneously grouped classrooms. The re-assertion of informal leadership by the first grade teacher was described above.

Schools B and D

A new MSU staff member was added to direct the parent involvement component of the SCAT program. This consisted of efforts to initiate a school-based community support system to improve the learning climate in the home as well as increasing home-school cooperation in follow-through on homework and assistance to students in mastering basic skills. The new MSU staff member worked to implement the parent component with both Schools B and D as well as the schools that began the intervention for 1978-79.

The millage vote, the Higgins Lake retreat, and subsequent negotiations between the schools and the MSU staff all worked to delay the start of the program. The October 2 and 3 inservice days mentioned above marked the beginning of actual contact with the staffs of new schools. Capsule summaries of the intervention in these schools follows.

School E

This school appeared to be heir apparent to "star" status in the second year. The principal was a strong leader who delegated work effectively to a very competent Title I Instructional Leader. The MSU on-site consultant who had worked at School D was assigned there. Further, the school was a primary K-2 building where prerequisite skill gaps had not yet reached the multiple grade level deficits that were common among upper elementary and secondary students. The first inservice session was held during the October 2 and 3 inservice days with the program starting off well. Somehow, though, as the MSU consultant noted, something was missing. The peer dynamics of the Climate Watchers process seemingly never got started; technically the program seemed to be operating as intended, although perhaps at only a perfunctory mechanical LoU.

School F

This school seemed destined for trouble from the beginning. The principal had excellent academic credentials and was strongly in favor of the program, but she had been unable to convince her staff to participate. Relations with the staff were strained; she was perceived as impersonal, authoritarian, and unwilling to delegate responsibility. The faculty had met with the two senior members of the MSU staff the previous year; some strong statements about the need for change and the staff's willingness to make those changes had been made. Although these statements were true (the school was the lowest achieving elementary building in the district the previous year), the staff had reacted strongly and personally to the two MSU

directors and wanted no trespass with these individuals.

The principal persuaded the staff to hear an overview of the program from the MSU on-site consultant tentatively assigned to the building on October 2. The meeting was extremely hostile; the presentation in effect required selling both the program and the personal style of the consultant. But the staff did listen. The presence of the Consultation Agreement, several very open teachers, and the superintendent's message regarding achievement were several factors that resulted in an extensive discussion. Later the staff met for four hours on their own time, without the principal, while deciding to participate. They committed themselves to the project for 90 days and attained agreement from the entire staff to participate, including those who were against the idea. The added attraction that the program might lead to a better relationship with the principal was another factor that entered their decision. Within a week of their agreement to participate, the local paper published Pontiac test scores by building. This school was identified on page 1 as the lowest achieving in the city and the county. This event was utilized effectively by the principal to solidify the resolve to raise achievement.

Briefly summarizing, relations between the staff and principal remained stormy. Problems associated with this school dominated weekly MSU staff meetings as the year progressed. To some extent, a diffusion of leadership occurred as the MSU change agent unwittingly took on much of the instructional leadership. Several individual teachers played key informal leadership roles among the staff, and the entire faculty put in a tremendous amount of effort. The intervention was maintained for the entire year, the staff agreeing at the end of 90

days that the changes had been well worth the effort. An extended year-end report on the progress of the intervention in this school by the author is included as Appendix B.

School G

Ultimately, this building was to become the most successful in the entire intervention. The principal here had a strong working relationship with his staff. The faculty was considered one of the best in the district. The building, relatively new, had been designed as a school without walls and the general orientation of the staff and principal was consistent with the open school, humanistic-affective movement of the late 1960s and 1970s. But despite all the good feelings, achievement in this primary school remained low.

Following the administrative retreat, the principal read the entire set of modules on school climate (revised over the summer of 1978). His reading convinced him that the higher expectations, emphasis on the basic skills, and instructional practices in the program were the answer to his school's low achievement. But he also believed the module on the principal: instructional leadership makes the difference. The program should be implemented by the principal with his own staff. He would actively consult with the MSU staff on procedures and directions, but he presented the inservice on the modules to his staff himself.

This principal also worked closely with his Title I Instructional Leader and Article III (Michigan Compensatory Education Program) reading teacher. The project apparently became a cooperative endeavor between the principal, these two staff leaders, and the rest of the

faculty. During the first year, the staff was introduced to about half of the modules. Plans were made to intensify the program for the next (1979-80) year. A major problem, the staff's resistance to switching from homogeneously grouped classrooms to heterogeneous classes, was addressed during the first year. A part of the planning for the second year included the staff's agreement to try heterogeneous grouping. As the principal noted at the end of the year, "We've made some progress, but we've got a long way to go."

School H

The principal in this building was to become the CRACKLE Supervisor for the three-year Title IV-C grant period, 1979-80, 1980-81, 1981-82. The following perceptions are gleaned from numerous conversations between him and the author throughout the intervention. He had a reputation throughout the district as one of the strongest principals. He was not originally in favor of the SCAT project. His differences with the program were both philosophical and stylistic. His own background was strongly humanistic; he also strongly believed that individual differences between students were such that good students needed to be challenged with advanced work and classes. His perception of the SCAT program was that it was too academic (not enough concern for feelings and not enough practical examples or explanations), it neglected better students in its emphasis that all students can learn (only those students below grade level were receiving attention), and the style of the two senior MSU staff members was such that they were difficult for practitioners to work with.

The change in this man over the course of the program (now one of the authors of the published version of the modules [Brookover et al., 1982]) is a striking feature of the intervention. At the same time, the subsequent changes and increased specificity in the modules in their published form clearly also shows his influence on the MSU staff. The administrative retreat was the first opportunity for actual interaction between building principals and MSU staff. During these sessions the discussion and explanation of concepts such as mastery learning, self-concept and achievement, grouping, and other aspects of the program convinced him that the program need not interfere with his continuing concern for affective goals and the welfare of better students, yet would be of definite help in increasing achievement of below average and average students. The author's own observation suggests that the closer personal contact at the retreat also helped counter negative perceptions of the MSU staff.

Following the retreat, this principal, with his staff, began to implement the mastery learning strategy. During October the MSU consultants received a request for the set of modules and an inservice presentation on the first three of the modules, particularly on how group learning games relate to school climate and mastery learning. This inservice, and a follow-up meeting with the staff to facilitate the academic group games, was the only MSU contact with the faculty. But the principal and his staff continued to work on the mastery learning, group games, and other facets of the program as the year progressed.

School I

This school is another case in which the principal took the lead in implementing the program himself. His contacts with the MSU Project Manager led to partial implementation of the SCAT program. Certain of the concepts in the program, e.g., time-on-task and higher expectations for all students, had been a long-time concern for this principal. Working with a few cooperative staff members, this principal started the team learning games and parts of the remaining program. Although this effort continued through the year, there is no evidence that the full staff was ever engaged in complete inservice or implementation of the entire program.

School J

The intervention in this building lasted from October 2 to December 4. During the administrative retreat, the principal, a black woman near retirement, had been one of the most enthused and persistent about becoming a SCAT project school. However, retrospection indicates that the staff's involvement was less than enthusiastic. Apparently the staff believed that the District was mandating some school improvement program. When they found out later that no formal improvement effort was actually required (in contrast to the Superintendent's strong message at the fall retreat), what little commitment had originally been present soon faded. The principal offered no support for the program, and little leadership in trying to effect staff participation in the instructional activities. Inservice sessions, grade level meetings, and actual implementation of project activities were consistently put off. At one staff meeting, the

faculty informed the MSU consultant that they had no responsibility for seeing that children mastered basic skills; their teaching only required that they present the content. Learning it or not was up to the pupils. These attitudinal factors and several instances of not following the Consultation Agreement led to the termination of the Agreement by the MSU staff. The principal informed the MSU consultants that the staff had decided to develop individual programs for the basic skills with the help of district curriculum consultants.

Schools K, L, and M

None of these three became involved in the intervention. But the principals in all three buildings were extremely interested in the project. Following the retreat, these principals held several discussions with MSU consultants and with their staffs regarding participation. In the end these buildings opted to continue on their own. But sets of modules were available to these buildings. While these schools must be counted in the non-intervention group, their interest, discussions, presence of the modules, and general behavior indicate a status somewhat different from the remaining non-participant schools which evidenced no interest, and even antipathy in some cases, to the SCAT program. Although there is no way of knowing from the data at hand, it would not seem unreasonable to suspect that these three schools would be the most likely candidates for non-involvement schools with a significant LoU, as described above in the research of Hall and Loucks (1977).

The brief summaries just given do not do justice to the complexity of individual and organizational dynamics. But despite limitations on

space, these sketches do illustrate the variance in the patterns of flux of an innovation in an urban district. However, as outlined in Chapter II, the purpose of theory in general is to not only describe, but to explain and predict. These last two functions require analysis of the conditions which impact on the organizational and individual decisions in a given school. In other words, why was the intervention terminated in Schools B, C, and J, and why was the intervention seemingly more successful in some schools than others. These and related questions require study of factors within the organization such as leadership and group norms. But factors external to an organization and the relation of the organization to these wider forces are also necessary to understanding organizational behavior and change. The section above on Exigencies and Processes of Change addressed some of these factors from both an internal and external perspective. The section below stresses particularly forces external to the organization.

The Organizational Environment of the School

Certain factors outside of the social system impinge on the school itself. No two schools respond in precisely the same manner to these forces. Two reasons help explain this. First, the given structural characteristics of schools vary. Differences in some or all of such variables as age of students, bussing versus exempt attendance patterns, size, age of faculty, SES and racial composition of the neighborhood, and other factors combine to produce a social system unique for each school. Second, the actual reality of the external environment will be perceived in somewhat different terms by the members of any given

school. The combination of the unique features of the social system and differing perceptions of the environment is sufficient to produce differing reactions to the environment from school to school.

Yet, despite these differences, schools possess strong similarities of function, structure, and behavior. These similarities in effect define a behavioral range of actual and perceived limits to permissible actions within the commonly accepted milieu of education. Each of the following are external forces which are uniquely related to the Pontiac intervention.

Testing Programs

The existence of the statewide Michigan Educational Assessment Program (MEAP) and Pontiac's own basic skills testing program (SNAP), both described in Chapter IV, have had a marked influence on school behavior. Faculty awareness of the level of achievement for all students, and consequent focus of the staff on the performance of the students in the school, is raised simply because of the yearly assessment tests. As noted above, the media have played a large part by providing the public with this same information. Not to be overlooked is the part of policy makers at local, state, and federal levels in increasing the emphasis on performance assessment. In short, the influence and expectations of various outside interest groups--media, public, and policy makers--are mediated to the schools at least in part through testing programs.

The Performance of the Superintendent

The discussion above has already noted some political realities that marked the arrival of the new Superintendent. But the duties of

the Superintendent include educational leadership as well as political overtones. The description of School J, terminated from the program in December, exemplifies this leadership. The new Superintendent quickly established the style and reputation of a dynamic idealist who had little time for the detail of planning and follow through. This style of leadership can be very effective if it is combined with immediate subordinates who have exceptional executive skills for planning and managing. In this case, these abilities in the line subordinates were perceived as lacking. The Superintendent's commitments to excellence and increased achievement were perceived as being ineffectively translated into performance accountability and reward structures which were consistent with his stated goals. Not unrelated to this perception, in all fairness, was the continuing financial crisis and the overwhelming preoccupation with campaigns to pass the succession of nine millage attempts, one aspect of which was how to deal with a significant residual anti-bussing vote. Yet regardless of the exigencies faced by the central office staff, there is evidence that the perceived lack of follow-through on various commitments had negative impact on program results. That the financial crisis was real and that it had its own direct effect on academic programs, e.g., the half-day sessions at the beginning of 1979-80, does not alter the separate effect of the perceived deficit in educational leadership.

The Impact of the MSU Consultants

In addition to the overall effect of the SCAT program, there is the effect on a given school of the continuing presence and

interactions of the MSU consultants assigned to that building. Except for the schools where the principal managed the intervention, thus limiting contact with the MSU consultants to the principal, this factor can have significant consequences for the eventual outcome of the program.

There is a strong tendency to equate success or failure in a school with the particular skills and effectiveness of the consultant assigned to that school. In fact, comparisons of this type were made, albeit "unofficially," especially in perceptions of the on-site consultants. These reactions surfaced in the school district and among the MSU staff, despite "official" downplaying of the significance of this point. The situation was exacerbated by the similar status of the three primary on-site consultants, all doctoral students under Dr. Brookover.

Despite the difficulty of maintaining objectivity on this topic, given the author's status as one of the three change agents, there is merit in considering this point. In the first place, the tendency to personalize role behavior suggests a commonplace inability to separate role behavior from personality. This viewpoint is clearly more idiographic than nomothetic (Harris, 1968), a position rejected by this study (see Chapter II).

Second, studies and analyses of change agents (e.g., Havelock & Havelock, 1973; Rogers & Shoemaker, 1971) have identified patterns of behavior which appear to maximize the likelihood of a successful intervention. To the extent that the consultants differed in this role behavior, there could be some association with program outcomes. However, research on the behavior of principals has identified certain

global patterns, goals, functions, and expectations that correlate with success, but the same research has not been able to associate any pattern of specific day-to-day actions with outcomes. In other words, effective principals do certain things, but there are apparently numerous ways in which to accomplish those things. Different principals do them in different ways. The parallel would seem to hold for change agents, but the data available in this study do not permit comparison of change agent behavior. Further studies might profitably consider this factor in the preparation of evaluation design.

Third, interpersonal communication skills can become one of the factors which affects outcomes. But rather than perceiving these skills as an aspect of personality, an idiographic tendency, Havelock and Havelock (1973) suggest that effective skills in this area are one of the tools of the change agent role and that these skills can be learned. This emphasis on role behavior clearly represents a shift toward a nomothetic, generalizing perspective, thus further discrediting the tendency to personalize the change agent's role.

Fourth, the contextual setting of the school varies sufficiently that the situation which confronts the change agent/consultant will not be the same in any two instances. Given this variability, equating success or failure with the performance of a change agent makes little sense. One result of this assumption would be that any two social systems in which a given change agent worked would have equal success, a condition which obviously does not hold.

Fifth, despite the four preceding paragraphs, it is likely that the role of the change agent makes a difference to some extent. An interaction effect between the setting, the intervention, and the

change agent may be likely. In the current intervention there is evidence that context may be the major factor. Reaction to the individual members of the MSU staff varied widely from school to school and across individuals. The author, for example, experienced reactions ranging from knight-in-shining-armor to reason-for-failure in two different schools, and even greater extremes within the same building.

On the other hand, similar experiences in the schools across change agents were noted. These similarities appear to be the result of common role behavior rather than individual personality. First, in several of the schools, the change agent was perceived by the principal as a threat to his/her leadership. In fact, in at least two schools, the change agent did take over considerable leadership behavior, and it is likely that some inroads in this area occurred in all cases. Perhaps the real issue here is what happens to the social system the next year when the change agent is not present and the principal assumes (or not) responsibilities performed by the change agent. Unfortunately, data are not available to address this question.

A second common problem for change agents was cooptation. Cooptation can be conceived of as a two-way process. The principal's view (perceived and/or actual) of the change agent taking over leadership functions is one side. The flip side is the possibility that the change agent is coopted by the faculty. This is the classic anthropological problem of researchers "going native," taking on the values of the group to be studied (or changed in this instance). Numerous MSU staff meetings dealt with the extent to which the on-site consultants had taken on the values of their schools and lost sight of the goals of the project and the ability to objectively assess the

behavior in their building. Again, sufficient data to assess the extent of this process is not available.

In sum, the tendency to personalize the effects of role behavior appears contrary to evidence, i.e., in the instances noted, the behavior was associated with all change agents rather than with individual personalities. Future research could profitably address this whole area of behavior.

The topics described above represent some of the external factors that had an influence on the course of the intervention in Pontiac. Space precludes an exhaustive review; however, one factor that should be addressed is the existence of outside funding for intervention programs. That topic is taken up next in the description of the third year of the project.

The Third Year, 1979-80

The first two years of the school learning climate project had been funded by a combination of general funds from the district and compensatory education money. As the second year progressed, two issues gained foremost priority. First, how could the program be expanded to the other schools in the district? Second, how could the MSU staff give up leadership and direction of the project to the district, i.e., could the district take ownership of the program and thus prevent the fate of so many innovations: after a promising beginning, initial support is withdrawn with resulting deterioration and decay of most, if not all, of the conceptual and behavioral changes that had been achieved. Thus, preventing a return to the previous status quo, a pattern often repeated in education (see Goodlad, 1975;

Morrish, 1976) became the focus of planning for the upcoming year.

The eventual solution was writing a Title IV-C grant proposal for innovative programs funded through the Michigan Department of Education. This proposal, jointly written by Pontiac Schools and MSU staff, set up a procedure for administering and directing the SCAT program by Pontiac personnel, with consultative advice from MSU. The school climate project, renamed CRACKLE to complement the Superintendent's P.O.P. project and the basic skills testing program (SNAP) was funded. CRACKLE originally provided for a supervisor, three clerical and technical personnel, and two MSU graduate assistantships for continuing assistance during the takeover by the Pontiac Schools. The grant was for two years with a third-year option depending on overall progress and performance. The principal from School H was named supervisor of the project, and two of the on-site change agents who had been with the program from the beginning (the author and the consultant from Schools D and E) assumed the MSU consultation role. Dr. Brookover maintained indirect contact and continued to mediate between the State Board of Education, Pontiac, and MSU.

The CRACKLE program was to begin the process of inservice for the entire district over the concepts and instructional practices in the modules. In addition, those schools previously involved were to continue to receive support, primarily through the concepts of cluster inservice. The elementary schools were divided into three support clusters. Principals and a CRACKLE Representative from the staff of each school were to attend a monthly CRACKLE Seminar on one of the concepts of the program, e.g., mastery learning or time-on-task. The principal and CRACKLE Representative were then to conduct an inservice

workshop over that concept for their respective faculties, utilizing the materials prepared by the CRACKLE Staff and discussed at the monthly cluster meeting. In this manner all of the concepts and modules would be covered during the year, providing discussion and review for previously involved schools and inservice for the other schools. In addition, a couple of buildings were to receive intensive assistance from the CRACKLE Staff as demonstration schools for purposes of dissemination.

The program was also to be expanded to the secondary level. One of the junior highs and the Emergency School Aid Act (ESAA) staff had shown interest during 1978-79 but was not detailed here because of the limitation of the current study to the elementary level.

Plans were made during summer, 1979, to manage this effort. But that fall a program review by new Title IV-C Michigan Department of Education personnel resulted in scaling down the project. The reduced emphasis included completely rewriting the modules and extensive planning for a limited but more intense pilot program for three selected schools in 1980-81. The format for monthly CRACKLE Seminars was to provide the district-wide awareness preparatory to the pilot program the next year. The project was also extended for a third year, 1981-82, the focus of which was to be dissemination to other Pontiac schools, other districts in Michigan, and an exportable version of the school learning climate modules. A copy of the Project Abstract and the CRACKLE Reorganization are attached as Appendix C.

A final phase of the program involved the development of two instruments to aid in evaluation of programs: a School Learning Climate Assessment Instrument which could be used to establish a profile of

the strengths and weaknesses of the learning climate in a given school, and a LoU instrument to determine the actual extent of implementation of the various aspects of the program by the staff in a school. Work on the development of both of these instruments is a continuing research priority.

This sketch outlines the general direction of the new CRACKLE program. Despite some unexpected circumstances, the monthly CRACKLE Seminars for the cluster schools continued. As in previous years, circumstances outside the environment of the schools create forces which impinge on the organization and its members. An accounting of some of these forces during the third year follows. The thrust of this section is on factors which interfere with the accomplishment of program goals, generally through unintended or unrecognized outcomes (see Campbell, 1982, for theoretical treatment of latent and manifest functions).

Goals, Impediments, and Outcomes

As indicated above, the primary purpose of the Title IV-C grant was to transfer ownership and direction of the school learning climate program from MSU to Pontiac as a means of establishing the program throughout the district. Not surprisingly, the shift from university to school district personnel brought about some shift in emphasis in how the program was to be organized. A major concern of the new CRACKLE Supervisor was the lack of specificity of the program. Planning during the summer and fall placed heavy emphasis on translating the conceptual focus of the SCAT modules into more detailed programmatic guidelines and activities on "how to" implement the ideas

at the classroom level. Both materials and discussions at the CRACKLE Seminars for cluster schools reflected this direction (see representative CRACKLE materials in Appendix E). The major rewrite of the modules the following spring and summer of 1980 likewise took this course.

But if the new CRACKLE Supervisor influenced the programmatic content of the program, the socializing presence of the two MSU consultants also had noticeable results. The humanistic, affective concerns of this man, noted above under School H, are exemplified in a model of school climate (Fox et al., 1973) which includes a heavy emphasis on the satisfaction/affective dimension of school climate. During one of the first planning meetings during the summer of 1979, the new CRACKLE Supervisor produced a copy of this model (see attached copies, Appendix D). Several discussions with the two MSU consultants, over a period of months, revolved around the issue of the distinction between school learning climate, the satisfaction dimension of school climate, and the relationship of these two dimensions to achievement.

The movement of the supervisor toward a greater emphasis on academic goals and the factors (the learning climate) which correlate with achievement is observable via the continuing informal interactions with the MSU consultants through the year and the materials coming out of the CRACKLE office. Both present evidence of a gradual change of emphasis in values. Although causal attribution of the source of this change is not possible, it can be noted that socialization of the Supervisor toward a stronger academic focus by the two MSU consultants was a strategy discussed at numerous MSU staff meetings.

The process of assuming ownership of a program involves internalizing the values of the program by individuals throughout the organization. Obviously key individuals such as the CRACKLE supervisor are vital to the long-term adoption and stability of an innovation. So too is the conversion of large numbers of lower level staff members throughout the district. Subjective observations indicate considerable success, and for some individuals even dramatic turnaround, with respect to the adoption and support of the values represented by the school learning climate intervention. However, many individuals in the district have not accepted or adopted the precepts of the intervention. Some impediments to change toward the belief that virtually all students can achieve grade level mastery can be identified in the organizational structures and policies noted below.

The Effects of Grantsmanship

Kirst (1979) and Kent (1979) suggest that the funds available from grants can be seen in two lights. The first is a problem-solving effort to improve the recipient agency by utilizing the funds to produce, implement, or institutionalize a better program; the second is an opportunistic means of obtaining more resources for the district in terms of money, jobs, or even reputation. As in all ideal types, the truth in this case lies somewhere between these extremes. One informant suggested that the original MSU program of school learning climate and the project personnel, especially the CRACKLE Supervisor, were sincerely interested in raising achievement. However, the CRACKLE program became somewhat of a political football, especially

as viewed by the top administrators of the district. This observation is consistent with the earlier description of the confusion of priorities between P.O.P. and SCAT.

Furthermore, the quest for further grants continues. A considerable number of central office and evaluation unit staff depend on soft money. As new grants are written, the goals and energies of these personnel shift in accordance with the new proposal. One result of this is a continuing succession of new programs. Professional staff quickly become inured to these temporary goals, reacting in a manner, "This too shall pass." School C exemplifies this situation; the staff had been through a series of innovations, none of which had lasted. A self-concept program in the early 1970s had even been directed by Dr. Brookover. Staff members there were open about their predictions that the district would not stick with this latest panacea. The extent of this perception throughout the district is difficult to gauge. But this feeling, combined with the reality of pressures to ensure perpetuation of an organization, especially during declining enrollments and eroding tax support, will result in efforts to bring in more resources (see Pincus, 1974).

Structuring the Organization

The distinction and conflict between line and staff positions have been widely discussed (e.g., Etzioni, 1964; Presthus, 1978). Various stages in the CRACKLE program, e.g., writing the proposal, subsequent restructuring of line-staff responsibilities in the district, and continued posturing by CRACKLE staff over how to work around those line-staff limitations, demonstrated the importance of how the CRACKLE

program was defined and where it was placed in the district hierarchy. The original proposal was to have CRACKLE as a separate program that reported directly to the Deputy Superintendent. That turned out to be politically unfeasible. In the proposal that was accepted, the CRACKLE Supervisor and program were under the Assistant Superintendent for Instruction. Later the status of the program was downgraded even further when CRACKLE was placed under the Director of Secondary Education who himself had a staff position that reported to the Assistant Superintendent.

The shifts just noted indicate the priority of district politics over the realization of program goals. Clearly the CRACKLE Supervisor lost authority in the hierarchy in the sequence of events. This downgrading of program level and the program's staff rather than line status can be seen as major factors in the difficulty of gaining wider acceptance and more lasting institutionalization of the intervention: the program was simply not perceived as a high priority of the three top administrators.

In particular the Deputy Superintendent, who had responsibility for implementation of programmatic detail and to whom principals reported in the line of authority, never fully committed himself to the CRACKLE project. Likewise, despite the Superintendent's charismatic performance, most of the district perceived that his real interest was with P.O.P. rather than CRACKLE. These factors, combined with the continuing financial exigency, led to perceptions throughout the district that the CRACKLE program was not high priority with the top administration. This low perceived priority plagued the CRACKLE Supervisor in his efforts to implement and expand the program

throughout the intervention.

Program Discontinuities

One of the most serious problems encountered in the intervention, especially during the efforts to establish CRACKLE throughout the district, was the instability of the environment. A comprehensive innovation is difficult to implement fully under the best of conditions. Pontiac's degree of stability was far lower than normal, primarily for two reasons. First, the financial crisis had several disruptive effects. The six weeks of half-day sessions for elementary schools at the start of the 1979-80 year has already been noted. Teacher lay-offs due to this problem and declining enrollments led to changes in the composition of staff within buildings according to seniority rules. District morale plummeted as concern in many staffs focused on job security, detracting from academic goals. A related problem, particularly in junior and senior highs was associated with the elimination of music and other specialty positions. The result was many individuals teaching out of their expertise, often with students of a different age level. Loss of content expertise and increasing problems with discipline occurred as low seniority staff possessing these content skills were bumped.

A second factor stemmed from the administrative policy of rotating principals. Beginning in 1979-80, principals in selected schools were shifted. Although this can be a means of stimulating change or providing relief for principals experiencing hostile staff relations, an unintended result can be disruption of cooperative principal-staff efforts in a fledgling intervention before it has

become fully institutionalized. This point is illustrated in a brief update on the various intervention schools for 1979-80.

School A

The female principal from School F was transferred to this school. The contrast between the easygoing but politically smooth black principal who had utilized rewards and trade-offs to promote cooperation and get what he wanted versus the aggressive academic push and business-like personality of the new principal created a difficult adjustment for the staff. The new principal was convinced that the old principal was so circumspect about alienating his staff that he had never really had an inservice over the modules, despite the fact that the modules had been left in the building for the staff to "cover themselves." Thus two years after the initial meeting in which the MSU consultants were informed that the "volunteered" staff actually wanted no part of the on-site, intensive intervention, the new principal set up a complete inservice over the modules, utilizing the services of the new Director of Elementary Education, a former black female principal who the new School A principal greatly respected, the two MSU-CRACKLE consultants, and a member of the ESAA staff. This last person covered the module on mastery learning, consistent with ESAA's program emphasis on this topic at the secondary level. The only contact that the MSU staff had with the staff of School A was at the half-day inservice the two consultants conducted. The lack of familiarity with the program exhibited by the teachers at that meeting suggests that the new principal's assessment of the low level of prior involvement of this faculty with the intervention was accurate.

On the other hand, the heightened tensions in the relations with the new principal had produced some intransigence. This staff apparently valued their autonomy, and attempts to induce change, regardless of the prospects of higher achievement, were resisted strongly. The effects of the principal reassignment in this case are difficult to assess. This school is evidence, however, that a principal's commitment to the concepts and the program can result in continuing the intervention in a new school. The new principal had recovered from the health problems noted for School F the year before. What is less apparent is the extent to which this principal was rewarded or recognized by the central office for the risks she incurred by pushing for change and stirring up discontent among the staff.

School B

The same principal remained; there is no indication of a change in attitude toward the program. The CRACKLE Supervisor, however, was on much better terms with the principal and the animosity due to the "abrasiveness" of the MSU staff may have been softened on that count.

School C

A principal from a non-intervention school was transferred here. Informal contacts suggest that this man, originally one of the most vocal opponents to the program, had changed his attitudes considerably and was cooperatively carrying out the monthly CRACKLE workshop activities. Several factors apparently were influential. His wife was the Article III Compensatory Reading Teacher in School G, which had such a positive experience the year before in the principal-guided intervention. The new principal's former school had been one of the lowest

achieving primary schools, despite having some of the highest income children in the district. He also got along well with and respected the new CRACKLE Supervisor. Finally, he was an intelligent man who read considerably. One of the MSU consultants had suggested some readings (which he followed up on) appropos the problems of low achievement during a luncheon meeting. It could also be that Bloom's (1978) "new leaf" phenomenon, i.e., when students change to a new school and frequently are able to establish improved performance by leaving behind old reputations, also applies to principals.

The new principal at School C was aided by an apparent change in attitude of the Instructional Leader (IL). This individual had originally been a vocal proponent of grouping by ability because of a strong belief in individual differences. She had been uncooperative and apparently had developed a dislike for both Dr. Brookover and the original on-site consultant in the first year. CRACKLE, however, reduced staff contact with the MSU consultants to a minimum. In addition, the CRACKLE format called for special meetings with intervention schools from the first two years. These meetings were designed to tap the "experience" of these schools so that it could be shared with non-intervention schools. This setting permitted these IL's to "shine," and this particular individual responded positively to this opportunity to share her "expertise." For these or other reasons, this IL became an asset to the program in School C.

Schools D and E

No changes were noted. The intervention and CRACKLE Seminars apparently continued as scheduled; however, no contact or data for

these schools was available to substantiate actual LoU.

School F

The principal from the previous year transferred to School A. The new principal had been the principal of this building once before in 1976-77. Although he had been well-liked by the staff, his instructional leadership and concern for achievement were perceived by the staff to be totally lacking. This assessment was generally perceived across the district. Predictably, the new principal showed little interest in the program. Informal leadership among the staff that had been so active the previous year was also missing. The MSU consultant now had no contact with the school. The informal faculty leader was ill for an extended period of time at the beginning of the year. A couple of key staff had been transferred to other buildings and another was among those pink-slipped until full-day sessions resumed six weeks into the year. In short, despite the efforts of a few staff, the cohesiveness of the faculty's commitment to the program the year before was decimated by a variety of discontinuities. This school is a classic example of an intervention that did not last because it was not sufficiently embedded in the structures and regularities (Sarason, 1971) of the school to withstand the changes in staff, leadership, and external forces. Some efforts to revive the program following the return to full days were made, but the school apparently did not attain its former level of intensity.

School G

The principal-led intervention continued full force. The switch to heterogeneous classroom assignment was made. The remainder of the

modules were covered by the staff. Informal contacts indicate that this school became the most actively involved in the CRACKLE program.

Although the close tie between the CRACKLE Supervisor and this principal perhaps was one factor in the high LoU of this school, another point should be considered.

In the other intervention schools, a strong impetus for the involvement during the first year was the presence of the outside consultant. When that consultant was withdrawn in the subsequent year, a social role that was a part of the initial intervention was missing, no matter how strong the principal's leadership. The extreme effects of this occurred in School F, but this role-loss existed in all of the on-site consultant schools. The social structure had been altered by this loss. The effects of the external change agent's role is a fertile ground for further research. Studies could profitably focus on the diffusion of leadership and role-loss as negative factors that have received little attention in the literature.

School H

The old principal became the new CRACKLE Supervisor. There is little evidence to suggest that the new principal actively continued the program.

School I

The old principal was transferred to a non-intervention school. Again, the new principal showed little interest in the program. The old principal apparently actively engaged the staff in his new school in the CRACKLE Seminars and activities, although no data are available on the extent of actual implementation. The transfer of principals in

this case was a trade-off: the languishing of the program in School I versus initiation of CRACKLE in a previously uninvolved school.

School J

The principal here retired. She was replaced by the principal from School K. The new principal was one of those who had been extremely interested in the program the year before but had not been able to convince his staff to participate in the intensive intervention. Now with the format of the CRACKLE Seminars and monthly workshops, including a CRACKLE Teacher Representative elected from each building, the new principal apparently was actively introducing his staff to the monthly workshop materials and activities. There is no available evidence on the response of the staff, which had been terminated from the program in December of the previous year for lack of participation and hostile attitudes. However, strong leader advocacy of the program apparently was a major factor in convincing the staff to continue the intervention that they had reneged on after two months the previous year.

School K

This staff had opted not to become involved in the intensive intervention the previous year, despite the previous principal's interest. But their achievement gains had been among the highest in the district for 1978-79. The new principal for 1979-80 transferred from a non-intervention school; now, with the format of the monthly CRACKLE Seminars and workshops and his positive relationship with the new CRACKLE Supervisor, this principal facilitated the staff's participation in CRACKLE activities. Available data do not permit

analysis of LoU.

School L

This principal and staff had also considered but finally rejected intensive intervention in the project the previous year, partly because the school already was one of the highest achieving in the district and because the principal's philosophy and leadership were already largely consistent with the school learning climate program. The new CRACKLE Supervisor was a close friend of this principal. That factor and the CRACKLE Seminar format led to much increased participation in the CRACKLE activities during 1979-80.

School M

Again, this was a school in which the program had been strongly considered in 1978-79 because of the interest of the principal, yet had not become a program participant. Likewise, this school had produced one of the top achievement gains in the previous year. So too this school now participated in the CRACKLE activities and workshops based on the information and materials from the monthly CRACKLE Seminars for the cluster schools. LoU data are not available for either School L or School M.

The 1979-80 year can be summarized by stating that the new CRACKLE program was born amidst political struggles and district-wide upheavals in the external environment. The monthly CRACKLE Seminars on the concepts and modules, plus the format for monthly follow-up workshops and activities in each school led by the principal and CRACKLE Teacher Representative, provided extensive exposure for the first time to many of the staffs of non-intervention schools. Yet the program was still

voluntary and a wide range of enthusiasm and level of participation existed across schools. The perceived lack of support by some of the top administrators in the district was problematic to facilitating greater participation in the schools; program status as staff versus line authority precluded the use of effective compliance procedures by the CRACKLE Supervisor.

The results of the Title IV-C reorganization and concomitant changes for the following year are described in the last section of this narrative.

The Fourth Year, 1980-81

Description of this year will be succinct for two reasons. First, the author was no longer actively involved in the program and has had only intermittent contact with the school district. Second, the CRACKLE reorganization downsized the scope of the intervention. Rather than spreading resources across all of the schools, the program was to concentrate on three pilot schools which were to become dissemination models for the district and the state. Of the three schools, one each was to come from elementary, junior high, and secondary. The limitation of this study to the elementary level narrows to one the schools to be described.

For the first time in the history of the intervention, the participating schools were chosen during the preceding year and preschool inservice was held in August. The intervention was a combination of the approach used by the principal of School G, who had conducted the inservice with his staff himself while consulting with the MSU staff, and the monthly CRACKLE Seminars of the previous year.

Each school identified a Building Leadership Team (BLT) consisting of the principal, who was the leader, and several key personnel such as assistant principal and department chairpersons in junior and senior high and grade level team leaders or Title I Instructional Leaders in elementary. These three BLT's went through an intensive two-day workshop in August over the newly revised, activity-specific modules. The two MSU consultants participated in this workshop, their last formal contact with the CRACKLE program. Occasional contact with Dr. Brookover and other MSU staff now revolved around continued development of the climate assessment instruments, but ownership of the programmatic intervention was now totally under the direction of the CRACKLE Supervisor.

Following the BLT inservice, each of the BLT's conducted their own preschool inservice for the entire school staff. The CRACKLE Supervisor assisted with but did not run these staff inservice meetings. The BLT in each school then oversaw the implementation of the program and activities for the following month. This cycle was repeated as the CRACKLE Supervisor provided a monthly half-day inservice for the BLT's who then passed this information on to their respective faculty in a staff meeting. Periodic department or grade level meetings were also built into the project to encourage cooperative planning and action by the teachers who were implementing the program. Throughout the year the CRACKLE Supervisor continued both formal and informal contact with the BLT's, especially the principals, in order to encourage complete LoU. A complete description of this structural format for implementing the school learning climate/effective schools model is given in the published version of the

modules (Brookover et al., 1982).

The elementary school chosen for this intensive pilot status was School G. In large measure, this year was utilized to further understanding and increase LoU of the concepts and practices of the school learning climate program. After two years, this staff was already familiar with and committed to the program. But the complete embedding of the program into the structure of the school and the ongoing routines and regularities of the staff had not, in all probability, yet occurred. This third year of involvement for this school provided the opportunity for long-term institutionalization of the intervention.

One further concern of the 1980-81 year is the status of the other intervention schools, once official CRACKLE support and encouragement were withdrawn. Given the numerous problems outlined in this narrative, there is reason to suspect that few if any of the schools had reached a LoU and degree of institutionalization that was sufficient to sustain them during this year, especially given the lack of support and recognition for either the program or higher school achievement by the central office in terms of clearly stated rewards. However, observational data on the subject are not available and the question remains problematic.

Analysis of the Data

The preceding narrative provides an overall picture of the Pontiac intervention with special attention given to internal and external factors which affect the process of change. Structures, policies, political forces, personal style, role behavior, and processes of change are among the topics discussed. A brief chronological sketch

of the various project schools is also included.

But the narrative focuses on description; the chronology merely presents and discusses the factors that seemingly were critical to the outcome of the project. No effort was made to assess program outcomes or to relate the events and processes of the school learning climate program to those outcomes.

This section will address these issues. As noted in Chapter IV, the case study format of this thesis does not utilize formal hypotheses. Given the confounding of variables, small sample size, and developmental nature of the intervention, five research questions were posed in order to focus on the processes and outcomes associated with the implementation of the SCAT/CRACKLE project. The analysis below utilizes data and resources from the course of the intervention. But all of this analysis remains tentative and associational; causal attributions are not possible in this study.

Each of the five research questions will be addressed in turn.

Research Question #I

With respect to policy and goals in the district, what processes and efforts of change can be attributed to the intervention program?

- A. Have any changes in policy and goals occurred in the district since 1977?
- B. If I-A occurred, can these changes be attributed to the intervention program

A review of the policies and practices in Pontiac with respect to the achievement of basic skills conducted during the fall of 1977 (Brookover et al., Note 3) reveals several inconsistencies. The review focused on four general areas:

1. The goals, objectives, and expectations of the school system with particular reference to basic skill objectives.
2. The evaluation of schools.
3. The use of tests in evaluation.
4. Compensatory education.

Several findings from that review suggest confusion on the actual meaning of the policies and a wide discrepancy in how these policies were carried out. First, minimal grade level objectives as a goal for all students is not clearly stated. The policies emphasize both individual standards due to differences in abilities and common goals in the basic skills for all students. Likewise, the evaluation of students is unclear as to whether all students are expected to learn the basic skills or whether some, such as compensatory education pupils, are to be excused.

Second, evaluation of skills is similarly confused. At times policies seem to direct principals to evaluate the school in terms of program effectiveness in the basic skills. Yet no specific guidelines for doing so are offered. Some reluctance to use basic skills achievement for the evaluation of schools apparently stems from the confusion between evaluating individual teachers for performance review based on achievement results versus evaluating the school and staff collectively on building level achievement. The sensitive political nature of the individual accountability model and the confusion of this issue with school/program evaluation results in the complete lack of any systematic criteria for assessing school performance.

Third, some confusion also exists over the actual use to be made of assessment data for diagnostic planning to improve the school's

instructional program. Again, no specific policy defines appropriate action in this area.

Finally, goals for compensatory education students are not clearly defined by policy. In practice, goals vary for different pupils. Only a few administrators suggested that a year's growth for these students was an appropriate goal, and no administrators stated that the goal was for these students to catch up to grade level, which would be consistent with the original intent of the federal and state title programs. The "Summary of Recommendations Concerning Basic Skills Policies and Practices to the Pontiac Board of Education" is attached in Appendix F. These ten recommendations reflect the inconsistencies and practices at the beginning of the intervention and the attempt by the MSU staff to improve both policy and practice in the area.

With respect to changes, two events are relevant. First, in the summer of 1979 the new CRACKLE Supervisor prepared four "Priorities for Instruction" that responded directly to the concerns identified above. These were submitted to the Board and adopted as official Board Policy in 1979. A copy of these Priorities is attached in Appendix F.

Second, a follow-up interview of central office administrators regarding practices relevant to basic skills objectives was conducted by the MSU staff in 1980. The following changes are noted. The proportion of administrators who gave basic skill achievement high priority increased from one-fourth in 1977 to three-fourths. However, the commitment to the mastery of basic skills by all students was not as high. Although a significant shift has occurred, a small minority of these administrators still does not believe that common objectives

for all students are appropriate. These skeptical individuals occupy key positions in the administrative hierarchy. Their lack of support in this area gives credence to the narrative on this point: support for and rewards appropriate to the accountability of each school for basic skill achievement is mixed at the upper level of the administration. The 1980 interviews suggest a continuing reluctance to accept or implement a clear policy on school evaluation based on mastery of basic skills objectives.

Practices regarding test data have changed. Practice in this area is now much more consistent with the recommended policy. One aspect of testing policy has to do with the exclusion of certain students from the basic skills testing. In 1977 it was common practice to exclude from district testing students who "would not be able to perform adequately." Considerable discrepancy existed between schools on the number and definition of which students were excluded, but minorities, males, and compensatory program students were those most frequently excluded. This practice, reflecting the district's lack of accountability for the performance of all children, has been eliminated; the testing program now includes these children in basic skills assessment.

Finally, regarding compensatory education, some change has also occurred. Objectives for these students are now generally accepted to be the same as for other students. However, several administrators still define the appropriate goals for these students as a year's growth for each year in the program. By definition, these students are below grade level; they will not catch up at this rate of progress. These administrators still do not accept the intent of these programs

as providing assistance sufficient to attain grade level equivalency.

Despite shortcomings in the full attainment of the recommendations of the MSU staff (Brookover et al., Note 3), the above data suggest a significant movement toward these goals over the course of the intervention.

The final question to be asked is whether these changes can be associated with SCAT/CRACKLE. The evidence just noted suggests some impact due to the intervention. The awareness created by the 1978 report to the board, the media articles on the SCAT program, the CRACKLE Supervisor's submission of Instructional Priorities for Board approval, and continuing efforts throughout the program to focus the school district on the priority goal of mastery in the basic skills for all students can be seen as contributing, in some cases directly, to these changes. But confounding influences exist. In 1977 the majority black school board directed the superintendent to seek university help for the problem of low achievement and the discrepancy between black and white levels of mastery. The new black superintendent's stress on achievement for all students, the P.O.P. program, and the development of the Pontiac basic skills testing program (SNAP) are other factors that could have contributed to the changes noted.

The factors associated directly with the SCAT intervention cannot be separated from these other influences in the district. Thus, while it is not possible to attribute changes in policy and goals to the intervention, it is possible to infer that the SCAT program was a part of a constellation of factors that were associated with these changes and improvements. Available data are not, however, sufficient to disassociate the effects of these related influences.

Research Question #II

What are the processes of and efforts to change behavioral practices in the schools among the professional staff?

- A. Have any changes in professional practices occurred in the district since 1977?
- B. If II-A occurred, can these changes be attributed to the intervention program?

Extensive discussion of the programmatic activities and strategies for change of the SCAT/CRACKLE intervention was provided in the narrative in the preceding section. That discussion will be supplemented as needed below.

Raising achievement by improving the school learning climate is the program goal. Behavioral changes for staff designed to achieve that goal are incorporated in the inservice modules that were developed for the intervention. These instructional activities and the modules are described in Chapter I. A more thorough treatment of the concepts is available in the modules themselves (Brookover et al., 1982).

As for behavioral changes for the staff, the assumption of the intervention is that the beliefs, practices, and structures that comprise the social system of the school must change if the achievement outcomes are to change. In this sense, the attempt to change staff behavior is the intervention itself, e.g., the inservice and discussion sessions, changes in grouping practices, Climate Watchers, grade level or department meetings, common scheduling of objectives, creation of a file of resource materials for mastery learning, school and classroom discipline plans, academic team games, efforts to increase time-on-task, and all other strategies and practices that make up the SCAT/CRACKLE program.

Ascertaining the extent of changes which have occurred in these areas since 1977 depends on two primary sources of data--observations by the MSU staff and the CRACKLE staff and an analysis of survey data on the LoU of the intervention for the 1978-79 year by Kim (1980). Examining these data leads to the same conclusion that a reading of the narrative suggests: significant changes in behavior have occurred in some instances, but the variance across schools in the LoU for various program activities is extensive. Some results follow.

A change in the grouping practices represents a major shift in the structural organization of the school and a concomitant change in the treatment of differences in achievement levels of students. Three schools--D, F, and G--are known to have changed from homogeneous ability grouping for classrooms to heterogeneous classes. Schools D and G changed solely because of the SCAT project. In School F, the change was made by the principal at the beginning of the 1978-79 year, prior to the October decision to become a project school. Her analysis of achievement scores for the previous year is described in the narrative. This principal had become interested in the SCAT program the year before. It is not known whether her decision to change the grouping was influenced by the contacts with Dr. Brookover and SCAT overviews during Spring, 1978, but she did initiate contact with MSU staff regarding the possibility of becoming an intervention site for the following year during that spring.

Beyond the decision to change, there is the question of acceptance of the new practice by the staff. Again, there is no doubt about the effect of the intervention at School F: the staff changed from hostility toward heterogeneous grouping at the beginning of the project in

October, 1978 to strong acceptance of it by the end of the year. Likewise in Schools D and G, initial reluctance to change from homogeneous grouping occurred during each school's first year in the SCAT program. Yet both staffs changed to heterogeneous grouping for their second year in the project, after experiencing considerable success in their first year of participation. The author is unaware of similar changes in other schools. Many of the schools already practiced heterogeneous assignment of students by classroom.

The related issue of grouping within classes for reading or math instruction is more problematic. The SCAT/CRACKLE program advocates instruction on the basic skills at grade level. Flexible groups are then recommended to remedy skill deficiencies. In other words, a combination of both grade level and functional level materials and instruction is recommended. Since the vast majority of teachers were instructing only at functional level prior to SCAT, a change to the combination of both levels would be in the direction recommended by the intervention.

School C is an example where definite movement in this direction occurred. This is reflected in the reduction of "team" teaching for 1978-79 compared to the first year of the intervention. Teachers opted for self-contained classrooms instead of paired classes in which one teacher taught the "lows" and the other taught the "highs" for reading and math. In general, the teachers across the district in all buildings are much more likely now to use the combination of instructional levels than in 1977.

The use of a mastery learning instructional system is another example of change. Although the complete and correct use of mastery

learning is difficult to implement, certain elements of the program have been used in some schools. Common scheduling of objectives by grade level is one aspect that is now practiced in all elementary schools, intervention and non-intervention alike. The development of a resource materials file is another factor recommended by the program; most schools have one, although the quality and quantity of materials in it and the extent of its shared use varies greatly between schools.

As for the use of diagnostic (formative) testing and corrective reinstruction to mastery based on the feedback from the formative tests, data are not readily available. This step, and the parallel use of enrichment activities for students who have attained mastery of a given objective are the most important aspects of mastery learning. They are also the most difficult to implement fully. Feedback from schools D, E, and F, for example, indicates that the incomplete application of these steps was one of the weakest components of the intervention at the end of the first year. Yet all three of these schools had been considered to be among the highest in their level of implementation of the intervention. Less "successful" schools would probably also exhibit a low level on this variable, although data for all schools are not available.

Finally, the use of academic team games enjoyed considerable success throughout the project schools. To some extent, this strategy became identified as the "gimmick" of the SCAT program, although this was a superficial misunderstanding of the program. But because of the high visibility of this strategy (the local newspaper article on School D featured pictures of a grade level contest), the quick results obtained in terms of motivation and achievement, and clearcut activities

which were required to implement this strategy, the LoU for team learning games was high in comparison to most of the components of the program. Schools D and F probably had the greatest LoU, but several other project schools used the team learning successfully. School C on the other hand was singularly unsuccessful in this area. After a few aborted attempts, the teachers never seriously considered this again.

Instructional practices other than the ones just reviewed were also advocated. But information on the extent of use of improved discipline procedures or appropriate reinforcement techniques require classroom observational data or records of referrals for disciplinary problems. These data are unavailable. Processes such as the Climate Watchers can only be evaluated in terms of impressionistic observations of informal conversation and behavior in the teachers' lounge. The author's own notes suggest that this process had some considerable success in School F and School G while in School C the process was never initiated. The MSU colleague in schools D and E suggests that the spontaneous monitoring and support of the belief that all children can learn was extremely effective in D but somehow never really worked in E. The CRACKLE Supervisor reported some instances of this in School H. Data on other schools is not available.

In addition to the observational data just noted, the study by Kim (1980) analyzed the relation between LoU and teacher expectations. His general findings for the six schools for which data was obtained indicate that the LoU of intervention practices in buildings with high expectations and beliefs in children's ability to learn is significantly higher than in the buildings with low expectations. This finding was

consistent for the other behavioral practices analyzed in his study. But these data are problematic for the current study. While the association of higher LoU, higher expectations, and higher achievement is significant, there is no way of telling whether the higher LoU brought about higher expectations or whether staffs with higher expectations were simply more likely to implement the program. Longitudinal data to address the problem of causal ordering is not available.

In short, significant changes in several areas of professional practices and behavior have been documented. But the extent of these changes varies widely from school to school. Furthermore, no data are available on these behaviors in non-intervention schools. In addition, the LoU for these different practices varies widely even within the same building. Thus the picture that emerges is a complex intervention composed of several different practices. These practices are differentially implemented within a school and the LoU "profile" of a school over all the practices also varies widely between schools.

Given these changes, to what extent can they be attributed to the intervention? As in Research Question #I, several confounding variables preclude a strict causal attribution to the SCAT/CRACKLE project. But the specificity of the behaviors in question does permit the exclusion of some of these factors from consideration.

For example, the election of the majority black school board clearly signaled a concern for achievement in the basic skills. But the Board did not recommend specific practices such as heterogeneous grouping, team learning games, or mastery learning. Thus this source may be seen as an indirect influence to seek improvement, but not for any specific practice. Likewise the new black Superintendent's general

advocacy of increased achievement and excellence would bring indirect support for change, e.g., his expression, "P.O.P., Brookover, or 'P.O.P.-over.'" Again, this indirect support in itself is not a source of specific practices, but only an inducement to adopt the practices in a program designed to bring about improvement.

On the other hand, the Superintendent's own project, P.O.P., is clearly a specific program. But closer analysis of P.O.P. reveals a strong emphasis on attitudes, parent involvement, and appeal to the "good" in various members of the school community, especially during P.O.P. Phase I, 1978-79. P.O.P. Phase II was much more programmatic, recommending most of the behavioral practices that the SCAT program contained. But the MSU/SCAT staff played a significant role in the revision of P.O.P. to include these programmatic changes. Thus to the extent that P.O.P. Phase II was programmatically similar to SCAT, the origin of this parallel was the SCAT intervention.

Another source of confounding influence cannot be written off so easily, however. That is the effect of the district's basic skills program on instructional behavior. Media attention, feedback from the District Evaluation Unit, the Superintendent's call for improved school performance, P.O.P., and SCAT all served to focus teachers' attention on the basic skills objectives and how their students performed on them. Awareness of the importance of these results increased throughout the intervention. That increased awareness alone could account for the change of behavior in scheduling of objectives, putting together resource materials files, and teaching at both grade and functional levels of performance. Likewise, the existence of state and federal compensatory education programs stressed better

achievement and the utilization of resource files (although appropriate goals for these compensatory programs remained an issue). With reference to mastery learning, another unit in the district, ESAA, was also pushing this instructional strategy, although original impetus for ESAA's interest is believed to have come from SCAT.

On the other hand, the only known source for the push toward heterogeneous grouping and for the practices of academic team games is SCAT. Thus, confounding forces in these two areas are minimized. Summing up, other factors in the district preclude direct attribution for these changes to the intervention. But the specificity of these behaviors sharply limits the influence of these confounding factors, especially for heterogeneous grouping and team games, compared to the more general goals and policies of Question #I. Hence, to the extent that behavioral practices for professional staff have changed, a considerable credit for that change can be associated with the intervention.

Research Question #III

What are the processes and efforts to change professional staff's beliefs, attitudes, expectations, and evaluations with respect to students' abilities to learn?

- A. Have changes occurred in these areas among the professional staff since 1977?
- B. If III-A occurred, can these changes be attributed to the intervention program?

The SCAT/CRACKLE intervention is based upon the basic premise that essentially all students are capable of mastering grade level instructional objectives, particularly in the basic skills. In essence, the intervention attempts to achieve that goal in two ways--one behavioral and one attitudinal. The previous research question

discussed changes in the behavioral realm. The parallel changes in attitudes that are addressed in SCAT/CRACKLE are the focus of this question.

The primary strategies for changing beliefs and attitudes can be divided into three areas. First, inservice training and discussion sessions with the project schools focus on creating awareness of research that supports the basic premise that all children can learn. J-curve behavior (Allport, 1934) as opposed to normal curve distributions, Bloom's (1976) work on mastery learning, the existence of exemplary disadvantaged schools, and the self-fulfilling prophecy are some of the topics which are discussed. A heavy emphasis is given to the fact that some naturally occurring schools do the job, despite the same type of low income and/or minority community that so many educators use as an excuse to write off responsibility for achievement. These awareness sessions also attempt moral suasion. Appealing to or challenging a staff to become an exemplary school can sometimes be an effective means of creating a desire to improve.

The second strategy is to capitalize on the inherent power of the peer group to effect change. The Climate Watchers strategy, described in the narrative, focuses on turning these peer influences in the direction of improved attitudes and higher expectations. A basic assumption here is that change occurs more quickly and will be resisted less if the entire group changes rather than having an individual risk the social ostracizing that occurs when one person changes but the group does not.

The third strategy for changing the normative climate is related to behavioral practices. Attitudes are sometimes more resistant to

change than behavior. If a staff can be persuaded to try a new practice, positive outcomes can result in a change in attitudes consistent with those outcomes. In a sense, this is what happened in School D when the "low" class won the first interclass academic contest. In the course of the intervention in a given school, a combination of these three approaches is used.

What changes in beliefs and expectations have actually occurred? The only available data for this question are observational. A major weakness of the evaluative data for the intervention is the lack of longitudinal checks on changes in attitudes. The Kim (1980) study contains some useful information on expectations and beliefs, but there is no way of comparing it to other points in time. The comments which follow are therefore based on observations of the author and discussions with other MSU and CRACKLE staff.

Parallel to the previous two research questions, considerable variance in the extent of changes in expectations occurred both within and between schools. School C, for instance, had several staff members who were hostile to the MSU staff members and the concepts of the project. This same school had a teacher who exhibited a complete change of attitude toward the program. Responding to Dr. Brookover's challenge to "teach them" at grade level even though pupils were functioning two or more grades below level, she found that they "caught fire" when challenged with grade level work instead of "baby work." Although she still had to work to build vocabulary, continue work on deficiencies below grade level, and provide encouraging support, she reported that the students made much greater gains than by instructing only at their functional level. Other staff in this school ranged

between these two extremes. Some appeared to accept the belief that virtually all children can learn at grade level and some did not.

Contrasts between schools were just as great. The sketches of the schools in the narrative illustrate the extremes: the dramatic changes in attitudes and expectations of School D or School F, versus School B and School J where the intervention lasted, respectively, two weeks and two months. Again, the range of changes spanned these end points.

Individual administrators throughout the district exhibit this same range. Isolated individuals in the district reacted in various ways. Some, such as the principal at School F, were positive from the start. Others underwent a striking change from extreme hostility to open respect for the program and the MSU staff. Dr. Brookover in particular was subject to several extreme shifts from negative to positive over the course of the intervention. Still other administrators remained highly skeptical of the concepts and goals of the program as indicated by the follow-up interviews of Central Office personnel in 1980.

In short, the changes that did occur, despite the inconsistency within and between schools, provide evidence of some considerable effects in the realm of expectations for and evaluations of students' ability to learn. Related questions can be asked. Are the changes deepseated enough to last? Is there a sufficient mass of individuals in the different schools and across the district to maintain the thrust of the intervention? These require follow-up data at a later time; this data is unavailable now, but some speculations on these issues are included in the analysis of Research Question #V.

Finally, can the changes noted be attributed to the MSU program? Again, confounding variables cloud the issue. In the behavioral realm, several of these other forces could be eliminated in part or completely because they had no particular programmatic content. But in the realm of attitudes, the overall thrust of the SCAT/CRACKLE project, that essentially all students can learn at grade level, is consistent with the focus of several other forces--the concern of the majority black school board, the new black Superintendent, and the P.O.P. program, to be specific. Thus it would seem that the emphasis of SCAT/CRACKLE had some effect on the changes noted. But clearly the parallel effect of these other forces cannot be disassociated from the intervention.

Research Question #IV

Has there been an increase in school and district level achievement since 1977?

- A. If IV occurred, can these changes be attributed to the processes described in #'s I, II, and III above?

As indicated in Chapter I, Pontiac is an urban district with depressed socioeconomic conditions. Compared to statewide levels, Pontiac's achievement scores are consistently lower, as is typical of most urban districts.

This difference can be seen by inspecting Tables 1 through 4. The tables show Michigan Educational Assessment Program (MEAP) data beginning in 1974 for reading and math in grades four and seven. Data is summarized as a Proportions Report, giving the percent of students who mastered from 0-24 percent of the objectives in the lowest quartile up to 75 percent or more of the objectives in the highest quartile.

Tables 1 and 2 compare fourth grade MEAP achievement for Pontiac and the Statewide summary, respectively. Tables 3 and 4 similarly compare seventh grade MEAP results. Two trends stand out in these tables. First, the lower achievement in Pontiac is shown by consistently more students in the lowest quartile and fewer students in the highest quartile compared to the state. This is true for both subjects and both grade levels. Second, achievement in Pontiac has increased steadily from 1974 to 1980. For reading and math and in both grades the proportion of students in the lowest quartile has decreased while the percent in the highest quartile has increased. A similar trend occurs in the Statewide Summary but appears to be less dramatic, although a ceiling effect may slow the rate of increase as achievement scores move toward the right (highest quartile) on the Proportions Report. The increasing trend in Pontiac predates the beginning of and continues throughout the intervention. The MEAP test for 1978, given in the fall, is the first year that scores would have been affected by the intervention, and then only for Schools A, B, C, and D for that year.

Table 1. MEAP Proportions Report, Pontiac District Summary
Grade Four

Percent of Pupils Attaining Indicated Proportions of Objectives					
	YEAR	Proportion of Objectives Attained			
		0-24%	25-49%	50-74%	75-100%
READING	1980	12.5	15.1	17.1	55.3
	1979	18.8	12.3	19.4	49.6
	1978	25.9	14.0	19.0	41.2
	1977	25.8	12.8	17.9	43.4
	1976	34.1	13.9	16.9	35.3
	1975	38.8	13.7	17.5	30.1
	1974	42.9	13.6	14.3	29.2
MATHEMATICS	1980	3.8	11.3	22.9	62.0
	1979	3.2	6.6	15.9	74.4
	1978	5.9	10.5	18.9	64.7
	1977	8.1	11.2	18.4	62.3
	1976	5.5	10.6	21.0	62.9
	1975	6.3	11.1	22.3	60.3
	1974	10.4	12.9	24.2	52.4

Table 2. MEAP Proportions Report, Statewide Summary
Grade Four

Percent of Pupils Attaining Indicated Proportions of Objectives					
	YEAR	Proportion of Objectives Attained			
		0-24%	25-49%	50-74%	75-100%
READING	1980	6.1	9.6	13.6	70.7
	1979	10.1	8.9	15.5	65.5
	1978	12.4	9.6	15.6	62.4
	1977	14.0	10.2	15.4	60.5
	1976	18.7	10.6	15.3	55.4
	1975	20.9	11.3	16.4	51.4
	1974	21.7	12.2	17.5	48.6
MATHEMATICS	1980	2.2	6.8	18.6	72.3
	1979	2.2	4.5	10.4	82.8
	1978	3.5	5.8	11.6	79.1
	1977	9.9	15.9	27.6	46.6
	1976	4.9	12.9	29.2	53.0
	1975	5.2	12.3	26.8	55.7
	1974	5.7	14.7	32.1	47.6

Table 3. MEAP Proportions Report, Pontiac District Summary
Grade Seven

Percent of Pupils Attaining Indicated Proportions of Objectives					
	YEAR	Proportion of Objectives Attained			
		0-24%	25-49%	50-74%	75-100%
READING	1980	6.3	17.8	21.0	54.9
	1979	14.8	14.1	15.4	55.7
	1978	18.8	15.4	18.1	47.7
	1977	21.9	16.0	16.5	45.6
	1976	39.0	12.9	14.0	34.1
	1975	35.8	12.5	12.0	39.8
	1974	36.8	15.1	14.0	34.1
MATHEMATICS	1980	7.7	18.7	28.2	45.4
	1979	6.6	15.4	33.5	44.5
	1978	11.0	21.3	34.3	33.4
	1977	22.3	24.9	27.8	25.1
	1976	12.7	21.7	35.3	30.3
	1975	12.5	19.2	31.4	36.9
	1974	14.0	21.4	36.5	28.1

Table 4. MEAP Proportions Report, Statewide Summary
Grade Seven

Percent of Pupils Attaining Indicated Proportions of Objectives					
	YEAR	Proportion of Objectives Attained			
		0-24%	25-49%	50-74%	75-100%
READING	1980	2.4	8.5	12.4	76.7
	1979	8.5	9.4	12.7	69.3
	1978	9.7	10.1	13.0	67.3
	1977	10.5	10.6	13.3	65.7
	1976	20.2	11.9	12.3	55.6
	1975	20.3	11.1	12.0	56.6
	1974	20.2	12.0	12.5	55.2
MATHEMATICS	1980	2.7	10.7	27.9	58.7
	1979	7.5	13.7	26.7	52.2
	1978	8.6	14.8	27.4	49.2
	1977	9.9	15.9	27.6	46.6
	1976	4.9	12.9	29.2	53.0
	1975	5.2	12.3	26.8	55.7
	1974	5.7	14.7	32.1	47.5

Based on the data in Tables 1 and 2, it is possible to conclude that achievement in the district is increasing over time at an appreciable rate. But achievement remains low relative to the state and considerable numbers of students still do not master 75 percent or more of the basic skills objectives on the MEAP test. Furthermore, the trend for increasing achievement existed prior to the start of the school learning climate program. It is therefore not possible to attribute the increase to the intervention; rather the intervention can be seen as one of several factors which contributed to the improvement in achievement through an increased focus on the mastery of basic skills.

The extent to which the intervention is associated with increased achievement can be better appraised by comparison of intervention schools with non-intervention schools. For the first year of the intervention, 1977-1978, Tornatzky et al. (1980) compared the four schools, A-D, to the remaining elementary schools. The test scores used are from the district's objective-referenced basic skills program (SNAP), described in Chapter IV. In this study the grade level within the school was used as the unit of analysis; there were 12 grades in the four intervention schools compared to 64 in the rest of the schools.

Standardized scores were computed for each grade based on the total scores for the district. This has the effect of equalizing differences between grade levels. Achievement gains from pretest to posttest decrease as students go from first to sixth grade (Slawski, Note 6). This may be a function of the unequal degree of difficulty of the test across grade levels, differences from one cohort to the next, or the commonly known decline in achievement in urban students as they progress through school. In any case, the standardized scores provide a basis for the comparison of the relative differences between schools within each grade.

The comparison between the first year treatment schools and the remaining control schools is summarized in Table 5. The table, taken from Tornatzky et al. (1980), presents results from an analysis of variance on the pretest data and an analysis of covariance, using the pretest as a covariate, for the posttest. Although the posttest difference is significant, interpretation must be tentative. First, these are volunteer schools; there may be a readiness for change not present in non-involvement schools. Second, the Hawthorne effect

Roethlisberger & Dickson, 1947) is a real possibility, especially the first year. Finally, there appears to be little relation to the "success" of the intervention in these four schools (see the "Narrative of the Intervention" above) and the achievement gains actually posted. Table 6, also taken from Tornatzky et al. (1980), illustrates this. The issue of actual LoU and the need for better longitudinal data, attitudinal and behavioral as well as achievement, are readily apparent here.

Table 5. Comparison of Treatment and Control Schools on Pre-Test and Post-test Measures of Reading and Math Achievement (Tornatzky et al., 1980)

		Treatment Mean Scores	Control Mean Scores	F	P
Pre-Test Measures	Reading	50.48	50.69	1.24	n.s.
	Math	48.49	50.49	2.62	n.s.
	Combined	98.89	101.18	1.66	n.s.
Post-Test Measures	Reading	53.93	50.75	7.99	.001
	Math	55.54	50.01	3.61	.03
	Combined	109.47	100.76	4.65	.01

n = 12

n = 64

N = 76

Table 6. Comparisons among Treatment Schools on Reading and Math Achievement Gain Scores (Tornatzky et al., 1980)

	SCHOOL			
	A	B	C	D
Reading	5.54	7.06	.95	2.86
Math	9.38	9.76	5.47	7.33

A more revealing picture comes from analysis of the second year of the intervention. All schools with students in grades 1-6 are divided into four levels of treatment. Lacking a random sample, any population of schools willing to implement or seriously consider a new program may have characteristics which are associated with higher achievement as well as proclivity for change. Thus the schools in Group III, including School J which was dropped from the intervention in December, are distinguished from Group IV because of a possible "readiness for change" factor. The four levels are as follows: Schools A, C, and D form Group I; Schools E-I, Group II, the second year intervention; Schools J-M, Group III, the "volunteer status" non-intervention schools; and the remaining eleven schools, Group IV, those not involved and not interested. Data was not available for School B for 1978-1979.

The 1978-79 district basic skills test (SNAP) for reading and math was utilized for the analysis. Standardized scores by grade level allow comparison of relative differences between schools within grades, as noted previously. Math and reading scores were combined to give a standard score of 100. Mean school scores for the combined reading and math are weighted by number of students by grades. These weighted scores are the data for an analysis of covariance with the pretest as the covariate, the four treatment levels as the independent variable, and the posttest as the criterion. Table 7 compares the treatment groups for pretest, posttest, and adjusted means. The one-half student in Group IV comes from combining reading and math to give a total standard score of 100; a missing score for reading or math resulted in a discrepancy of one in the N for reading and math.

Table 7. Pretest, Posttest, and Adjusted Group Means from Combined Reading and Math Standardized Scores, Weighted within Schools for Number of Grades and Students, 1978-79 Pontiac SNAP Data, Grades 1-6

	Schools	Students	Pretest	Posttest	Adjusted
Group I	A,C,D (3)	1108	102.38	102.98	102.73
Group II	E-I (5)	1506	98.31	102.78	103.16
Group III	J-M (4)	1191	101.69	104.80	104.66
Group IV	Remaining (11)	3931.5	100.63	97.63	97.65
Total	(23)	7736.5	100.54	100.69	

Table 8 summarizes the analysis of covariance. A test of the homogeneity of the within-treatment slopes yields an F of .6602 for 3 and 15 degrees of freedom, producing a p-value of .589, a result that indicates that the assumption of parallel within-group regression coefficients for the ANCOVA procedure is met. The overall ANCOVA is significant beyond the .0005 probability level for J-1 and N-J-1 degrees of freedom.

Table 8. Analysis of Covariance for 1978-79 Pontiac SNAP Combined Reading and Math School Mean Achievement

Source	d.f.	SS'	MS'	F	P
Between groups	3	207.6612	69.2204	10.48	.0005*
Within groups	18	118.9291	6.6072		
Total	21	326.5903			

The data used to construct Tables 7 and 8 require further comment. The raw scores used in the ANCOVA are mean school scores. The weighting procedure takes account of the differing number of grades and students within each school, but the unit of analysis, the school, does

not represent an equal number of pupils per building. Thus the group means in Table 7 and the ANCOVA in Table 8 represent some degree of distortion from the actual group means weighted by number of students per school. But the Central Limit Theorem suggests that this distortion would be slight since the number of students per school ranges from approximately 150-900 with a mean of 336. That the distortion is slight is shown by Table 9 which presents the actual group weighted means, computed by hand. Table 9 also indicates that the distortion of the arithmetical means of Table 7 are even less distorted for the adjusted means than for the pretest or posttest.

Table 9. Pretest, Posttest, and Adjusted Group Means, Weighted by Number of Students per School

	Schools		Students	Pretest	Posttest	Adjusted
Group I	A,C,D	(3)	1108	102.46	102.88	102.52
Group II	E-I	(5)	1506	97.62	102.65	103.10
Group III	J-M	(4)	1191	101.13	104.88	104.73
Group IV	Remaining	(11)	3931.5	100.18	96.77	96.77
Total		(23)	7736.5	100.15	100.03	

Thus the slight degree of distortion, the highly significant F ratio in the ANCOVA, the multitude of intervening factors that prevent any strict causal attributions, and the exploratory nature of the entire case study (see Chapter IV) all suggest that the significant findings of the ANCOVA are worth further exploration. At the same time, it should be stressed that the school is the unit of analysis and represents the mean for the students in that building. The discussion which follows is framed within this condition.

Given the significant overall ANCOVA, it is appropriate to search for sources of differences between group means. Hays (1973) indicates that Scheffe's (1959) method of post-hoc comparisons is appropriate for groups of unequal size and that the procedure is not restricted to independent (orthogonal) comparisons as are planned comparisons. Given the exploratory nature of the study, a 95 percent confidence level was computed for several comparisons of interest:

$$\psi_1 = I+II - III+IV$$

$$\psi_2 = I - II$$

$$\psi_3 = I - IV$$

$$\psi_4 = II - IV$$

$$\psi_5 = III - IV$$

$$\psi_6 = I+II+III - IV$$

$$\psi_7 = III - I+II$$

Several of these comparisons were significant. However, these findings can only be seen as suggestive because of the number of confounding influences throughout the intervention.

Comparison number 1 contrasts the intervention schools for year 1 and year 2 with the non-intervention sites; ψ_2 compares first-year project schools with second year buildings; neither of these comparisons is significant. On the other hand, comparisons 3, 4, 5, and 6 are all significant. This suggests that the major source of difference is between the low performance of Group IV, the non-involved and non-interested schools, relevant to the other three groups--project sites for year 1 and year 2 and the interested but not involved group. The last comparison matching the interested but not involved schools versus

the project schools is not significant.

The major question raised by this pattern of results is the relative importance of the intervention versus a readiness-for-change factor. Although the intervention schools showed significant improvement compared to the non-interested, non-involved schools, so too did the "almost" involved sites in Group III. Furthermore, the readiness-for-change factor cannot be ruled out for the project schools: all of these schools did agree to participate in the project. It is simply not possible on the basis of these data to infer that participation in the project rather than possessing this readiness-for-change quality is responsible for the improved achievement.

A further complication is the possible existence of Hawthorne effects that could explain the improvement in Groups I, II, and III. In sum, although some groups of schools have improved faster than others, the analysis of the 1978-79 data provide inconclusive evidence to answer why. These competing hypotheses, along with numerous confounding variables, prevent anything more than speculation.

The third year of the intervention, 1979-80, was the first year of CRACKLE. As indicated in the narrative, the in-service seminars that year thoroughly destroyed any real identity of the different treatment groups. Also, the emphasis shifted from intensive intervention to general dissemination of the program content and to planning for an intensive effort for the following year. For that reason, no analysis was conducted for 1979-80.

In 1980-81, only one elementary school, G, was involved in the program. That same year the district began using a different version of SNAP. The new test was reported on a standard score scale ranging

from 0 to 40 points. Posttest grade level means for each school, adjusted for pretest differences, were summarized for the district (Slawski, Note 6).

Although unadjusted posttest scores are not available, the adjusted grade level scores can be converted to a simple deviation from the district mean for that grade for each school. These deviations are found by taking the difference between the district grade level mean and the school's score in that grade. One score is obtained for each grade level in the school for both reading and math. The algebraic sum of these deviation scores for a given school indicates the relative position of that school compared to the district average. For example, a school housing grades 4, 5, and 6 might have grade level adjusted posttest math scores of 21, 22, and 22.5, respectively; if the grade level means were 20, the deviation scores would be +1, +2, +2.5 which sum to +5.5 for math. In similar fashion, the reading scores would be summed and then added to the math total to form a combined score for that school. The total deviation score for each school can likewise be combined across schools. This has been done for the four treatment groups identified above. Table 10 gives this total deviation, in standard score units, for the schools in each treatment group.

It should be noted that this procedure introduces some distortion. While the deviation units themselves are consistent across grade levels, the total deviation score for a school is related to the number of grade levels in the building rather than the number of students. Still this procedure provides a close approximation of each school's actual position compared to the district mean. Again the Central Limit Theorem suggests that distortion from the true building mean, weighted

by number of students rather than grade level, would be minimal. Furthermore, any comparison of the original treatment groups in 1980-81 must be viewed with extreme caution in light of the dissemination practices for CRACKLE for 1979-80 and 1980-81. Also, some slight shifts in the schools in the treatment groups are noted in Table 10.

Table 10. Treatment Group Deviation Scores, From School Grade Level Minus District Mean, Summed over Grades and across Treatment Groups, Using Pontiac 1980-81 SNAP Adjusted Posttest Standard Score Units (adapted from Slawski, Note 6)

	Schools (24)	Grades (74)	Math	Reading	Combined
Group I*	3	10	3.6	.7	4.3
Group II**	6	17	6.5	4.6	11.1
Group III*	5	17	17.6	7.9	25.5
Group IV	10	30	-3.7	-6.6	-10.3

*School B, which dropped out of the intervention after two weeks, is included here in Group III, the interested but non-involved treatment level.

**Sixth graders are housed in the Junior High intervention school for 1980-81; this school is included in Group II rather than Group IV.

Inspection of Table 10 reveals a pattern similar to that in Table 7 for 1978-79. However, Group III is now the most productive. In addition, the individual schools in Table 10 produce some interesting patterns which speak to the issue of institutionalization, to be addressed under Research Question #V. In particular, tabulating Table 10 totals showed that different schools in the same group have widely varying scores, in both direction and size of deviations.

The analyses given here demonstrate some achievement increases which are associated with the intervention schools. But several

confounding factors preclude strict attribution of these increases to the intervention itself. The intervention does appear to be associated with changes in policies, goals, attitudes, and behaviors. And these are associated with changes in achievement. However, longitudinal data in these areas is not sufficient to separate those processes associated with the intervention from the possible prior existence of a readiness-to-change quality in a school and the possibility of Hawthorne effects in schools implementing or contemplating change.

Research Question #V

What was the overall impact of the school learning climate intervention program in the district since 1977?

The preceding four research questions have examined the association of goals and policies, instructional behavior, expectations and beliefs, and achievement with the intervention and strategies for change. In addition, the narrative of the intervention presented an extensive analysis of factors in the schools and the district which seemed to have a bearing on the organizational changes that were occurring. Simply summarizing the previous analyses would add little to the understanding of change.

But a related problem can be profitably addressed. Under Question #IV, the inconsistency between schools in the same treatment level was noted. Some speculations on the factors which lead to this outcome will be related to the general issue of institutionalization. For the overall impact of any program must be judged by its long-term effect. And programs that do not become institutionalized produce little if any lasting mark.

Table 10 illustrates clearly the problem of institutionalization. Group II, the second-year intervention schools, has a positive deviation score total for both reading (4.6) and math (6.5). But this is deceiving; reading, math, and combined scores for Group II would all be negative if it were not for School G, which has scores, respectively, of 9.8, 7.6 and 17.4. School G is the success story of this intervention.

School G's success is also reflected in the MEAP Proportions Report summarized in Table 11. Since School G contains grades 1-4, the MEAP fourth grade fall testing represents a cumulative effect of the instruction for these children in grades 1-3.

Table 11. MEAP Proportions Report, School G
Grade Four

Percent of Pupils Attaining Indicated Proportions of Objectives					
	YEAR	Proportion of Objectives Attained			
		0-24%	25-49%	50-74%	75-100%
READING	1980	4.3	11.8	17.2	66.7
	1979	14.0	8.4	15.0	62.6
	1978	28.9	6.7	23.3	41.1
	1977	29.4	15.6	20.2	34.9
	1976	35.6	8.9	15.6	40.0
MATHEMATICS	1980	0.0	1.1	9.7	89.2
	1979	2.8	3.7	16.8	76.6
	1978	1.1	10.0	15.6	73.3
	1977	3.7	4.6	23.9	67.9
	1976	4.4	5.6	24.4	65.6

Comparison of Table 11 to Table 1 (Pontiac Grade Four MEAP) and Table 2 (Statewide Grade Four MEAP) is revealing. Testing for fall, 1979 is the first year that effects of the 1978-79 intervention for

School G would be reflected on MEAP scores. Thus comparing 1978 data to 1979 and 1980 data illustrates a pre-post effect for School G relevant to Pontiac and Statewide summaries.

In math School G has higher achievement than Pontiac as a whole for 1978 (only 1.1 percent compared to 5.9 in the lowest [0-24 percent mastery] quartile; 73.3 vs. 64.7 in the highest [75-100 percent mastery] quartile). By 1980, School G's achievement has shifted even more to the right: no one in the lowest quartile and 89.2 percent who attain mastery of 75-100 percent of the objectives. Pontiac in 1980 has 3.8 in the lowest quartile and only 62 percent in the top quartile. Statewide percents of 3.5 and 79.1 in bottom and top quartiles for 1978 indicate School G is just slightly behind for that comparison. But by 1980 the State had fallen to 72.3 in the top quartile. Thus by 1980, School G had 27.2 and 16.9 percent more students attaining mastery in the top quartile, respectively, than Pontiac and the State.

In reading, the pattern of change is similar. School G and Pontiac are almost identical in 1978 (School G has 28.9 and 41.1 percent in lowest and highest quartiles). The State is significantly higher in overall reading (only 12.4 in lowest and 62.4 in highest quartiles). By 1980 the picture has changed considerably. School G has improved (only 4.3 percent in lowest and 66.7 in highest quartile). This is just slightly behind the State totals. Pontiac has likewise improved, but at a much slower rate (12.5 and 55.3 percent in bottom and top quartiles).

A complete analysis of School G and all of the aspects contributing to its success is not possible here, but several can be noted. All of these have been discussed above in this chapter; furthermore,

these factors are consistent with the literature on organizational change reviewed in Chapter III. All of these are important elements in an intervention, and all are related to long-term institutionalization of change. The lack of any one of these poses a serious impediment to successful change. More than one missing element in a school simply intensifies the obstacles to change.

First, stability has both internal and external dimensions. The disruptions in the district were noted; the combined impact of turnover in staff, change of principal, ongoing financial crisis, etc., is more than most programs can endure. The very essence of a regularity (Sarason, 1971) is its incorporation into the ongoing routine of an organization; disruption of new programs mitigates against forming new regularities. One last point: structural aspects of the organization must be changed to support and facilitate the innovation if it is to survive. For example, trying to reduce the effects of low expectations due to labeling effects is unlikely to be successful in a rigidly grouped homogeneous system, a structural reality of many schools. These structural changes are not likely to be implemented and maintained under conditions that do not support program stability.

Second, the length of and amount of support for an intervention is crucial. One reason for the extreme variability of results within groups, with reference to Table 10, is the interruption of the program by changing principals, withdrawing (abruptly) an external change agent, or servicing many schools partially, as opposed to a few intensively (as in the first year of CRACKLE, 1979-80).

Third, leadership remains a crucial factor both internally and externally. The School G principal and the CRACKLE Supervisor both

worked to establish goals, priorities, and reward structures consistent with the intervention. In addition, both effectively monitored staff behavior with relation to the goal focus and activities to support that focus. In contrast, district leadership was inconsistent in monitoring achievement. Other issues such as financial exigencies interfered with priority attention to the Superintendent's oft-stated achievement goals.

Fourth, reward structures and incentives raise an issue which needs much attention. Two problems need research. First, to what extent do rewards operate in subtle and unobtrusive ways. What, how, and why do these hidden rewards operate? Second, in what ways can reward systems be consciously manipulated to move individuals and the organization toward formal goals? The issue here addressed is not unrelated to the processes of goal distortion and goal displacement and should be investigated from that perspective among others.

When considering institutionalization of change, it is worth noting how these four factors all relate to sustained and consistent effort to implement an innovation. In this vein, School G is the only building in which the program experienced both relative stability and continued intervention over a full three-year period. The success of School G should not be surprising given this circumstance.

On the other hand, despite the fact that other schools experienced inconsistencies in these and other factors reviewed throughout this chapter, some change in the district and individual schools has occurred. First, there is a greater awareness of the importance of high teacher expectations for all students. Related to this is increased goal focus: raising the achievement of all students as the

first priority of the school. Both individuals and schools have changed in these areas, some obviously more than others. Changes associated with the intervention were also documented for policies, structural modifications, and behavioral practices.

Achievement is also up. The analyses under Research Question #IV indicate that Groups I, II, and III all improved significantly more than the uninterested and non-involved schools in Group IV. But this should not deflect attention from the fact that this differential increase occurred within a period of overall districtwide improvement. Tables 1 and 2 for Pontiac and Tables 3 and 4 for Michigan clearly show that Pontiac's performance on the MEAP is increasing faster than statewide improvement. Two problems--one research related and one relevant to program success--are raised by this discussion. First, given the number of confounding variables and lack of better longitudinal data, it is not possible to attribute these effects solely to the intervention. Second, the number of individuals and schools committed to the intervention needs to be increased if the program is to be institutionalized. Long-term institutionalization, however, is unlikely unless the four factors summarized here are brought into conjunction by the district leadership.

Summary

This chapter has two parts. The first section is an extensive narrative of the intervention, presenting both a chronological sketch of the schools involved in the program and a discussion of factors in the organizational environment, both internal and external, which appeared to impact on the outcomes of the program.

The second section analyzes the five research questions for the study. The questions dealt with, respectively, goals and policies, instructional practices of professional staff, expectations and beliefs regarding students' ability to learn, changes in achievement, and overall impact of the school learning climate project. Each question focused on the association of changes in the five areas that could be associated with the intervention. In each case, extensive, though uneven, documentation of changes were associated with the SCAT/CRACKLE program. But intervening variables and lack of complete longitudinal data preclude causal attributions to the intervention itself.

CHAPTER VI

SUMMARY AND CONCLUSIONS

This study reports on a longitudinal intervention to improve the schools in Pontiac, Michigan. The research focuses on the processes of organizational change and associated outcomes of the intervention, an attempt to raise achievement by improving the school learning climate. Both the intervention itself and this analysis can be seen as contributions to the growing body of research on effective schools. But both go beyond that field into the next area of concern: how can the accumulated knowledge of the effective schools literature be translated into a program to create effective schools. The current research is a case study of a developmental program to accomplish that feat. This intervention was one of the first to attempt such a comprehensive change program. Explication of the processes of change in this intervention can thus contribute to future efforts in this direction.

Summary of the Research

In the fall of 1979 a research team from Michigan State University (MSU) led by Dr. Wilbur B. Brookover contracted with the Pontiac Schools to help increase achievement in the basic skills, especially for those students who were below grade level. The resulting program became known as the School Climate Activities Training (SCAT); after two years a Title IV-C grant from the Michigan Department of Education

was obtained to facilitate the takeover of the SCAT program by the district. The new program, named CRACKLE, maintained that same goal: raise achievement by improving the school learning climate.

This research has two primary foci: a narrative of the progress of the intervention and an analysis of the association between processes and outcomes. A case study approach was utilized because of the developmental nature of the program; the exploratory analyses contribute to an improved understanding of the factors which affect organizational change. In short, the study is designed to formulate, not test, hypotheses.

Prior to the actual narrative and analyses, considerable background was given in three areas. Chapter I describes the setting of the intervention, the city, and the schools of Pontiac. Chapter I also describes the evolution of the intervention from school social climate, primarily a measure of the perceptions of expectations and evaluations for learning, to the expanded concept, effective school learning climate, which has been equated with the characteristics of effective schools. The expanded concept includes normative, structural, and behavioral dimensions. As the program developed, the strategies for change have increasingly focused on the structural and behavioral aspects of the school social system. The third area is an extensive review of the literature on the school effects research. That historical perspective is linked to a review of basic work in organizational theory and organizational/educational change. The SCAT/CRACKLE intervention is an embodiment of the three areas.

The narrative of the program and analyses of the research questions, which focus on the processes and outcomes of change, are both

treated extensively in Chapter V. No attempt to summarize these will be given here.

Implications of the Results

The analysis of the research questions in Chapter V details changes that have occurred in schools and the district that are associated with the project. The changes noted include the realms of policies and goals, professional behavior, expectations and norms related to achievement, and achievement outcomes. The fifth research question addresses the overall impact of the program.

Two key points can be drawn from this analysis. First, changes in policies, expectations, and behaviors, as well as achievement outcomes, were associated with the intervention. In some limited instances, the cause of the changes can be traced directly to the SCAT/CRACKLE project. But in general, no causal attributions can be made. The combination of too many confounding influences and the lack of complete longitudinal data in behavioral and attitudinal areas simply preclude such conclusions.

Second, the changes that have occurred, whether attitudinal, behavioral, or structural, are marked by unevenness across individuals and schools. This extends to variability in the long-term effects as well as immediate outcomes. For purposes of this discussion, this variability in outcomes will be referred to as the extent to which the innovation has been institutionalized in schools and the district.

The issue of institutionalization is worthy of further discussion. Incomplete institutionalization can be viewed from two perspectives. First, obviously some change occurred. And even if causal attributions

cannot be made, speculation can focus on the processes that are associated with the strategies in the intervention. Observations of these ongoing processes provide legitimate evidence for suggesting that some aspects of the project were successful, at least in some instances.

Second, the negative perspective on this issue indicates that some desired change did not occur. Why did only some of the individuals or some of the schools respond to the program? Why was the program apparently developed to a much higher level of use (LoU) in some schools, e.g., School G, than in others? And why did the program seemingly decay over time in some schools while becoming incorporated into the regularities and structures of the school in other cases?

A thorough analysis of these two perspectives is not possible, but some preliminary thoughts are in order. The factors summarized here have been extensively discussed in other sections of the study. In particular, certain sub-sections of the narrative treat internal and external aspects of the environment which are related to change.

First, leadership in the schools and in the district has been inconsistent. More consistent and more effective leadership would increase the probability of increased institutionalization. Clearly strong support from the Superintendent and central office administrators is essential to program success. The extent of that support for the SCAT/CRACKLE program was perceived as uneven.

Second, reward structures and incentives are inconsistent across the district and are often not tied to the goals of the intervention. This is partly an issue of leadership and partly an aspect of the inertia associated with structural features of an organization. Many reward systems are embedded in long-term regularities, policies, or

goals. A complete analysis of the existing reward structures, both latent and manifest, is the first step. This analysis, conducted at student, staff, administration, and policy levels, must then be utilized to consciously restructure all rewards consistent with the goal(s) of the organization. The classic example in education of negative rewards is Title I; if students catch up to grade level, they are no longer eligible for funding and the district loses the resources which were available to give the students extra help in the first place.

Third, disruptive environments can lead to discontinuities in programs. Pontiac experienced financial problems which disrupted academic programs in a number of ways. But this factor is also related to leadership. Internal policies such as the shifting of principals can contribute to or reduce instability. Likewise, the extent to which the district is deflected from official organizational goals by external forces is largely a function of leadership.

Fourth, organizations and the individuals in them respond to political considerations. To the extent that these considerations are inconsistent with program goals, energies will be used to pursue other agendas; this is the concept of goal distortion. A clear example of this is the conflicting message which principals received concerning the Superintendent's own program, P.O.P., versus the MSU/SCAT project.

Fifth, and not unrelated to any of the above, is the degree of goal focus. Different schools and districts place varying emphasis on attainment of goal outcomes, particularly mastery of the basic skills by all students.

Sixth, the general relationship between the formal organization and the informal organization is a key factor. The problems of

structural inertia were mentioned for reward structures. Line/staff hierarchies are another example of structural rigidity. But the norms of the informal group can also hinder change. The Climate Watchers process in the intervention is designed to help change informal norms in the direction of program goals. But the success of the Climate Watchers varied widely from one school to the next. Greater understanding of the dynamics involved in the spontaneous generation of this process by the members of a staff is clearly needed.

While this list is not exhaustive, the factors appear to be the most relevant to the degree of institutionalization in the current study. Other factors, such as the effect of a change agent on the school social system (discussed in Chapter V) could also be included in the above outline, e.g., under program discontinuities associated with disruptive environments.

The issue of institutionalization, however, cannot be adequately addressed from the current research perspective. The concern of this study is on micro processes within the organization and its immediate environment, i.e., on structure, policy, beliefs, and behavior that influence outcomes, differentiate effectiveness across districts or schools, and contribute to understanding of change. But full understanding of change within schools requires analysis of the macro environment as well. Simply put, economic and political forces in the wider society often determine, or at least strongly influence, the pattern of micro processes within an organization. Some thoughts on the prospect of educational change as related to the wider society follow.

Possibilities for Change

The United States political and economic system is a blend of democracy and capitalism. Two fundamental realities from these two systems shape American consciousness with respect to work, schooling, success, and social mobility. First, from our democratic traditions comes the fundamental value/belief that America is the land of equal opportunity. This value is embedded in the Declaration of Independence, the Constitution, and political tradition and folklore. Second, from our capitalistic economic system comes the reality of vast inequalities in wealth, income, status, prestige. In short, American society is structured in terms of a social class hierarchy with vast differentials in real access to power and position that are determined primarily by the social class into which one is born.

These two fundamental values, and the realities they represent, are totally at odds. Yet the American people overwhelmingly accept both values. In fact, these two values are embodied in the American Dream: the belief that America is the land of equal opportunity in which a person can rise to the occupational level of his/her choice, consistent with one's ability; the individual earns this occupational success (social mobility) through the degree of success in school, which in turn is related to one's natural ability and effort.

The key to combining these two antithetical values is the concept of individual differences in ability. The belief that vast differences in ability shape not only school success but also occupational mobility is fundamental to the American Dream. This belief is also the single most pervasive factor in public and educational consciousness with respect to American schooling. The legitimation of this belief is

centered in the concept of IQ, which has been scientifically derived and measured. Everybody "knows" that some children are slow and that low IQ children just cannot learn very much or very fast. Of course, low IQ can come from either low natural ability or poor childhood environment, a culture of poverty, but the result is the same. And that result is poor school performance and resulting work at the bottom of the occupational hierarchy. The essence of this explanation is that the locus of individual success or failure lies within the person. This is the classic meritocracy where merit is determined by natural ability (see Blum, 1978; Bowles & Gintis, 1977; Karier, 1973; Marks, 1980; Persell, 1977, for further explication of this model).

Given this difference in individual ability, it has fallen to the schools to sort and select on the basis of ability for placement into the occupational hierarchy (Parsons, 1959). Schooling in the wider society cannot be understood apart from this allocation function. Any attempt at school reform must take account of this fundamental reality of how the schools function in society.

The obvious question that this macro analysis raises is, What are the possibilities for educational improvement based on the findings of the effective schools research, given the reality of the allocation function that schools perform? A complete assessment of this question is not possible here, but some crucial issues can be raised.

First, the underlying assumptions of the educational models that are operational or that are advocated for change should not be left implicit. Traditional practices, innovations, and research in education have been based upon the assumptions of individual difference. Quite simply, our schools are designed to foster and increase

differences in learning, which is justified as meeting the needs of individuals with extreme differences in ability. Marks (1980) puts the matter bluntly when he states that individual differences are socially constructed (Berger & Luckmann, 1967) by the practices in our schools.

On the other hand, a careful reading of the characteristics of effective schools (see Chapter I) reveals a different underlying assumption: that almost all children are capable of learning well and that it is the school's responsibility to see that all children perform to a common level of mastery. This view does not restrict children from higher levels of performance, but the stress is not on the economic efficiency model of maximizing individual differences as most traditional school practices do; rather, the staffs of effective schools have implicitly adopted a set of beliefs, structures, and instructional practices that foster and promote an ethic of effectiveness through maximum human resource development of all students. In essence this equity-based value rests on mastery of instructional objectives in the core academic subjects by all students as a necessary stepping stone to higher levels of individual actualization of potential and of human capital development necessary for the economic growth of our country.

It cannot be emphasized enough that these are two fundamentally opposed political values: (1) economic efficiency which maximizes individual differences, based on the assumption that human ability is widely variant and that scarce resources should be concentrated on developing the potential of "the best and the brightest," (2) equity-based effectiveness which develops the full potential of all students,

based on the assumption that virtually all humans can learn well and that economic resources should be focused on increasing the productivity of the entire society. Seldom do empirical or policy studies make explicit the underlying values inherent in the theoretical models used or the recommendations made. But as Karabel and Halsey (1976) note, one function of good research is to explicate just those practices that link the values of the wider society to the bias in research.

A second issue is raised relevant to evaluation, particularly norm-referenced versus criterion-referenced testing. As with most complex topics, this is not a simple either-or situation. But clearly the traditional emphasis in America has been biased toward norm-referenced, standardized testing. Thought needs to be directed to the implications of testing and school improvement. Specifically, what happens to the mean on standardized norm-referenced tests if large numbers of students begin to perform better. Since the mean simply moves to the right, the curve still produces winners, average pupils, and losers, even though by the old standard, there would be virtually no losers. A solution is to produce criterion-referenced tests that are equivalent in difficulty to some point on current norm-referenced tests, say the 50th percentile. Progress could then be measured by the percent of students who master the objectives for this new criterion-referenced test.

A third related issue must be faced. Manpower needs are currently insufficient to provide full employment. Under those circumstances, those who are least well educated are most likely to suffer the effects of un- or underemployment. Improving the quality of education dramatically will do little to change manpower needs; it will, however,

produce many well-educated workers for whom no jobs may be available. In other words, producing effective schools on a wide scale could very possibly be a crippling blow to the role of schooling as the major legitimator of the inequalities in our social class system. On the other hand, society would probably have little trouble absorbing the better-educated youth if only a few effective schools were produced.

Fourth, what criteria should be used to evaluate effective schools? There is no current consensus on what criteria should be used. Clearly there are degrees of effectiveness. Edmonds (1982a) suggests that effective schools are those in which there is an equal percentage of students from high and low SES who master basic instructional objectives. He adds that upper income parents will exert sufficient pressure to ensure that the school will remain high achieving. While achievement of this goal would bring dramatic improvement in our schools, there is the very strong possibility that students would still be sorted into some hierarchical ordering, despite the elimination of group biases and a much raised floor level of performance. Rosenbaum's (1976) case study of tracking in a very homogeneous, all-white suburb demonstrates the propensity of our schools to foster extreme individual differences, consistent with the occupational and social class structure of the economic system, even in the absence of group distinctions.

Another possibility for an evaluative criteria is that virtually all students (say 85 percent or better) must demonstrate mastery of basic academic objectives. However, even this approach would not negate the selection process. Admission to elite colleges, professional schools, etc., would still be based on competitive

norm-referenced aptitude tests. Even if virtually all students scored higher than current standards, those who "topped the (new) curve" would still be selected.

Finally, what about individual differences? The intent here is not to suggest that individual differences do not exist. However, two points can be made.

First, individual differences have been vastly overestimated in their effects for schooling and social class--at the expense of understanding the pervasive and latent effects of structural features in both society and the schools that are "socially constructing" and increasing individual differences. These structural aspects of society, and concomitant belief systems regarding individual differences, are deeply embedded in the social and economic fabric of the American class system (cf. Persell, 1977).

Second, individual differences that do exist are at a level above what is required for grade level mastery of instructional objectives in the basic academic subjects. Virtually all students are capable of achieving at this level (Bloom, 1976).

Although these points do not exhaust the issues related to the allocation function of schools, they certainly highlight the conclusion that educational improvement must account for macro forces as well as micro processes. While the problems involved in changing the beliefs and transactions within schools, especially on a large scale, are formidable, the problems encountered in dealing with the allocation function are a part of society itself, which suggests that large scale educational improvement may be unlikely unless changes also occur in the economic and social class structure.

Contributions of the Present Study

The observational nature of the case study can increase understanding of the processes within an organization. The contributions of the current study are consistent with that strength.

First, as indicated in Chapter I, the success with which our schools perform their role of providing equality of educational opportunity (EEO) is seriously in question for the poor in this country. This research provides an organizational case study of an intervention program designed specifically to increase EEO. The knowledge gained from this study may improve future efforts to further expand opportunity for all students.

Second, this study adds to the growing literature on effective schools. The greater the number of inductive case studies available, the stronger will be the deductive generalizations which can be drawn. This study also provides an extensive review of the historical perspective on the development of various strands of the school effects work. Finally, the emphasis in this study on reward structures and incentives as a characteristic of effective schools has received too little attention previously. Highlighting this factor is a further contribution to this literature.

Third, the research on organizational and educational change is similarly in need of more case studies. The generally low level of theoretical work in this area is a reflection of, among other things, the dearth of good case analyses of the change process. The extensive narrative provided in Chapter V is a contribution to this area. Furthermore, the theoretical perspective adopted for this study emphasizes both external environmental conditions which affect organizational

behavior and the reasons why behavior occurs. The first emphasis is receiving increasing attention; this study is an addition to that movement. The study's contribution to the second factor lies in its emphasis on reward structures, both latent and manifest. Again, other researchers have addressed this issue, but too many have not.

Fourth, the focus on institutionalization, while clearly related to organizational change, is a process as yet imperfectly understood. This study and the discussion in the previous section contribute to this area as well. Inconsistencies in level of performance or longevity of an innovation have been more often described than explained. Again this reflects the generally low level of theoretical work in organizational change, in part because a sufficient mass of studies has not yet been generated to permit stronger inductive models.

Finally, and closely related to the first, there is the contribution of describing and analyzing this particular intervention. Kim (1980) analyzed a portion of the data from Pontiac, and Hathaway (1980) describes a one-year intervention in a single school that attempts to implement the same school learning climate program. But the current study involves an entire district and is longitudinal. Furthermore, as indicated, this is one of the first comprehensive school improvement programs based on the characteristics of effective schools. Other programs now exist; Edmonds (1982b) reviews these programs. But with the possible exception of Project RISE in Milwaukee, which was influenced in part by the Pontiac program, these programs have been initiated after the Pontiac work.

Suggestions for Further Research

Several areas for further research have been suggested by this study. First, the current intervention needs replication using the school learning climate program or others similar to it. Edmonds' (1982b) report suggests some movement in this direction but much more is called for. In particular, studies utilizing quasi-experimental designs that obtain repeated measures of data in behavior, attitudes, policies and goals, structure, and other outcomes in addition to achievement can begin to separate the confounding effects of other variables that plagued this effort. Multi-site studies would be welcome if such were possible.

Second, the role loss phenomenon with respect to the withdrawal of an external change agent from the functioning social system (see Chapter V) is an area for further study. Related to this is the possible diffusion of leadership created by the presence of the change agent in addition to the organizational leader. Finally, attributing results to the person as opposed to the role is a phenomenon not limited to the change agent, as described in Chapter V. Thus several issues regarding the role of change agent are raised for further study.

Third, the question of reward structures and incentives, both latent and manifest, is in need of further study. Problems related to this issue include leadership's use of reward structures, structural inertia, cost/benefit analysis of effort versus rewards as a factor in resistance to change, and reward structures in the wider society such as salary levels, occupational prestige, or media coverage. The author sees this area as one of the most promising for improving understanding

of organizational behavior and change.

Fourth, increased understanding of the dynamics of the processes in the Climate Watchers or other informal groups is needed. Specifically, how, why, and in what manner does this process attain the spontaneity to operate informally? Why does this occur among some groups but not others? What is the role of the informal leader in this process? These and other questions need more research.

Fifth, little research has been devoted to the effects of different ranges of variance in achievement within schools. What are the effects of loose or tight coupling (Weick, 1976) on within-school variance? How is variance related to mean achievement? What are the effects of ceiling or floor effects on mean achievement? This entire area is a fertile ground for further study.

Sixth, further work is needed in the entire area of organizational/educational change. Specific areas suggested by this study include but are not limited to the effects of variations in the placement of change projects in line or staff positions at different levels in the hierarchy, the impact of political factors, environmental forces from the wider organizational society, level of support for a program by the top organizational leadership, and general effectiveness of leader behavior.

Seventh, and closely related to the sixth, is the issue of institutionalization discussed at length in this chapter. Additional research is clearly called for here.

Finally, there is a continuing need for study in the field of effective schools. In particular, the question of why some schools become exemplars has received almost no attention. The vast majority

of schools for the disadvantaged produce typically dismal achievement outcomes. Current research in the area has concentrated on the descriptive characteristics of the schools that are effective. While that knowledge is important, it may be less crucial than an understanding of the reasons why a given low-income school is able to surpass the low performance outcomes normally associated with these schools.

The knowledge of why seems especially important if the goal of effective schools research is not merely to describe those few exemplary schools, but to turn ineffective schools into effective ones. The author suspects the answer to why may be related to further work on reward structures. But whatever the reason, the answer is vital if our schools are to provide any real chance at the American Dream for those children who have the misfortune of being born poor.

APPENDICES

APPENDIX A

APPENDIX A

CONSULTATION AGREEMENT

MICHIGAN STATE UNIVERSITY East Lansing · Michigan 48824

DEPARTMENT OF URBAN AND METROPOLITAN STUDIES · COLLEGE OF URBAN
DEVELOPMENT

Consultation Agreement Between
Michigan State University Staff and Participating Schools

Participating Schools will:

1. The school staff and principal will read, and study all of
the modules;

_____ Principal _____ Staff

2. The school staff and principal will allocate a block of
time in which the entire set of modules will be presented
to the school staff;

_____ Principal _____ Staff

3. The school staff and principal will allocate blocks of time
for grade level group meetings, staff meetings, committee
meetings and the like;

_____ Principal _____ Staff

4. The school staff will permit in-class observation by
consultants pertinent to program implementation;

_____ Principal _____ Staff

5. The staff and principal will develop instructional materials, and schedule in-class and inter-class activities, relevant to the establishment of a group learning games program;

_____ Principal _____ Staff

6. The staff will conduct a self-study of their informal and formal school climate, and interaction patterns, as they naturally occur in their building;

_____ Principal _____ Staff

7. The staff will initiate a mastery learning instructional program including the common scheduling and sequencing of grade level objectives, an emphasis on grade level staff collaboration, and the incorporation of instructional materials relevant to common objectives;

_____ Principal _____ Staff

8. The school staff will form an ad hoc Time-on-Task Action Committee to study the utilization of the school day, and to make specific recommendations for enhancement of academic engaged time;

_____ Principal _____ Staff

9. The principal will agree to an extensive and intensive personal consultation to increase skills in staff facilitation, in communication of instructional objectives, and as an instructional leader of the school;

_____ Principal _____ Staff

10. Each grade level staff will work with the principal to review BSAP test data and its implications for curriculum and instructional strategies;

_____ Principal _____ Staff

11. The staff and principal will review grouping and differentiation practices that impact on the school learning climate;

_____ Principal _____ Staff

12. The school staff will form a standing Parental Involvement Committee to establish an ongoing parental involvement congruent with a positive school climate.

_____ Principal _____ Staff

July 27, 1978

Michigan State University Staff will:

1. Provide weekly on-site training and consultation with the total staff, and groups of staff (e.g., grade level, individual teachers);
2. Provide one-to-one consultation with the principal, and other support administrative staff;
3. Provide periodic feedback to building staff on level-of-implementation of the program;
4. Provide written materials relevant to implementation.
5. Provide direct assistance to parents to establish an involvement component.

July 27, 1978

APPENDIX B

APPENDIX B

IMPRESSIONS OF ELEMENTARY SCHOOL F

Pontiac School Climate Project
1978-79 School Year
Based on Observations From the Perspective of
Participant-Observer, Change Agent

by

Stephen K. Miller

June, 1979

(NOTE: The name of the school and names of the staff have been deleted for this Appendix. The original report was for internal use of the MSU staff only.)

In the beginning School F was a unique situation. The principal was strongly motivated for and desirous of School F becoming much improved in terms of achievement. School F ranked last among the intermediate schools in Pontiac for 1977-78 on the BSAP (district's basic skills test) post-test results. At the same time principal-staff relations had deteriorated to one of mutual suspicion, distrust, and for some members, even antagonism bordering on hostility, passive resistance, and active opposition. Thus the leadership, while desiring positive change, did not have a cooperative working attitude with the staff.

Given this background on staff relations, it was on October 2, 1978 that I first made a presentation to the staff on their participation in the Pontiac School Climate Project. That occasion was

marked by outright hostility towards me and the presentation which was a result of perceptions on the part of the staff toward the Project. Dr. Brookover and the MSU project provoked very negative reactions due to the articles in the Oakland Free Press from the previous year, and from previous contact with the staff through the general overview on School Climate presented to all schools in the Pontiac district the preceding year. However, the staff proved to be open to the presentation and spent over four hours the next day deciding among themselves to join the Pontiac School Climate Project.

An article in the Oakland Press within the next week helped to reinforce commitment to participating in the project; that article named School F as the lowest achieving in Pontiac, the district which was the lowest achieving in Oakland County. This overview describes the immediate situation in the school and helps explain the following analysis of the normative learning climate in the school at the beginning of the project.

The description of the lounge behavior, indicative of the kinds of attitudes, beliefs, and behavior concerning children and their potential for learning, reveals frequent statements to the effect that Johnny or Mary were extremely ill behaved or came from a family which cared little about school. The consensus of these statements reflects a general belief by the staff that the low achievement in the building was caused by the low socioeconomic status of the students, particularly the lack of support and low quality home life furnished by parents. At the same time there were numerous comments that dealt with frustrations of staff. These comments could be construed as evidence of the frustration of working in a building where

success in terms of achievement was not happening; the staff could complain about the students as a means of venting those frustrations. These frustrations often showed up at the end of a troubling day or disciplinary incident with a student. Achievement problems and children who were not learning well also resulted in disparaging comments. These remarks seem to reflect an attitude on the part of the staff that no matter what they did, the problems created for the school by the children and the uncooperative parents were more than they could handle; it was as if they were knocking their heads against a wall.

On the other hand the staff behavior in the lounge illustrated that they had a very positive working relationship among each other. There seemed to be good communication between black and white members of the staff. In fact, any split in the staff was more one of old versus young and, in particular, sixth grade versus fifth grade. The sixth grade is a younger and more dynamic group; the fifth is older. This split characterizes differences in staff attitudes. However, the commonality of the staff in terms of actual belief about students and their level of achievement, and the frustrations of the staff in terms of discipline problems, seem to be common to both the older and younger staff.

But it is not to be inferred that the staff had given up. Rather the staff prided themselves on being hard working, a very accurate perception. Unfortunately the staff appeared to believe that their hard work was not adequately or fairly reflected in achievement outcomes because of the students and the parents with whom they worked. The attribution of the causes of low achievement to the

students and parents seemed to prevent viewing the system of which they were a part as the real problem.

Other aspects of the climate at the beginning of the year indicated that mastery learning techniques and strategies were an approach to achievement and learning which had not been conceptualized or practiced in the least. The traditional method of teaching, testing, and then going on to the next unit, in addition to considerable homogeneous grouping was the instructional norm in the building. The history of the building indicates that the school had been grouped homogeneously by class in both reading and math. In fact this grouping was the cause of one of the major battles between the principal and the rest of the staff. The principal had computed the gain of the various classes for the school for the previous year for the high, medium, and low classes. This analysis showed that the low classes, even though they had the lowest enrollment, supposedly to allow more individual instruction for the slower students, had minimal gains. The higher groups had gained some and the middle groups had gained a small amount, while the low groups in some cases actually had regressed and in most cases had close to no gain. As a result of this finding and the ensuing discussions with the staff, the principal had finally decided that for the current year, 1978-79, the students would all be heterogeneously assigned to classes. However, this had created a tremendous amount of conflict between the staff and the principal, contributing in large part to the problems in staff-principal relationship referred to above.

Time on task at the beginning of the year was a problem. Students spent a lot of time in the hallway and on restroom breaks.

Part of this was due to the construction of the building in which the restroom facilities were on opposite sides of the building. Boys and girls had to either be left unaccompanied in the restrooms or teachers had to share this responsibility. At any rate the structure of the building, combined with a lack of enforcement on the part of the teachers and of leadership on the part of the principal, led to a considerable amount of time wasted in use of restroom facilities. Likewise the students' return to class after recess or lunch hour was extremely slow, and students would trickle in from fifteen to twenty minutes after the bell. Again a tremendous waste of time-on-task due to inconsistent enforcement by the staff and a lack of leadership by the principal was noted.

Further problems with time-on-task included the observed low level of discipline in the classroom and the hallways; cooperation between staff and principal in this respect was also lacking. The resulting lack of discipline in the classroom detracted from actual learning time and added much to the frustrations stemming from staff perceptions of non-leadership and non-cooperation by the principal.

To add a positive note to the beginning of the year climate, the principal had done a lot of work on the use of evaluation in utilizing the BSAP results--both pre and post tests. These had been discussed with the staff; the staff had been required to look at the scheduling of the objectives and to try to concentrate more time on the objectives which had particularly low achievement from the year before. Use of evaluation was probably one of the strong points in this particular building at the beginning of the project.

Overall staff morale pertaining to adult job satisfaction, as opposed to school learning climate, would have to be taken as negative. This was directly attributable to principal-staff relations; however, as noted in the changing schools study (Brookover & Lezotte, 1977), the relationship between negative morale, due to leadership-staff problems, and achievement is questionable. In any case this describes the overall school climate of the building at that time.

Although not comprehensive, this provides a background picture of a fifth and sixth grade elementary school building in which achievement was low and in which the staff believed there was little that could be done to raise achievement because of the limitations of the poor, urban children they taught. The staff strongly believed that low achievement was due first to the low SES and minority status of the students and second to the low cooperation and lack of quality of home life of the parents in the district. In this respect School F was a typical low achieving, low income urban minority school in which the staff tends to scapegoat responsibility for achievement onto socioeconomic status, race, parents, and all of the other usual factors by which schools disclaim responsibility for achievement (see Hoover, 1978).

On the other hand the staff must be given credit for the fact that they were extremely willing to attempt to improve achievement, as noted by the fact that they met for over four hours of their own time on an inservice work-day, during which they considered whether or not to adopt the school climate program. The fact that the program was adopted over the objections of certain staff members, that the entire staff agreed to give the program a fair chance, and that all

staff members, whether they had objected or not, would cooperate with the program reflects the staff's concern for improving their building level achievement.

Likewise, although the leadership had provoked some hostility, without doubt the principal was actively working for higher achievement and an improved climate; the principal was the primary reason why the school climate project was implemented at School F. It was the principal's insistence that the MSU consultants make the presentation to the staff, and it was her insistence that the staff listen to the program. Thus despite the negative factors and low achievement noted above, the positive functions of a principal who was committed to higher achievement and improved climate and the openness of a staff willing to look at a program for change cannot be discounted in the overall climate of the building at the beginning of the year.

Evaluation of the climate at the end of the year begins with a description of the norms, attitudes, and beliefs of the school.

Lounge talk and behavior at the end of the year indicate tremendous change in actions and beliefs. In the first place the amount of time devoted to talk about academic subjects, achievement problems, raising achievement, and improving the climate in the building at the end of the year was much increased. In effect a staff which had spent their free time either being negative towards kids or socializing about non-school events was now a staff which spent upwards of 50% of their free time talking about ways of solving problems, increasing achievement, and improving the school for the students.

The number of negative comments about students had decreased significantly. Those staff comments that were negative towards students and which reflected that students cannot learn were often accompanied by disclaimers to the effect that, "I know all students can learn but I've got this student that isn't or that hasn't" The inference from this is that even though the teachers were not always one hundred percent convinced that all students can learn, i.e., they questioned whether or not some of the slower students might not still be having problems, at least they were much increased in their awareness of the fact that they were voicing statements contrary to the belief that all students can learn; furthermore the absolute number of these negative statements was reduced. There also seemed to be a guilt which had to be assuaged by the disclaimer that "I know all kids can learn, but" and this guilt seemed to be associated with making any type of negative statement about students.

These changes indicate improvement in the normative beliefs and behaviors as judged by statements about students. Further, many negative statements about students would result in some form of comment, generally of a joking or mocking kind by another staff member, to the effect that they were exhibiting poor school climate. The fact that other staff members would remind the teacher that (s)he had just said something negative about students, even if in a mocking manner, is a reflection of a much increased awareness on the part of the staff that all students can learn and of a changed attitude toward their belief in whether or not in fact students could learn! This also reflects a normative change in acknowledging that all faculty have a responsibility for monitoring one another's

collective behavior, comments, and beliefs.

With regard to the commitment of the teachers, the amount of work displayed by the staff this year has been very positive, resulting in an extended effort by almost all of the staff toward making the intervention project work. This staff have been very willing to put in extra hours to do the kind of work necessary to run the academic team tournaments, to provide extra materials for students, and to begin implementing mastery learning. This overall effort and commitment on the part of the staff demonstrates their belief that "We are willing to work this much harder because we believe that this can make a difference in achievement." I question whether this attitude would have been present at the beginning of the year. At that time a feeling that "Why work any harder because it is not going to do any good, since the problem lies within the students and the parents rather than within us," was commonplace. I see this as a significant change in the commitment of the staff.

The mastery learning component of the intervention is something that has seen considerable improvement but is one of the areas that still needs the most work. For the most part the staff has tried to teach, re-teach, and continue to work on various objectives for the time period during which the objective was scheduled. However, the number of staff that have actually been using the sequence of teaching, practice time, diagnostic testing, with reteaching based on those diagnostic results, along with enrichment for other students is not very high. Particular emphasis on the diagnostic testing and reteaching based on that diagnostic testing is probably the aspect of the mastery learning which needs the most improvement.

With regard to the academic team games, School F has probably come close to realizing maximum LoU in this area. There has been one hundred percent cooperation in utilizing a team games approach both within and between classrooms with a well organized system of symbolic rewards in the form of trophies for 5th and 6th grade reading, math, and sportsmanship. These contests between classes at both the 5th and 6th grades have been tied to the basic skill objectives so that at least every two weeks there would be a contest in either reading or math, or both, on the objectives that had been scheduled for that particular two-week period. Problems in the area of team games are at the level of a few individual teachers within their rooms rather than across the building. Some of the staff members did not give sufficient time for students to practice within the rooms, but again this is a problem of individual staff members rather than a general problem. Utilization of team practice time to fill those slack times in the day when the teacher is "resting" or grading papers and the students are milling about or restless is a practice which needs to be more fully implemented throughout the school. But this also relates to a general need to increase classroom time-on-task by improving efficiency of classroom management skills.

The parental involvement component in this building was not very successful. The staff has not really gotten involved in the programs which the Instructional Leader (IL) and the Title I community aide were involved in. There seemed to be a continuing belief that parental involvement in this particular school was almost a hopeless effort, particularly because of the fact that School F had an

attendance area in which all of its students were bussed. No students in this particular building walked to school. As a result the teachers seemed to think that parental involvement was much more difficult and was a major reason why the parental involvement program never really got off the ground. In addition, the lack of positive leadership on the part of the Instructional Leader and the community aide seemingly created a situation in which little progress was made. This is an area in which major work needs to be done for the year.

With respect to grouping practices the principal had already made the decision, amidst a lot of hostility on the part of the staff, to change from homogeneous to heterogeneous classroom assignment of pupils. This continued through the project but this change had been prior to the beginning of the project. A real change has occurred, however, as the project went on in terms of attitudes of the staff toward grouping. The success of the team games and the success of the mastery learning, I think, has made believers of the staff in the fact that heterogeneous grouping is more efficacious than homogeneous grouping. As the year began many of the staff were still strongly pro-homogeneous grouping. The team games, which were extremely successful throughout the year, were perhaps the major impact upon this change in attitudes.

Time-on-task is still a major problem in this building. It has been particularly noted by various staff members that the school climate program has made vast improvements in the academic attitudes of students. However, a need for next year is to improve the level of social attitudes of the students. This is reflected in the decorum in the hall which is sometimes rowdy and usually leads to students

spending time away from class, being tardy, staying out longer than allowed at recess or after lunch hour, or taking extended restroom breaks. This situation has not markedly improved through the year. A major problem of the time-on-task problem remains the lack of cooperative effort between the principal and the staff, and the lack of leadership by the principal in this area. In essence, this entire problem is one of poor school and classroom discipline.

Toward the end of the year School F appeared to be operating in a leadership vacuum. However, the informal leaders of the staff, particularly the Article III reading instructor, the learning center teacher, and the fifth grade team leader, had taken ownership of the idea that the students can learn and that the staff has responsibility for the learning of the students in this building. The staff, headed by the above individuals, seemed to take charge of the program despite the fact that very little leadership was coming from the principal at the end of the year.

This lack of leadership was due to a couple of factors. First, the principal had been sick and the illness had caused her to lose a lot of weight and energy. I think her loss of vitality had weakened her general leadership because of the ill health. The second reason was an increasingly deteriorating relationship between staff and principal. One of the major reasons for this was the area of discipline, in which the principal appeared to have problems with fifth and sixth grade pupils. These problems were reflected in her reluctance to take charge of the time-on-task and a school-wide discipline plan that the staff was concerned with.

Furthermore, the principal had difficulty communicating to the staff her approval and appreciation for their efforts to change, their positive achievements, etc. The staff resented this lack of recognition and informal praise and encouragement by their principal. They perceived that their very real efforts to change should be acknowledged. For these three reasons the leadership function in the building had become almost non-existent. Yet despite this, the informal norms of the staff allowed the school climate program to carry on; the efforts toward improving achievement were still continuing toward the end of the year.

With reference to time-on-task, it must be mentioned that the annual sixth grade field trip was a substantial event in the school in the last three or four months of the year. A considerable amount of sixth grade time was taken away from instructional activities. The money-making projects of selling candy, etc., and the budgeting of time to arrange for the trip, accommodations, parent contact, etc., became the primary focus of the sixth grade during the period from March through the end of May. However, despite this loss of instructional time, at least the sixth grade staff was aware of the amount of time that the trip took away from instruction. From conversations with various staff members it can be inferred that in previous years the amount of time away from task was far greater and that the staff had been unaware of the consequences of this in terms of instruction. This increased awareness of the consequences of time-off-task and a decreasing amount of time spent on the trip itself in comparison to other years is a positive indication of a changing learning climate. However, this increased awareness does

not negate the fact that the trip did take considerable amounts of time from instruction, not only in the individual classrooms for counting money, etc., but also for instructional planning at grade level meetings.

In summary, at the end of the year I would characterize the climate of School F as significantly improved from the beginning of the year. However, the effectiveness of the climate, even though improvements have been made, is far from that of an exemplary school. Preliminary assessment of the BSAP post tests indicate approximately a 4-1 increase in the number of objectives gained from pre to post test compared to the previous year. Again, however, there is significant room for improvement. Those areas needing most improvement would be: (1) a much better and more consistent usage of the complete mastery learning model by all staff members; (2) improved use of the amount of peer instruction and peer practice sessions with respect to the group learning games; (3) vast improvement in the amount of time-on-task from the aspect of instruction by individual teachers due to better classroom management practices and discipline, and in the entire school with respect to an overall building plan for discipline, pursuant to common areas and consistency between rooms; and (4) a vastly improved parental involvement component.

Finally, although the staff has evidenced a major change in their belief about the statement that all students can learn, it must be noted that there are many staff members who are still convinced there exists a group of 30 percent of the children who are slow learners. These staff members are not yet convinced that this group of 20-30 percent of students are indeed able to learn at grade level. A major

change in the belief system needs to occur to convince the staff that virtually all of the students can learn well. However, the staff is now convinced that 70-80 percent of the students can learn, and this is a significant improvement over the beginning of the year. We must remember that the complete change to the normative climate of an exemplary school is unlikely to occur in one year. However, we must also be aware that continued changes and efforts are needed to consolidate the normative changes already made and to extend those gains to the goal of all children achieving at or above grade level.

APPENDIX C

APPENDIX C-1

PROJECT ABSTRACT

PC-4567
(Page 2.2)

LOCATION: School District of the City of Pontiac
TITLE: Curriculum, Resources, Activities and Climate Keyed
GRADES AFFECTED: K-12 to Learning Experiences (CRACKLE)
CATEGORY: Implementation, Category 3, Professional Development Model

TARGET POPULATION:

Students in grades K-12 and all district administrators and teachers

NEEDS SITUATION:

Urban students, especially students of low economic and minority status, show a persistent deficit in the basic skills on reading and mathematics. Low administrator and teacher expectations and other factors related to school climate continue to reinforce these deficits.

PROGRAM DESCRIPTION:

This project will establish an office to address the problem of poor school climate. Project staff will plan and implement an inservice program for all Pontiac administrators and teachers. Also Project staff will develop school climate instructional modules for implementation at both elementary and secondary levels. In addition, the project will produce a training manual for implementing school climate programs in other districts and an inventory for improving school climate in elementary and secondary buildings.

MAJOR OBJECTIVES:

1. Establish a district-wide curriculum council.
2. Conduct a survey of inservice training needs of secondary administrators and teachers.

PC-4567
(Page 2.2 cont'd)

(ABSTRACT CONTINUED)

3. Develop and implement school climate instructional modules for grades K-12.
4. Develop and implement a district-wide school climate improvement inservice program.
5. Develop a school climate organization training manual.
6. Develop a school climate implementation inventory.

REQUIREMENTS FOR SUCCESS:

The major requirements for success include a systematic and district-wide approach to the problem of school climate and high levels of administrator and teacher involvement in project activities.

PC-4567
(Page 2.3)

EVALUATION DESIGN:

The first year evaluation design will rely mainly on the monitoring of project processes. Project records will be maintained to make sure that the test project remains on schedule and that project products are delivered as proposed. During the first year inservice outcomes will be evaluated in terms of administrator and teacher ability to deliver the school climate program to students. In the second year, reading and math achievement of students will be assessed in terms of project impact.

PROJECT OUTCOMES:

Student and Staff Changes

1. Increased math and reading achievement of students in grades K-12.
2. Increased administrators' and teachers' knowledge and skills related to implementation of the school climate program.

PC-4567
(Page 2.3 cont'd)

(ABSTRACT CONTINUED)

Project Products

1. School climate instructional modules for grades K-12.
2. Organization training manual for implementing a school climate improvement program.
3. An inventory for measuring school climate level in secondary and elementary schools.

APPENDIX C-2

CRACKLE REORGANIZATION

First Year: 1979-80

MAJOR ACTIVITIES	Supervisor	MSU Consultant	Program Evaluator	Program Teacher	Needs Assessment Coordinator	TIME LIMITS
1. <u>Preparation of Climate Modules</u>						Jan-March
a) Revise modules for K-12		x	x	x		
b) Print and assemble modules				x		
2. <u>Develop Training Program</u>						Jan-March
a) Write manual	x		x	x		
b) Select support materials	x			x		
c) Set training schedule	x					
3. <u>Develop Climate Needs Assessment</u>		x			x	Jan-May
4. <u>Develop Climate Implementation Inventory</u>			x			Jan-May
5. <u>Conduct Climate Training Program for Principals</u>	x	x	x	x		April-June

Second Year: 1980-81

MAJOR ACTIVITIES	Supervisor	MSU Consultant	Program Evaluator	Program Teacher	Needs Assessment Coordinator	TIME LIMITS
1. <u>Conduct Climate Training Program for Teachers of Selected Buildings</u>	x		x	x		Aug. 18-29
2. <u>Implementation of Climate Program in Selected Buildings</u>	x		x	x		Sept-June
3. <u>Conduct Evaluation of Level of Implementation of Climate Program</u>			x			Dec-June

Third Year: 1981-82

MAJOR ACTIVITIES	Supervisor	MSU Consultant	Program Evaluator	Program Teacher	Needs Assessment Coordinator	TIME LIMITS
1. <u>Continued Implementation of Climate Program</u>	x		x	x		Sept-June
2. <u>Evaluation of Student Achievement in Basic Skills</u>			x			May
3. <u>Conduct Evaluation of Level of Implementation</u>			x			Dec-June

APPENDIX D

APPENDIX D

EARLY CRACKLE EMPHASIS ON AFFECTIVE AND
COGNITIVE DIMENSIONS OF
SCHOOL CLIMATE

SCHOOL CLIMATE IS:

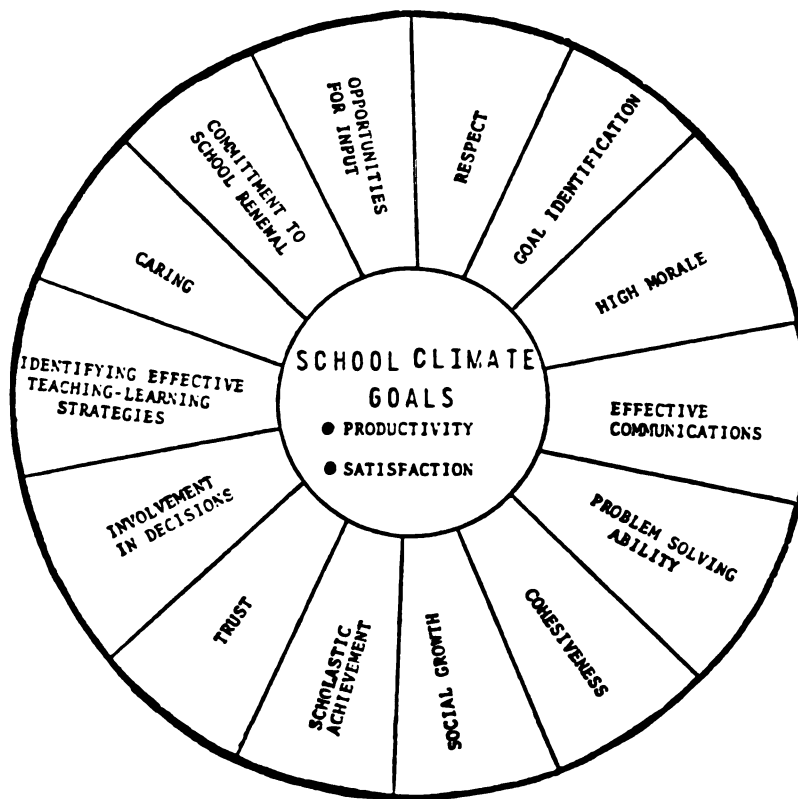


Figure D-1. CRACKLE Representation of School Climate, Fall, 1979

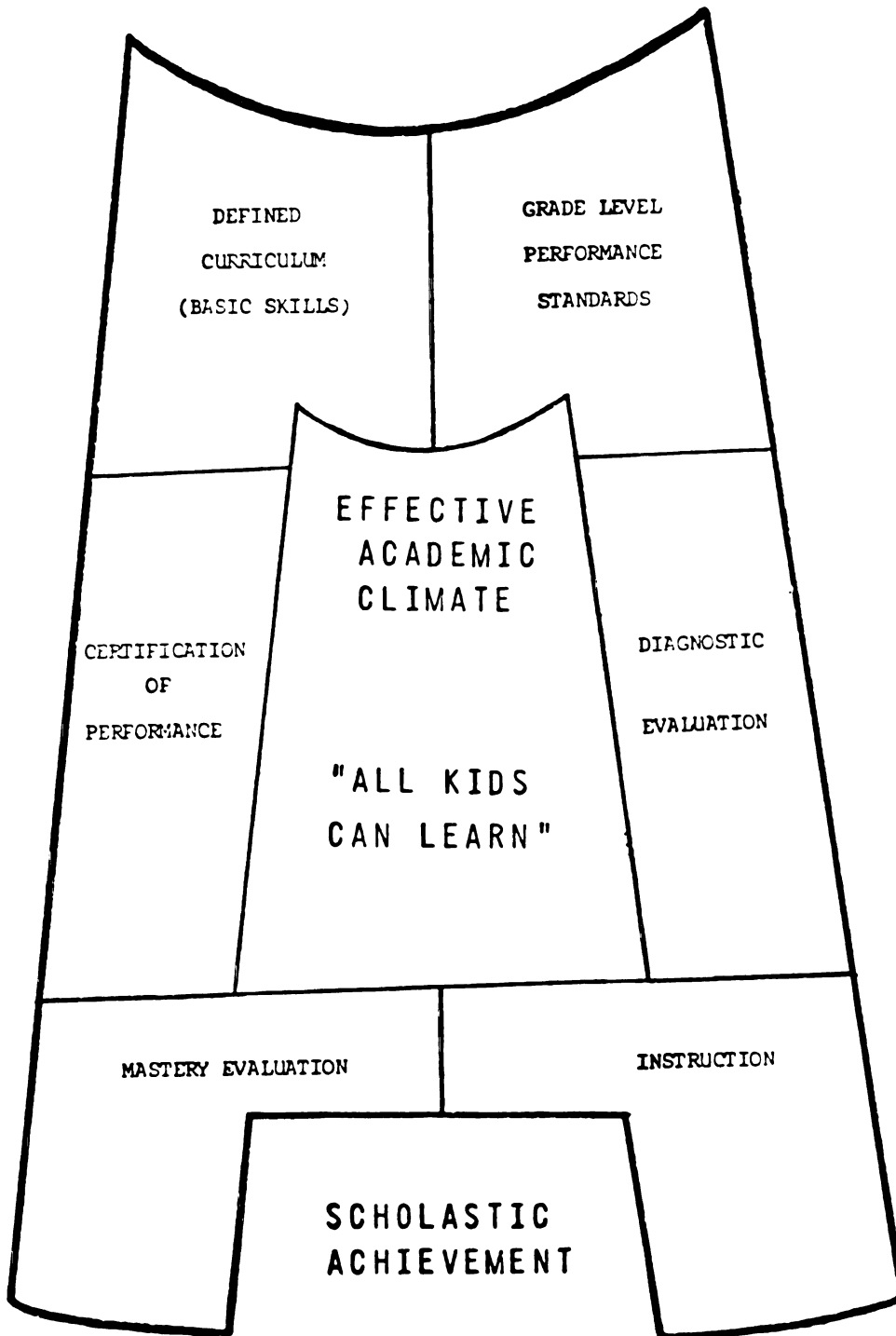


Figure D-2. Enlargement of Scholastic Achievement Dimension of Figure D-1

APPENDIX E

APPENDIX E

CRACKLE DOCUMENTS 1979-80

CRACKLE Seminar Topics

1979 - 80

November	Effective Academic Climate
December	Organizing for Instruction
January	Evaluation of Student Performance
February	Student Motivation
March	Reinforcement and Feedback
April	Homework and Parent Support
May	Assessment of 79-80; Planning for 80-81

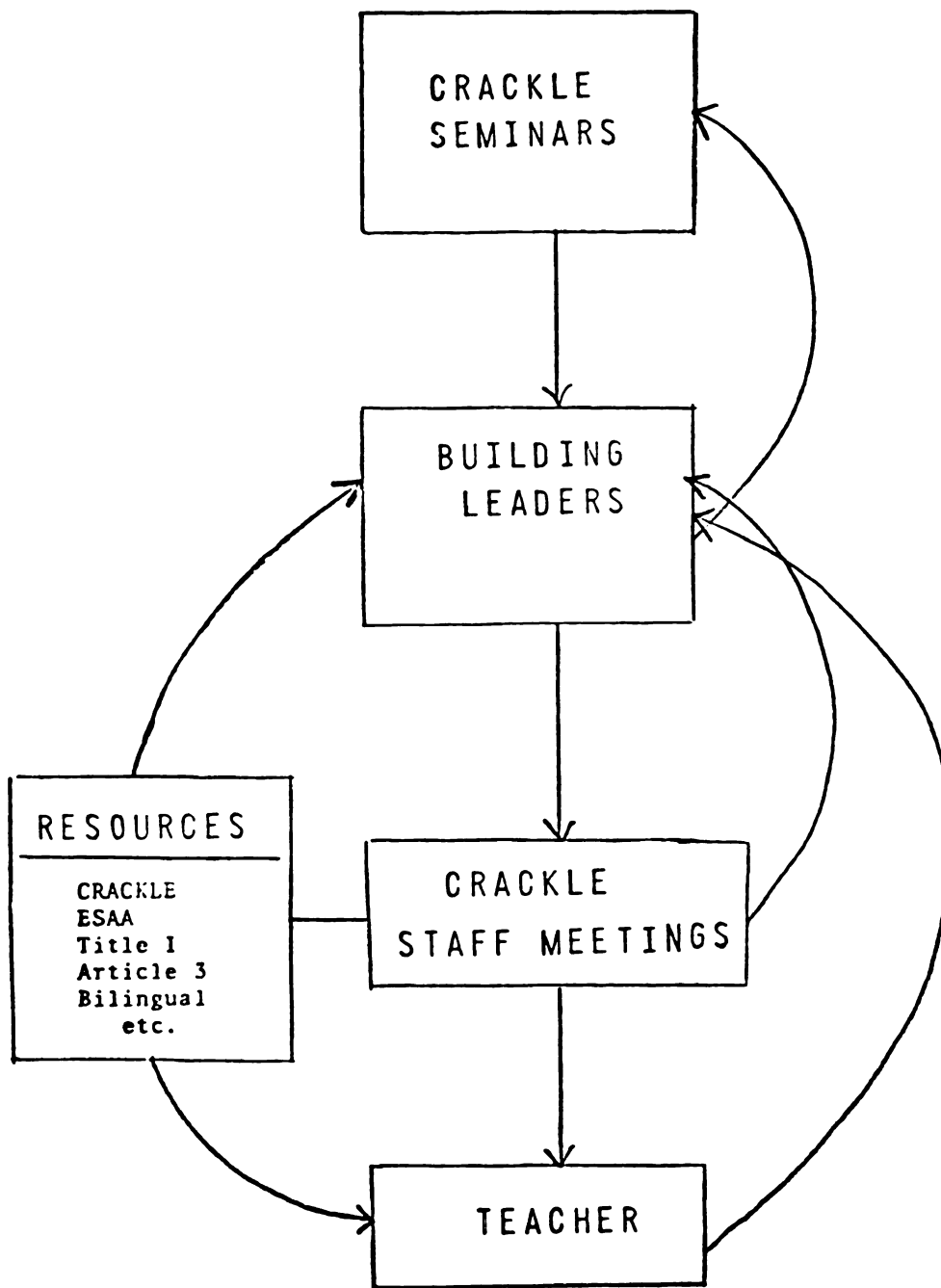


Figure E-1. Relationship between Support Structures and Teachers

CRACKLE Seminar

November, 1979

AGENDA

1. Overview of CRACKLE Project Abstract
2. Purpose of Seminars
3. Student Achievement:
 Where are we?
 Where do we want to be?
4. Effective Academic Climate
5. All Kids Can Learn
6. Seminar Project

CRACKLE Project
-November-

1. Establish structure for disseminating CRACKLE Seminar information and written information.
 - A. Establish monthly CRACKLE staff meeting at your building, to be chaired by building administrator and/or CRACKLE representative(s).
 - B. Get staff agreement on whether meetings should be voluntary or mandatory.
 - C. Discuss whether additional grade level/departmental meetings should be held monthly.
 - D. Conduct first CRACKLE staff meeting prior to your next seminar. Present "Elements of Effective Academic Climate" copies to be provided by CRACKLE project.
2. Inform the CRACKLE supervisor of details--what agreement was established on meetings, time, place, etc.--within two weeks (form attached).

Resource people will be on call to facilitate meetings, at your request.
3. Be prepared to discuss your dissemination plans and level of staff interest at next seminar.

CRACKLE Project

School _____

CRACKLE meetings will be held monthly:

Date _____

Time _____

Location _____

Attendance by staff will be:

Voluntary _____

Mandatory _____

Additional grade level/departmental meetings _____ will

_____ will not be held.

Date _____

Time _____

Place _____

Comments, if any:

CRACKLE Representative_____
Principal

Please return to CRACKLE, 44 State Street by Dec. 14, 1979

CRACKLE

ELEMENTS OF EFFECTIVE ACADEMIC CLIMATE

BELIEF SYSTEM

The basis of effective academic climate is a belief that virtually all students can and will achieve at grade level. Academic standards with high expectations for achievement, objective, but positive, evaluation of ability, and an acceptance of a responsibility for insuring that all students are successful characterize the practices of the teacher.

The norms of the building staff reinforce the belief that all students can and will learn and the staff demonstrates a collective effort to make it happen. Student norms exist that support and encourage high achievement.

DEFINED CURRICULUM (BASIC SKILLS)

1. The identified basic skills represent essential knowledge for all students.
2. Teaching the complete basic skills program at grade level is required of every teacher.
3. A basic skills program does exist for grades K - 9:

Grades K - 6: Reading and Math

Grades 7 - 9: Language Arts and Math

The existing program should be assessed to determine its adequacy.

4. The established basic skills curriculum, including texts, should be standardized in all schools.

GRADE LEVEL PERFORMANCE STANDARDS

1. Performance status should be defined in terms of a standard, or level of performance, that demonstrates mastery of the basic skills. For 1979-1980, the students operating at performance status demonstrate mastery of 75% of the grade level basic skills.
2. Students should be expected to reach performance status at grade level on the skills identified in the basic curriculum.

3. This expectation for achievement must be internalized by teachers and administrators and it must be communicated to both students and parents with resolve and commitment.
4. The primary thrust for insuring that students reach performance status comes from the teacher. Support for the teacher comes from the school and the School District.

The individual teacher's responsibility is to demonstrate commitment and competency through establishing positive expectations for learning and using effective teaching methods.

The school's responsibility is to establish a collective positive climate for academic achievement.

The School District's responsibility is to provide direction and resources, both human and material, to support teacher efforts.

DIAGNOSTIC EVALUATION

1. The principal and teachers should use the SNAP basic skills evaluation data to assess and improve student achievement.
2. The teacher should use diagnostic procedures in addition to SNAP pre-test results to identify serious skill deficits below grade level that will prevent or limit student success on the grade level program.
3. The student's basic skills instruction should reflect and address learning needs identified in the diagnostic evaluation.

INSTRUCTION

1. Mastery of the identified reading and mathematics basic skills at each grade level is the primary responsibility for instruction, 1979-1980.
2. Mastery of the grade level basic skills in reading and mathematics is the minimum goal for all students.
3. Instruction should be designed to:
 - a) enable students to overcome skill deficiencies critical to the mastery of the grade level basic objectives.
 - b) enable all students to master the grade level basic skills.
 - c) challenge students that are capable of going beyond the grade level basic skills.
4. The emphasis should be on whole class instruction with all students expected to learn the same basic skills.

5. The process of instruction should proceed in an orderly manner:
 - a) identification of skills to teach
 - b) presentation of skills to the whole class
 - c) assignment of activities for practice and reinforcement
 - d) assessment of student progress
 - e) personalized corrective assignments to bring student up to performance status
 - f) assignment of enrichment or extension activities for students capable of going beyond the basic program
6. The practices of peer tutoring and academic gaming should be employed to increase student learning and motivation.
7. Grouping practices for other than whole class lessons should place students in flexible, heterogeneous instructional groups. Ability grouping, tracking, and other sorting arrangements should be discontinued.
8. Time spent in active learning (time-on-task) should be maximized for students.
9. Teachers should use clear reinforcement and feedback techniques with students. Correct responses should be reinforced; incorrect responses should be constructively corrected.
10. Homework should be assigned to students as often as necessary to reinforce and maintain skill proficiency. Parents should be expected to provide adequate time and space for homework and to see that assignments are completed on time.

MASTERY EVALUATION

For 1979-80,

1. Mastery is defined as a specified percent of correct responses out of a possible number of items on a test.

Grades K-6: 3 test items for every skill; Mastery-criterion is 3 correct responses out of 3 items (100%)

Grades 7-9: 4 test items for every skill; Mastery-criterion is 3 correct responses out of 4 items (75%)

2. The student should be expected to demonstrate that mastery level performance has been achieved for the grade basic skills.
3. The assessment of mastery status is generally done at the conclusion of a skill unit and at the end of the year post-test time.
4. If the student fails to reach mastery status, reteaching (correctives) is to occur using alternative approaches.

CERTIFICATION OF PERFORMANCE

1. Consistent with the expectation that students will learn is the practice of certifying that learning has occurred according to the established performance standard.
2. The purpose of certification of performance is to officially establish that a student has or has not achieved according to the expected performance standard for the grade.
3. The teacher is the appropriate person to certify student performance.
4. The SNAP post-test is the primary instrument for certification as it requires the student to demonstrate understanding of the entire grade program.
5. If a student achieves mastery on 75% or more of the basic skills for the grade on the post-test, the teacher will indicate on the SNAP Individual Profile that performance status has been attained. One copy will be sent home; one copy will be put in the student's CA-39.
6. If the teacher feels that the post-test results do not accurately reflect the student's understanding of the basic skills for the grade, the teacher can indicate this on the SNAP Individual Profile.
7. Records of certification should be available when the student goes to a new teacher or to a new school.
8. The teacher and the school should make a genuine effort to inform parents as to the student's success or lack of success to reach performance status on the grade level basic skills.

CRACKLE Project

-January-

At your January CRACKLE staff meeting:

1. Consider options for becoming familiar with the information in the School Climate Activities Training modules.

Suggestion: Schedule 2 or 3 ½-day released-time workshops, one a month, to get overview of material.

Use existing building meeting schedule for ongoing modification and extension of the information in the modules.

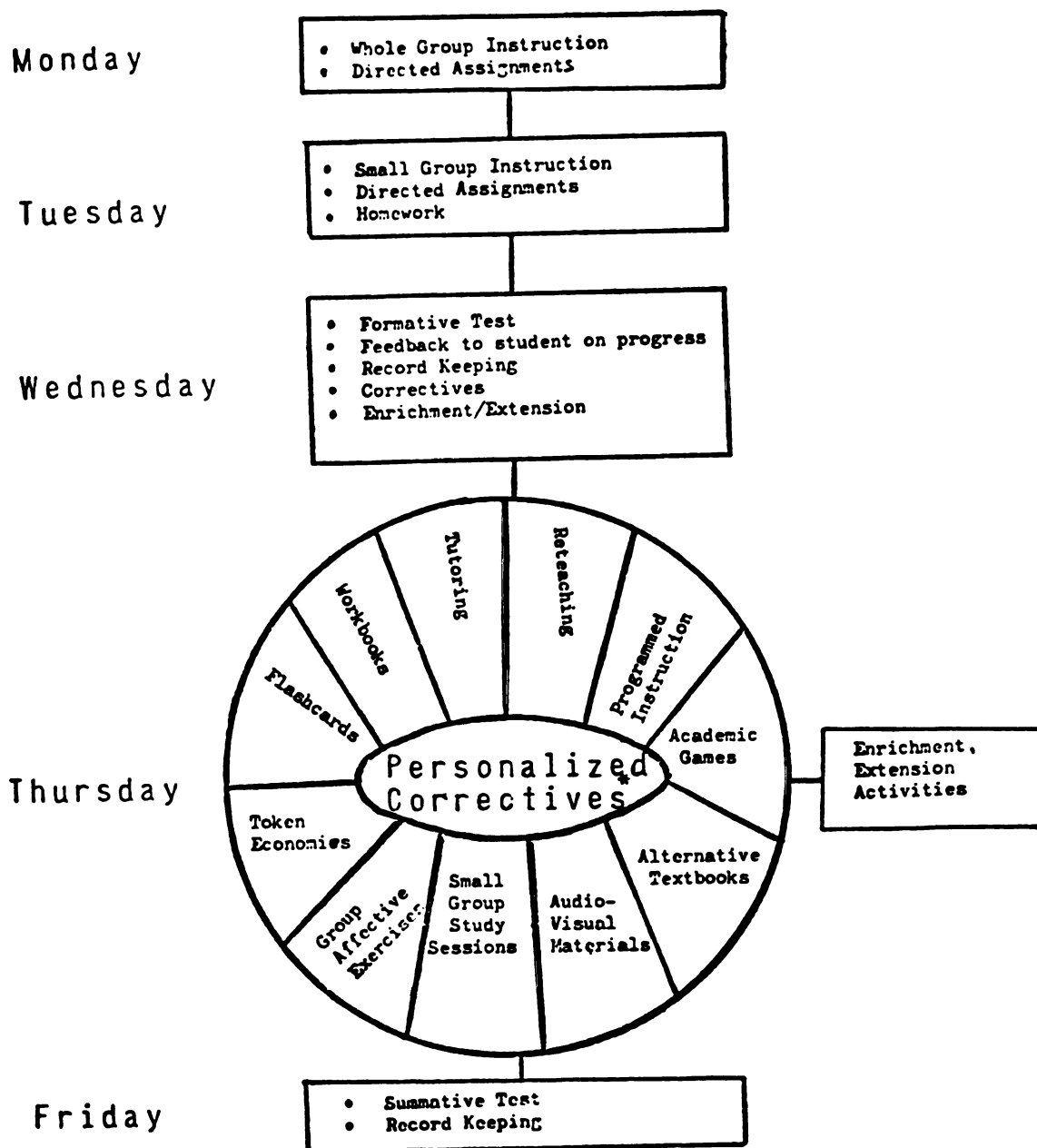
Note: For best results in using the modules, participants should study the material prior to a workshop or meeting so the time can be spent discussing the ideas, not teaching them.

2. Come to agreement on a method or procedure for using the modules.
3. Identify dates and times for workshops/meetings.
4. Identify people and materials needed for discussing the modules.
5. Complete the survey on Building Inservice Needs and return it to CRACKLE, 44 State Street.

The CRACKLE staff takes this opportunity to thank each and everyone of you for your cooperation and hard work. We appreciate it!!!

We wish you a relaxing holiday and hope you have a CRACKLE New Year!!!

ORGANIZING FOR MASTERY



* Additional resource persons, such as the Article 3 reading teacher, aides, adult volunteers, etc. should be utilized for correctives under the direction of the classroom teacher.

Figure E-2. Schematic Diagram of Weekly Schedule for Mastery Instruction

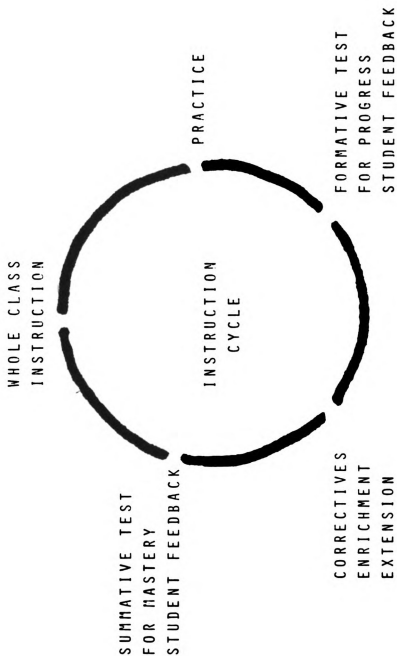


Figure E-3. Instructional Cycle Incorporating Elements of Mastery Learning

POSSIBLE ROLE BEHAVIORS TO FACILITATE A MASTERY LEARNING INSTRUCTIONAL PROGRAM¹

	Planning	Implementation	Evaluation
Central Office	Set and Prioritize academic goals Coordinate instructional and curriculum resources Provide support for district level planning of objectives Development of consistent goals across various instructional school programs	Supply needed resources at building level Provide in-service time consistent with program philosophy	Monitor school level adoption Provide rewards for buildings that meet district goals Provide periodic consultation and support for principals relative to mastery learning
Principal	Provide leadership in program dissemination Set and coordinate school goals with district goals Supply initial planning time for teachers Provide opportunity and support for teachers to schedule objectives	Support and reward expected behavior; sanction negative behavior Elementary: provide leadership of team meeting Secondary: provide leadership for various departments Coordinate various instructional programs toward enhancing mastery for all students	Monitor school personnel (team and individual) Ensure all programs consistent with mastery philosophy Monitoring student progress Dissemination and discussion of test data with respect to school progress

POSSIBLE ROLE BEHAVIORS TO FACILITATE A MASTERY LEARNING INSTRUCTIONAL PROGRAM¹

Planning	Implementation	Evaluation
Coordinate setting and scheduling of objectives Coordinate support personnel-teacher cooperation Secure materials for teaching, testing, reinstruction Coordinate media center for reinstruction and enrichment Coordinate planning for group games	Article III - Reinstruct and reinforce objectives Department Head and Title I - Coordinate logistics of materials - Take lead in developing instructional and corrective strategies - Facilitate team meetings Title I Aides; Special Education - Extra personalized and specialized reinstruction to help students master objectives - Enrichment activities - Provide in-class instructional support rather than pull-out programs - Provide demonstration of lessons on mastery techniques	Assist principal in disseminating and discussing test results Assist teachers in utilizing diagnostic information for specific remediation Coordinate assessment of and planning for students not mastering objectives

Support Personnel

POSSIBLE ROLE BEHAVIORS TO FACILITATE A MASTERY LEARNING INSTRUCTIONAL PROGRAM¹

	Planning	Implementation	Evaluation
Teacher Practitioner	- Producing teaching strategies--whole group and individual correctives - Collectively setting and scheduling objectives - Producing formative and summative tests	Steps of Mastery Model	Utilizing formative and summative tests - immediate feedback to students - correctives/enrichment - rewards for student mastery Monitoring program effectiveness - for students not achieving Feedback to administration and support personnel on student progress
R & E	- Coordinate and develop bank of formative and summative tests - Plan for data dissemination to teachers for effective modification and improvement of school program - Develop parallel forms of basic skills tests	Supply tests for practitioners Offer in-service regarding use of test data for program enhancement	Report BSAP data to all levels for use in school evaluation and program development Analyze data consistent with mastery learning philosophy

¹The behaviors suggested are not exhaustive of the possibilities for any role. These behaviors are general ideas for implementation which are not intended to dictate or subvert existing policy. They are ideally related to district adoption of a mastery learning philosophy.

SNAP INDIVIDUAL PROFILE

QUIROGA FIDE2321219

RIGHT PRE 38 PERCENT RIGHT 50. MASTERED PRE 5
 RIGHT POST 57 PERCENT RIGHT 75. MASTERED POST 12
 RIGHT GAIN 19 ITEMS MASTERY GAIN 7 OBJECTIVES
 PCT MSTRD PRE 19.0 PCT MSTRD POST 46.0 PCT GAIN 27.0
 POTENTIAL OBJECTIVE MASTERY GAIN 21.
 PERCENT OBJECTIVE MASTERY GAIN 33.

OBJ	ITEMS	MSLV	PRE	POST	GAIN		
1	1	1	0	1	1	RDG301	IDENT BASAL VOCAB
2	3	3	0	2	2	RDG302	SILENT CONSONANTS
3	3	3	0	3	3	RDG303	VOWEL + R
4	3	3	2	2	0	RDG304	PRONOUN REFERENT
5	3	3	1	1	0	RDG305	SYNONYMS
6	3	3	3	3	0	RDG306	ALPHABETIZE
7	3	3	2	3	1	RDG307	NUMB/SYLLABLES
8	3	3	1	1	0	RDG308	FIGURATIVE LANGUAGE
9	3	3	3	3	0	RDG309	HOMONYMS
10	3	3	1	3	2	RDG310	VOWEL PAIRS
11	3	3	0	2	2	RDG311	SEQUENCE
12	3	3	0	2	2	RDG312	MAIN IDEA
13	3	3	1	1	0	RDG313	AUTHORS PURPOSE
14	3	3	2	2	0	RDG314	INFORMATION SOURCE
15	3	3	2	3	1	RDG315	CAUSE/EFFECT
16	3	3	2	1	-1	RDG316	DICTIONARY DEFIN.
17	3	3	3	3	0	RDG317	METHOD ARRANGE DATA
18	3	3	2	2	0	RDG318	MATCH CONVERSATION
19	3	3	2	1	-1	RDG319	NEIGHBORHOOD MAP
20	3	3	2	2	0	RDG320	NEWSPAPER
21	3	3	0	3	3	RDG321	QUESTION MARK/PER.
22	3	3	1	2	1	RDG322	REAL/MAKE BELIEVE
23	3	3	3	3	0	RDG323	MISSING WORD
24	3	3	3	3	0	RDG324	STORY ENDING
25	3	3	2	3	1	RDG325	CHARACTERS FEELINGS
26	3	3	0	2	2	RDG326	GENERALIZATIONS

CERTIFICATE OF PERFORMANCE

_____ Mastery of 75% of the grade level objectives has been achieved on the posttest.

_____ Mastery of 75% of the grade level objectives was not achieved on the posttest but other records indicate that the student does understand the material.

_____ Mastery of 75% of the grade level objectives was not achieved this year.

Teacher _____ Date _____

CRACKLE

SCHOOL LEARNING CLIMATE
STAFF DEVELOPMENT PLAN 1980-81

Month	Building Leadership Team (2:00-5:00 p.m.)	Principal's Meeting (1st Monday)	Grade/Department Meetings (Bi-weekly)	Staff Inservice
August	Orientation (August 13-14)			Climate Orientation (August 26-27)
September	Planning and Managing the Basic Skills Program (Sept. 4)	Academic Goals and Expectations for Learning (Sept. 8)	1. The Skills Calendar 2. Managing the Basic Skills Program	
October	Discipline and Classroom Management (Sept. 22)	Discipline and Class- room Management for Our School (Oct. 6)	1. Building a Classroom Discipline Plan 2. The School Discipline Plan	Classroom Management Workshop ()
November	Effective Instruction (Oct. 20)	Developing Effective Instructional Prac- tices (Nov. 3)	1. Considerations for a LPM Approach 2. What Can We Do This Year?	Learning for Mastery Workshop ()
December	Team Learning Games and Grouping (Nov. 17)	Utilizing Group Dy- namics to Raise Achievement (Dec. 1)	1. Team Learning Games 2. Grouping Practices	Team Learning Games Workshop ()
January	Academic Engaged Time and Motivation (Dec. 15)	Increasing Student Productivity and Interest (Jan. 5)	1. Practices for Increas- ing Engaged Time 2. Increasing Motivation	
February	Learning with Retention and Reinforcement (Jan. 19)	Practices for Im- proving Student Performance (Feb. 2)	1. Increasing Retention 2. Reinforcement and Feedback	

CRACKLE

SCHOOL LEARNING CLIMATE
STAFF DEVELOPMENT PLAN 1980-81

Month	Building Leadership Team (2:00-5:00 p.m.)	Principal's Meeting (1st Monday)	Grade/Department Meetings (Bi-weekly)	Staff Inservice
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February	Learning with Retention and Reinforcement (Jan. 19)	Practices for Im- proving Student Performance (Feb. 2)	1. Increasing Retention 2. Reinforcement and Feedback	

SCHOOL LEARNING CLIMATE
STAFF DEVELOPMENT PLAN 1980-81
(continued)

Month	Building Leadership Team (2:00-5:00 p.m.)	Principal's Meeting (1st Monday)	Grade/Department Meetings (Bi-weekly)	Staff Inservice
March	Use of Evaluation and Developing Test Skills (Feb. 16)	Maximizing Student Gains Through Assessment (Mar. 2)	1. Formal and Informal Assessment 2. Test Taking Skills	
April	Parent Support and Tutoring (March 23)	Parent Support and Involvement (Apr. 6)	1. Parent Support 2. Parent Involvement	
May				
June				

APPENDIX F

APPENDIX F

RECOMMENDATIONS FOR BASIC SKILLS

Summary of Recommendations
Concerning Basic Skills Policies and Practices
to the Pontiac Board of Education
February, 1978

The recommendations discussed in this review are summarized below. Some are clarification or reaffirmations of policies that have existed, but, as frequently happens in complex organizations, have not been fully understood or not carried out as intended.

1. Mastery of minimum basic skills in reading and mathematics should be specified as the primary goal for the elementary schools.
2. Mastery of the minimum basic skills of reading and mathematics should be the goal for all students in elementary schools.
3. The responsibility for the achievement of the minimum basic skills in reading and mathematics should be placed at the school building and cluster level.
4. The effectiveness of educational programs in mastery of basic skills should be evaluated by school units and clusters rather than individual teachers.
5. The primary basis for evaluating an elementary school's effectiveness should be the objective measures of the basic skill outcomes.
6. The basic minimum reading, mathematics and related achievement objectives should apply to all students, and each school and cluster should be evaluated on the mastery of these objectives by all students.
7. Each school should be responsible for its compensatory education students achieving the basic skill objectives specified for all other students.

8. The Research and Evaluation Department should continue to provide appropriate objective-referenced data for evaluation. Each school principal should be responsible for evaluating that school's instructional program(s), and the Director of Elementary and Secondary Education should make comparative evaluation of all schools.
9. The evaluation of each school's effectiveness in achieving mastery of the basic skills should be publicly disseminated as in the past and the patrons of each school should be systematically informed of the evaluation.
10. A program of public recognition and rewards for schools that have the highest levels of effectiveness in mastery of desired objectives should be established.

Priorities for Instruction, 1979-80Elementary (K-6)

1. Mastery of the identified reading and math basic skills on each grade level is the primary responsibility for elementary instruction for 1979-80.
2. The mastery of the grade level basic skills in reading and math is the minimum goal for all students.
3. Instruction should be designed to
 - a) enable students to overcome skill deficiencies that are critical to the mastery of the grade level basic objectives.
 - b) enable all students to master the grade level basic skills.
 - c) challenge students that are capable of going beyond the grade level basic skills.
4. Each principal and building professional staff will be involved in the implementation of the district climate program.

LIST OF REFERENCES

REFERENCE NOTES

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