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ABSTRACT

This report reviews the research on school and classroom environments, discusses the implications of such research for the design and evaluation of secondary school programs, and provides an annotated bibliography of the relevant literature. Topics discussed in the review include: (1) the semantics of school environment research; (2) the structural basis for concepts of multiple environments in schools; (3) the relationship between environments and educational outcomes; (4) the relationship of adolescent attitudes and behavior to educational environments; (5) the importance of extending urban secondary school reforms into the community; and (6) new knowledge and issues addressed in the 1970s that suggest directions for secondary school reform. The attached annotated bibliography provides approximately forty citations of published works that deal with plans for reform and research of urban secondary school and classroom environments and their effects on students. (Author/GC)

Secondary School Environments and Student Outcomes:

A Review and Annotated Bibliography

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Introductory Statement

The Center for Social Organization of Schools has two primary objectives: to develop a scientific knowledge of how schools affect their students, and to use this knowledge to develop better school practices and organization.

The Center works through five programs to achieve its objectives. The Studies in School Desegregation program applies the basic theories of social organization of schools to study the internal conditions of desegregated schools, the feasibility of alternative desegregation policies, and the interrelations of school desegregation with other equity issues such as housing and job desegregation. The School Organization program is currently concerned with authority-control structures, task structures, reward systems, and peer group processes in schools. It has produced a large-scale study of the effects of open schools, has developed Student Team Learning Instructional processes for teaching various subjects in elementary and secondary schools and has produced a computerized system for school-wide attendance monitoring. The School Process and Career Development program is studying transitions from high school to post secondary institutions and the role of schooling in the development of career plans and the actualization of labor market outcomes. The Studies in Delinquency and School Environments program is examining the interaction of school environments, school experiences, and individual characteristics in relation to in-school and later-life delinquency.

The Center also supports a Fellowships in Education Research program that provides opportunities for talented young researchers to conduct and publish significant research, and to encourage the participation of women and minorities in research on education.

This report, prepared by the School Organization program, reviews and discusses research on school and classroom environments related to the improvement of secondary education.

Abstract

This review and discussion of research on school and classroom environments could assist the design and evaluation of secondary school programs. The paper and its annotated bibliography were prepared originally for the Urban Development Probram at Research for Better Schools. It is one of several concentual papers prepared for RBS on urban secondary school environments.

Several topics are discussed: the semantics of school environment research; the structural basis for concepts of multiple environments in schools; the link of environments and outcomes; the relationship of adolescence to educational environments; the importance of urban secondary school reforms that extend education beyond the walls of the school building; and the issues addressed in the 1970's that suggest directions for secondary school reform.

An annotated bibliography accompanies the discussion. It includes selected publications that explore in detail the perspectives discussed in the paper.

Introduction

> In many cities, school buildings were dank, dark, unsafe and crowded; . . . frequently teachers were grotesquely unprepared for their work; the old curriculum was often hopelessly rigid and out of touch with current reality. . . . And it is clear that urban education faced staggering tasks of preparing hundreds of thousands of poor children from dozens of ethnic groups to survive and advance in American society.

These words describe the schools in U. S. cities in 1890-1920 (Tyack, 1977). They could describe the halls of darkness and walls of dirt that Kozol abhorred in the 1960's. Or, they could describe many urban schools of the '80's, filled with minority students of varied ethnic backgrounds who are being poorly served and poorly prepared to improve their chances of adult success. Times change and do not change in urban schools.

The description by Tyack describes the physical space, the teachers' training, the curriculum and its meaning to the students, and the relationship of education and work, adolescence and adulthood. These themes are important in today's discussions about the conditions of education because they establish that there are many separable aspects of the school environment. One could repair the physical hazards without correcting crowdedness; one could train teachers in certain skills without adjusting the curriculum; one could change the curriculum without making it meet the abilities and requirements of the students and their futures; and one could do any or all of these things in an atmosphere of coercion that would alienate the students and keep them out of school.

Attention to only one aspect of a school environment will not necessarily lead to school improvement and effectiveness. Although the "school environment" exists, it is the analytic study of the separable dimensions of school environments that is necessary for successful secondary school reform. If we look within the total environment of the school, we see that schools have learning climates and living climates that simultaneously affect students. It is necessary to examine the dimensions of the learning and social environments to understand the effects of particular environmental characteristics on student achievements and behaviors.

No matter how important we consider the teaching of basic skills, the school environment is more than an instructional climate. In secondary schools, students' skills may vary from second grade to college levels. The instruction students receive ranges from remedial math to calculus, from general science to physics, from the simple to the complex. At all instructional levels, the ways that schools encourage and reward attendance, attention, commitment, and student progress determine whether secondary school students will come to school, whether they will learn, and what they will learn in basic skills and in other skills that affect their chances for success as adults.

The task for high school reform is to create an instructional program and a social environment that will capture the interests and intelligence of an energetic and curious population, meet the students at their skill levels, challenge them to increase their academic skills and prepare them for adulthood. This is not an easy task, and we are only beginning to consider how to translate ideas for reform into practice.

This paper includes discussions on several topics: the semantics of school environment research; the structural basis for concepts of multiple environments in schools; the link of environments and outcomes; the relationship of adolescence to educational environments; the importance of urban secondary school reforms that extend education beyond the walls of the school building; and issues addressed in the 1970's that suggest directions for secondary school reform. The topics were selected so that the review of research would influence plans for school reform to include evaluations of the implementation and effects of new secondary school environments.

Semantics of Research on Environments

Secondary school environments have been studied by sociologists, social psychologists, community psychologists, human ecologists, educators and others. Each group has favorite terms that emphasize particular aspects of the school environment. The psychologists, community psychologists and social ecologists have focused attention on behavior settings, ecological units, synomorphs, and milieux (Barker and Gump, 1964; Moos and Insel, 1974; Bronfenbrenner, 1978). They study the relationships between the environment and psychological states or reactions of those who experience the environment. In schools, they may examine the link between the physical setting and the social or learning activities that occur in those settings. For example, the halls and "hall behavior" are different from science labs and "lab behavior."

Schools expect students to accomodate their behavior to the opportunities and constraints of each behavior setting, to change behavior as they move from setting to setting, and to learn the behaviors, attitudes and knowledge unique to each setting. To a great extent, students do accomodate

their behavior. However, some students do not adjust to the demands of different settings because they do not understand the expectations for behavior, disagree with the norms or how the norms are enforced, or reject the behaviors and the settings. In addition, the norms for hall or lab behavior can differ across schools, or within schools for different groups of students. There are important questions for future research in urban secondary schools that can be phrased in terms of behavior settings. For example, we need to learn how to create school settings that enable more students to understand the expected behaviors and perform successfully; and which settings could be structured differently for different groups of students and still lead to improved learning.

Sociologists and social psychologists have focused attention on school environments with the terms contexts, climates, dimensions, and structures and processes of environments. Studies of school contexts use school or public records of school characteristics, or aggregated reports from students about patterns of behaviors, values, expectations, or interactions. Students may be asked to report demographic characteristics, school norms for behavior, or attitudes or values of the total student population of of some defined group. For example, in some studies students' reports of their families' socioeconomic status (SES) are averaged to form the school social class context. The term climate is sometimes used synonomously with context. For example, students may be asked to report whether they or other students think good grades are important, whether they admire bright students, or whether they seek to be an academic leader. The proportion of students responding positively to a set of items about school or personal norms for achievement may be used to represent the

academic context or academic climate of the school. Across different schools, or across different programs within schools, differences in the "push" or "press" for achievement in academics have been interpreted as differences in academic contexts or academic climates. Coleman (1961) used this approach to represent student "value climates."

The term climate is also used to characterize specific processes or practices of a school or teacher's classroom. Walberg (1968, 1969) and Anderson (1970) devised the Learning Environment Inventory (LEI) to depict several dimensions of the classroom learning climate. Stern (1970) introduced a comprehensive measure of college environments; McDill and Rigsby (1973) measured dimensions of the high school academic climate; Moos (1978, 1979) and Trickett (1979) devised the Classroom Environment Scale (CES) to measure nine dimensions of the classroom environment; Brookover and his associates (1979) measured the academic climate in elementary schools; Epstein and McPartland (1975, 1979) measured aspects of the decision-making climate in elementary and secondary schools.

These measures of the classroom environment or climate collect information in two ways. One method employed by the LEI and the CES, for example, uses students as reporters about the general conditions of the school or class. That is, each student reports what "the school" or "class" is like, on the average, to all other students, or to some unspecified "other" that is in the student's mind. The average report about the school or class is used as the indicator of climate. A second method uses students as individual reactors, reporting their personal perceptions of the school or of the class as they experience it. The average of the individuals' experiences is the indicator of climate. There are some advantages to starting with measures of individual reports of personal estimates and

then aggregating reports to represent the group or social context (see Baird, 1976 for a discussion of this topic, and Epstein, 1981, for examples of research using data from students as reporters and as reactors.)

Some researchers use the term learning climate to mean the total school environment, because of the school's overriding goal of academic instruction (Lezotte, Miller, Hathaway, Passalacqua and Brookover, 1979). Others point out that all students within a school do not experience the same environment. There may be important differences in opportunities, demands, and actual experiences within schools across grades, subjects, classrooms, ability groups, sex, race, or other subgroups, creating different "environments" for students (Wolf, 1974; Dreeben and Thomas, 1980; Meyer, 1980; Epstein, 1981). Analytically, it is to the researcher's advantage to identify sub-environments, structures, or multiple dimensions of climates to study effects of environments on student outcomes. An "average" school climate may not accurately reflect the experiences of any of the students. The average climate may be useful for studying gross, between-school differences, but there is reason to believe that important differences exist within schools that can provide researchers with clearer evidence of the effects of school structures, processes and experiences on students' academic and non-academic development.

The school context or climate is assumed to shape or motivate the achievement, behavior and attitudes of students. This means that outcome measures can be theoretically tied to the separate dimensions of school and classroom climates. To assess the effects of different climates on students, researchers have looked mainly at the outcomes of achievement and college plans. Not only has the selection of these variables been

restrictive in representing measures of the multiple goals of schooling, but problems abound when the measures that characterize the school climate --e.g. achievement press--and the measures of effects--e.g. student aspirations--are based on similar, concurrent measures.

For some questions it would be useful to distinguish the physical or architectural, demographic, social or interpersonal, instructional, and other organizational dimensions of the environment. Such qualities as the hierarchical arrangement of school personnel, size and features of the school, size of student population, racial, social class or other demographic characteristics, grouping procedures, student participation, clarity of instructional goals are analytically separable aspects of the school environment. Variation across or within schools on these dimensions may affect different student outcomes. We have very little research at the secondary school level that builds on this perspective of school environments.

Across disciplines the different terms favored in research--contexts, climates, settings, or structures--all are based on the assumption that we cannot understand student behavior without examining the environment in which it occurs. The longstanding Lewinian model that behavior is a function of the person and the environment has been elaborated by the theories and measures of psychologists and sociologists. Now, by "behavior" we mean academic and nonacademic behaviors, and the way behavior changes over time; now, by "person" we mean previous and current measures of the person's characteristics, achievements and behaviors; and now, by the "educational environment" we include the manipulable or alterable characteristics of the instructional and social environments in and out of the school building.

The Structure of the School Environment

Researchers differ in their conceptions of the structure of school environments. Some emphasize the whole environment and differences across schools; others emphasize the multiple dimensions of environments, across and within schools.

Research and practice has shown that schools can have unique environments. The most dramatic between-school differences appear in "magnet" or "alternative" schools that build their environments around an academic subject area or around an educational philosophy, or in private schools that build their environments around a selected student population or a particular approach to education. The alternative and private secondary school environments can be as unique as the distinct colleges or major fields described by Blau and associates (1979), Feldman and Weiler (1976) and others who conduct research on postsecondary educational environments. The descriptions of alternative and magnet schools (Levine and Havinghurst, 1977) and research on different kinds of alternative and private high schools (Moos, 1979, Moos and David, 1981) illustrate with examples the extent of between-school differences in environments.

There are also unique environments within schools. Magnet programs, mini-courses, and "houses" or schools-within-schools divide a single school into separate organizations (Kraegel, 1977; Kozberg, 1980; Hearn and Moos, 1979; Newman, 1980). The aim is to create better, smaller, more responsive environments that capture students' interests and permit students to follow different paths in their education. Most secondary schools are divided into curriculum tracks, subject areas and academic departments, extracurricular programs, and grade levels that create different

environments within schools (Alexander and McDill, 1976; Epstein, 1981; McPartland and Epstein, 1977; Spady, 1970). The subdivisions within schools may create dramatically different climates for learning and social interaction.

Most discussions of school environments recognize the physical, social, psychological and cognitive dimensions of school and classroom life, and the benefits of studying school environments with attention to analytically separable properties. In addition to the gross distinctions among programs across and within schools, researchers are beginning to increase knowledge about the structures and processes that guide the daily activities of life in school. At least, they are beginning to develop lists of potentially important environmental factors.

For example, researchers have outlined the factors that appear to be most important for creating environment with positive affect and high productivity. The recent Phi Delta Kappa (1980) study of effective urban elementary schools suggests that student affect, student involvement, responsive report (evaluation) systems, teacher attitudes and teacher expertise are particularly important aspects of the school climate. These "effective" qualities include variables that are outcomes in their own right, like "affect," and organizational features, like "student involvement." The models used for research on school environments and outcomes must clarify when "climate" is an outcome of an organizational plan, and when "climate variables," like "affect" are mediating variables that influence achievement and other student outcomes. A clearer, extended list of effective organizational qualities in secondary schools are specified by the Wisconsin R and D Center, (WRISE, 1980). These environmental qualities include individualized programs planned within a flexible curriculum, work experience, responsive

evaluation, student involvement in decision making, small size of within-school units for instruction and counseling; family-school cooperation, school-community relations, and continuous research and improvement of school environments and student outcomes.

Genova (1978) reports a study of Massachusetts high schools and finds good and poor school climates in the best-achieving and in the worst-achieving schools. He also reports that the best and the worst school climates are located in city schools. In some cases the positive climates reflect high achievement; in other cases the positive climates forecast improved academic progress. Loke Moos (1979), Epstein (1981) and others, Genova suggests that innovative, participatory schools that stress fairness, equality, a sense of purpose or commitment, and good student-teacher relationships are better climates for students' academic and nonacademic development.

Across studies, some aspects of school environments have been consistently identified as potentially important social organizational factors. These include voluntary membership in a school or educational program, small school size or "schools-within-a-school" organization; opportunities for student decision-making, participation and responsibility in academic decisions that affect the students; few but clear school rules; cooperative group activities or extracurricular organizations; individualized programs that appropriately challenge and reward students and increase student-teacher interaction; and programs that permit flexible scheduling of time for learning. These features of the social climate are manipulable conditions that can be examined separately from teacher expectations for learning, academic emphasis, competition for grades, ability contexts, or other components of the academic or instructional climate. The

characteristics of the social climate may more directly affect noncognitive skills and indirectly affect achievement; the characteristics of the academic climate may most strongly relate to achievement and other cognitive outcomes.

Research is needed on how the different aspects of school environments affect each other, and how the varied dimensions of school environments are related to particular student outcomes.

Linking Environments and Outcomes

Some recent research suggests how characteristics of the school environment may be linked to student outcomes. Epstein and McPartland (1975, 1979) studied how the formal organization of student participation and decision making influences the informal practices of classroom teachers and how formal and informal organization affects students' achievement and affective development. The influence of the formal organization on informal practices was strongest at the high school level, perhaps because a reorganization of the high school environment requires many teachers to coordinate programs and schedules of classes. Epstein and McPartland also found that classroom level measures of participation and decision making yield stronger effects on student outcomes than school level measures of the environment. The authors stress that the formal organization of student participation has positive influence on affective development, but no consistent influence on standardized achievement test scores (McPartland and Epstein, 1977, Epstein, 1981). Other researchers have shown that academic climates influence achievement (McDill and Rigsby, 1973 at secondary school level, Brookover and associates, 1979, at elementary school level).

Rutter and associates' (1979) study of London secondary schools shows that different processes and qualities of school relate differently to

the four outcomes of achievement, attendance, classroom behavior and delinquency. For example, use of the library (not number of library books) and frequent homework was more highly related to the academic outcomes of achievement in Rutter's study than to the other affective outcomes. On the other hand, pupil self-direction (students' care of own school resources) had stronger correlations with all three nonacademic measures than with the achievement. The authors preferred to emphasize that schools high on one outcome tend to be high on other outcomes. However, the differences they report suggest the link of particular outcomes to particular environmental dimensions. Bossert (1978), Slavin and DeVries (1979), and Richter and Tjosvold (1980) report research in elementary and junior high schools on effects on students of variation in activity or task structures, reward structures and authority structures, respectively. Research at all levels of schooling that focuses on the effects of contrasting school and classroom environments on many important academic and nonacademic outcomes can contribute to purposeful educational reform.

Extending Concepts of Environments and Outcomes

If there are intellectual, occupational, mechanical, decision and judgment, coping, caring communication, and other life skills that are as important as high grades or high test scores for students' success as adults (Coleman, 1972; Jencks et al., 1972, 1979; Wolfle, 1969), then it is important that research on school environments specify the structures and opportunities of the school or classroom that are likely to influence these outcomes. Currently, most secondary schools do not provide opportunities that would help students develop the skills needed for adult success. This is not a new problem, but it is especially serious in urban

secondary schools. The 1968 report on Civil Disorders (U.S. Riot Commission, 1968) recognized that urban schools do not offer most of their students the total set of experiences that are needed to overcome problems of discrimination and to enter the world of work and adulthood.

What outcomes should be the responsibility of the schools? What outcomes should be developed out-of-school--the responsibility of the student, family, clubs or community groups? The answers to these questions depend on the financial and physical resources of the school, the stated goals of the school, and other social and political factors. However, the importance of the questions is made clear when the activities of one district that has accepted responsibility for developing many academic and social outcomes are contrasted with the typical, narrow activities in other districts.

A newsletter from one school district reported that the following events occurred during one part of the school year: a special olympics for the handicapped; a film festival with thirteen categories for competition; an oratorical contest among middle school students; a dance program including jazz, flamenco, and robot; a high school alumni art show; a recording session of a combined elementary schools' band; a display of human sculptures by high school students in a department store window; a middle school program on student government; a book reading contest; and visits to the schools by a sailor who sailed on a replica of Columbus' ship, a professor with slides and artifacts from China, a pizza restaurant manager, and a retired storyteller. In other school districts during the same months of the year, all students attended their regular classes and no "extra" activities were provided.

It is possible that students in both districts will learn the basic subjects and basic skills equally well. It is also likely that the students in the first district will be more positive about school and will learn other useful skills, abilities and outlooks from the variety of experiences that they participate in and observe. Clearly the district described takes seriously the schools' responsibility to develop many skills and talents. The school environment stresses inquiry, participation, and extended opportunities for interaction with other students and with adults in and out of the school building. The district termed their instructional program "the basics and beyond" because there are many definitions of what is "basic" for students to learn and to experience to improve their life chances. There are important questions for secondary schools to address about how to assure that the "basics" are learned, what to emphasize in student development after the basics are mastered, and how to structure the school environment so that the basics and other important skills and experiences can be obtained by all students.

In addition to considering school responsibilities for developing diverse skills and talents, many researchers and practitioners have debated the merits of extending the educational environment outside the school. One of the suggestions of every review of needed secondary school reforms is the requirement for adolescents of a wider educational environment than can be found inside a school building. The business community, the general community, and the family are potential agents for developing pertinent educational experiences for secondary school students, and especially for minority students in urban areas who are currently poorly

served by regular programs in the school building. The current urban school programs do not (and some say can not) meet the range of needs for remedial, basic and life skills, and occupational training of these students (Coleman, 1972; U.S. President's Science Advisory Committee, 1974). In response to the schools' unresponsiveness, many of these students drop out or are chronically absent from the schools.

Education beyond the high school walls is not only an abstract idea. The two billion dollar Youth Employment and Demonstration Project program that funds CETA and other projects includes a number of successful urban, inner-city programs that extend education into community projects and employment. Resources for Youth (1980) describes several exciting programs in Harlem, Chicago, Miami, Gary, St. Paul and other urban centers that stress student participation, learning, responsibility and increased self-esteem in projects of community service, media and theater skills, consumer skills, health skills, and job preparation programs. An Experience-Based Career Education program (EBCE) developed by four NIE regional laboratories is another model program that puts the theory of out-of-school educational environments into practice. Some of the programs give academic credit for the students' praticipation; some programs pay students for their work whereas others enlist volunteers; some pay the schools for their assistance in administering a program; all of the programs stress that the outcomes of education require active participation of students.

School Environments and Adolescence

Adolescents attend secondary schools. This simple fact is often ignored by researchers if they are more concerned about the semantics and

procedures of research on environments than about the people in the environments they study. Theories of secondary school reform and the practical applications of reform need to consider the nature of adolescence.

The junior high school years are characterized by Eichhorn (1980) and Lipsitz (1980) as ones of friendliness, increased peer interactions, increased autonomy and activity. The high school years are characterized by Elder (1968) and others as the years for the development of competencies, communality, and self-directedness. In spite of inherent energies and activities by the preadolescents and adolescents who attend school, most junior and senior high schools, and, perhaps, especially urban schools, restrict activities that would match the developmental characteristics of the students and enhance their competencies and self direction. Students who cannot meet the often rigid demands set by schools for dependent, compliant behavior are continually punished for low achievement or poor behavior. Those who do meet the schools' demands do not necessarily learn to extend their social skills or decision making abilities.

We are only beginning to gather information on whether or how differently structured schools and classrooms, magnet programs, or community-based alternative programs more closely meet the educational and developmental needs of adolescents who are poorly served by regular school programs. There are two topics that are consistently raised in discussions about adolescents in school: boredom and participation.

Adolescence and boredom in schools. Although Larkin's (1979) ethnography of a high school is pure suburbia, the problems he describes of boredom and lack of purpose are endemic to adolescence. One of the differences

between the suburban and urban high school settings is the schools' responses to the students' solutions to the problems of boredom or dissatisfaction in school. In the suburban, liberal, nonauthoritarian, architecturally flexible school that Larkin describes, the response to the students' malaise is somewhat accomodating. For example, boredom in suburban schools leads students to "hang out" in and around school. The students' cutting of classes may be unofficially tolerated by the school administration and is supported by the rambling architecture of suburban high school buildings. The students worry about their social relations, about getting into college, or getting a job. They are pessimistic about their high school experiences, but they are generally optimistic about their futures.

In urban high schools, boredom and students' malaise follow a different path. "Hanging out" or cutting classes often means students must hide in the school or leave the school building. Their cutting behaviors are neither tolerated nor supported in a school with hall patrols and security systems designed to keep the halls and school grounds clear. When students leave the school grounds, they automatically enter the city. There is no buffer zone for adolescence equivalent to the campuses of suburban high schools. The students worry about their social relations, about being able to pay for any college or community college program, about being unemployed, about being picked up by police and getting into trouble. They are pessimistic about their high school experiences and they are generally pessimistic about their futures.

One difference between suburban and urban youths' boredom is in the school's accomodation to the students' inevitable cutting-class behavior,

and in the students' estimates of how today's boredom with school relates to the future. One of the most promising suggestions for urban secondary school reform to deal with this problem is the development of varied, well-supervised programs that get the students out of the school building and into work or service activities in the community for at least part of their high school program. Ironically, students' feelings of attachment to school and commitment to learning may be enhanced by educational programs that take students out of the school. Systematic research is required on the effects of community-based vs. traditional programs on students' completion of high school and employment. This research can have direct effects on educational practice.

Adolescence and participation. One characteristic of adolescence that seems to be acknowledged in every task force report on secondary schools is the youngsters' increasing autonomy. Research has linked student involvement, participation and responsibility to more positive reactions to school, better peer relations, more clearly set goals for the future, and acceptance of responsibility for success and failure (see Epstein, 1981, for a review of this literature).

Coleman (1972) comments that students who are shielded from independence and responsibility become dependent, irresponsible and unproductive. In the interest of orderliness, high schools have tended to over-control students who are in a period of development that requires increased participation and self-direction. Stinchcombe (1968) suggested that the active involvement of students in all aspects of secondary school life would counter the alienation created by the lack of connections between themselves, the school program, and their future.

A recent report by the American Association of School Administrators (1980) concludes that student responsibility, participation in rule-making, governance, discipline and other aspects of school life would improve the discipline and reduce disruption in high schools. There is no question that students' feelings of attachment to school and sense of purpose about school is increased with active participation in classroom and school academic and nonacademic programs.

The theories about adolescence and autonomy have been put into practice. Urich and Batchelder (1978) describe an urban high school that took student participation seriously. They report how students can be involved in decisions about discipline, rules, punishments for delinquency, academic courses, and other decisions that affect them. Alternative schools and street academies have stressed student participation in school programs and in setting goals for their own behavior. The commitment from students is as important as other features of the alternative schools--small size, good faculty-student relations, and well-specified, challenging curricula with students given enough time to learn the material assigned or selected (e.g., Eash and Napolitan, in Walberg and Kopan, 1972).

On these two themes--student boredom and student participation--research and practice suggests that something can be done by schools to improve educational environments for adolescents.

Looking Back and Looking Ahead to Better Secondary School Environments

The 1970's bequeathed an important set of task force and educational commission reports. These spanned the decade and included:

Youth: Transition to Adulthood. Report of the U.S. President's Science Advisory Committee: Panel on Youth, 1973.

Reform of Secondary Education. National Commission of the Kettering Foundation on the Reform of Secondary Education, 1973.

Task Force 1974--The Adolescent, Other Citizens and Their High Schools. Another report of the Kettering Commission, 1974.

This We Believe--Secondary Schools in a Changing Society. National Association of Secondary School Principals, 1975.

The Education of Adolescents. Final Report of National Panel on High School and Adolescent Education, 1976.

Giving Youth a Better Chance. Carnegie Council on Policy Studies in Higher Education, 1979.

The Urban High School Reform Initiative. Office of Education Task Force, 1979.

All of these reports of the 1970's drew the same conclusion: Secondary schools are in trouble. They are basically boring and bad for nearly half the students who attend them. Among major conclusions of the several reports:

(1) All students suffer but students from minority groups--blacks and Hispanics--suffer most from poorly articulated educational programs and unresponsive school environments.

(2) The need for work-study opportunities and other out-of-school alternatives is great.

(3) The need for new organizational structures for in-school alternatives must be met.

(4) Basic skills are not enough to solve the problem of the students in schools. Moreover, we do not know what skills, in addition

to reading and math, are "basic" for maximizing life chances.

(5) Somehow adolescents' need for self-direction must be met to improve their decision-making skills and control of their futures and to reduce their antagonism toward authority. This means that schools must develop environments that make better and more realistic uses of students as decision makers about their education and th lives in school and out of school.

These five conclusions were common across a decade of observation and analysis by many groups of leading educators and researchers. The conclusions should be given serious consideration in plans for reform in urban secondary schools. They suggest that current emphases on rigid, uniform high school programs will not help many students to obtain basic competencies, to complete school or to obtain an education useful for employment. The adjective "structured" has been inappropriately defined in secondary schools to mean "fixed" or "rigid" instead of "well-organized" or "well-managed." In the quest for structure, schools put the burden of school and classroom management solely on the teachers' and administrators' shoulders. But, as the task force reports make clear, adolescents--growing ever more independent --need to bear some real responsibilities for the goals and structure of their education so they can feel responsible for their successes and failures as they procede through a school program.

These perspectives on school environments, outcomes and adolescents suggest four additional points for discussion: 1) recent changes in research capabilities and emphases may assist plans for secondary school reform and will influence the evaluation of the effects on students of new environments; 2) educator-researcher cooperation may improve the chances for successful

school reforms; 3) a new emphasis on secondary school remediation is required in urban school reforms; and 4) a reallocation of costs for education may be needed for the kinds of environmental reforms that have been suggested.

Changes in research capabilities and emphases. The studies of school environments and students conducted in the 1970's resulted in new knowledge about school processes and advances in methods for studying school environments. New computer technologies and better understood methodologies make it possible for researchers to pay attention simultaneously to student background and family characteristics, the structures of classrooms and schools, and the processes and climates facilitated by those structures. Research has shown that different school and classroom structures and processes can affect different outcomes of schooling. Advanced methods are now common for testing interaction effects among variables, for analyzing cross-sectional and longitudinal data, and for conducting different levels of analyses. (See varied papers in Dreeben and Thomas, 1980; Bidwell and Windham, 1980). These advances mean that new school programs can be planned and evaluated with more sophistication and accuracy. If, for example, one wanted to compare a typical school program with one in which students spend 3 days in school and 2 days at work, researchers could (with cooperation from the schools) design and conduct a near-ideal study of the effects of the contrasting programs on school and classroom procedures, on teachers, on students, and on the part-time employers of the students, and, over the long term, on the students' employment.

In the 1970's, theories of educational effectiveness redirected attention to "within-school" differences, in addition to "between-school" differences

(Boccock, 1979). This emphasis brings researchers "closer to the action' of school life, and requires cooperative work with administrators and teachers in schools on problems for specific student populations. The cooperation of researchers and educators at the local level may be the single, most important direction for urban secondary school reform. A "within-school" emphasis for research on school effects could lead to more effective reform than the "between-schools" emphasis that characterizes most studies of representative national samples of students and schools.

The "big-data" sources of the 1970's--the NLS, the original "Coleman study," the IEA, the Safe Schools Study and individual researchers' relatively large studies of many students in many schools--provided ideas and examples of the kinds of problems in schools we can and should address: the kinds of structures, processes, climates and outcomes we can or should measure; and alternative methods for analyzing effects. There will be more big-data collections which focus on differences between schools. Coleman and associates' (1981) study of public and private schools, part of the High School and Beyond Survey, has started the big-data studies of the 1980's. It must be recognized, however, that the large-sample studies of the 1970's that led to improved methodologies for studies of school environments have not had much impact on the daily lives of students in schools--especially on the increasingly large population of alienated, disadvantaged, and minority students in urban secondary schools.

The "national sample" survey is a researcher's dream and a political necessity for many issues, and will continue to be important for basic research that requires significant variation in basic social structures

and for improved evaluation techniques. At the same time, the "national sample" is often a local enigma, minimally useful for the real problems that any single school must solve. The 1970's produced increased awareness among researchers and educators that different schools will have different sets of problems, and successful reforms will be based on the unique problems of populations in local classrooms, schools and districts.

Educator-researcher cooperation. There are some recent examples of ways secondary school teachers and administrators can participate in research and evaluation of their schools and classrooms (e.g. chapters by Krueger, Cross, Penfield in Epstein, 1981). In one example, the teachers became directly involved with the design of, plans for, conduct and use of research on the school climate. The data they collected showed that the "average" students felt school was least responsive, as special programs for the brightest and for the most disadvantaged students had been added to the school instructional program. The data also prompted the staff to revise the junior year program because of patterns of responses and comments by juniors.

In another case, district leadership mobilized "workteams" of teachers and administrators in the districts to assess the adequacy of school and district programs and the quality of life for students. The data from this district-wide survey showed that the junior high school program was perceived as least responsive, compared to the elementary and high school programs. Follow-up activities were designed to initiate and evaluate alternative organizations of the junior high school. In a third case, university researchers teamed with the school administrators and teachers to conduct a two-year evaluation of an innovative Title IV-C program in English classrooms.

In each of these examples, educators in cooperation with researchers evaluated school and classroom environments and student reactions to the environments. In each case, the data provided by students indicated to the school staff ways to improve the responsiveness of the environment. These few examples suggest that researchers could do much more to establish and utilize teacher-researcher links. The result of such cooperative efforts is that data on environmental conditions and their effects on students will be collected and interpreted in terms of the populations and problems of the cooperating schools or districts.

School environments and remediation. "High school" means different things to different students. Reading skills for ninth graders in urban schools may range from second grade to college level. The students enter high school, but they experience different learning and social environments as they attend six or seven subject periods each day with different teachers and classroom climates in different curricular tracks, and with different groups of peers. Some of the students experience a high school environment without ever attaining high school level skills.

Not much is mentioned in the literature about the problem of remediation for the millions of high school students who fall behind in academic skills. The learning and the social climates of secondary schools require vast reforms in order to address this problem.

Age-appropriate teaching materials that are required to bring high school students up to grade level are difficult to find. Remedial programs using elementary school books and papers may embarrass and alienate secondary school students. Computer hardware and courseware that might assist the remediation of secondary school students are expensive and are not typically

available in urban schools in the numbers that are needed to successfully institutionalize and individualize programs of remedial basic skills. Secondary school teachers are not trained to provide remedial programs. High school organization often is not flexible enough to permit remediation in some subjects while students maintain their regular schedules in other subjects. These problems of materials, equipment, teacher training, curriculum and scheduling make it difficult for most schools to offer effective remedial programs.

Even if students are given extensive academic assistance, some students lose social status because the time they spend in remedial classes is time away from their peers, and away from the "expected" level of accomplishment. Other students, who accept remediation and do improve their skills, may find themselves treated like newcomers in some classes and rejected by the peers they left behind in the classes for remediation. The need for remediation and the design of the programs that provide remediation can affect the students' self-esteem, status with peers, and success in school.

The learning climate and the social climate may be so distinct in their emphases and effects on different students' outcomes, that when learning problems arise, the social climate cannot support solutions directed only at the academic problem. If high schools, teachers and administrators are to solve the problems of low academic skills, they will have to reorganize the learning climate to deal with secondary students' need for remediation and provide rewards for real progress made. Schedules of classes and memberships in different "tracks" or groups will have to be more flexible, so that when students improve they can move into more positive academic labels and experiences. In addition, schools will

have to reorganize the social climate to establish peer support for remediation.

Schools relegate some students to "the low group" early in their school careers and they remain "the low group" through high school, but they may never receive useful programs of remediation. Boring, unchallenging and restrictive environments are created for these students, and few rewards are offered for real progress made. Peer support for improved skills is not developed. Many of these students would rather quit than fight the system, and they do drop out of school in great numbers.

The literature on school environments deals with remediation mainly at the elementary school level. In secondary schools, we need some direct evaluations of the effects of alternative learning and social environmental structures on remediation. We cannot pretend that tracking, summer school, or crash courses for proficiency or competency exams fulfill the remediation function. Businesses could be enlisted to support special programs in the schools that combine academic skills and work requirements, peer apprenticeships, and consumer skills. However, it is, ultimately, the schools' responsibility to develop group or individual programs for remediation in a learning and social environment that captures the commitment of failing, secondary school adolescents.

Allocating the costs of education. In most cases, traditional high school programs cost less to operate than any new programs, and so even promising reforms are rejected. However, the social costs of school dropouts, school crime and vandalism, the psychological costs of failure, the economic losses of poorly trained students, unemployable students, or students on welfare, and other "costs" to society of ineffective

education are usually not included in the estimates that compare the worth of traditional programs to new school programs.

The serious recommendations in the task force reports of the 1970's and in other research studies about needed directions for urban and other secondary schools, suggest that the costs and benefits of school improvement go beyond the boundaries of educational institutions. The costs to create better educational programs in secondary schools, may have to be shared with schools by the social and economic institutions and agencies that currently bear the long-term burden of the currently poorly trained, unmotivated students and drop outs. Social welfare agencies, police departments, juvenile justice systems, the business community and other agencies pay a great price now for inadequate school environments, inadequate instructional programs, and inadequate student outcomes. Especially in urban school districts, it is important to consider the educational, social and economic costs of the current school programs and the benefits to the same social institutions of reducing those costs through improved educational programs. "Educational-impact estimates" of traditional programs and prospective reforms could be informative for various educational, political and social agencies, as part of creative, long term plans for the reallocation of costs for improved educational environments.

The success of secondary school reform will be determined by a combination of practice, research and political factors. Four factors may be especially important for plans for secondary school reform: simultaneous planning of sophisticated research and practical implementation, with attention to longitudinal data on implementations and effects;

cooperative efforts by researchers and teachers in the research and evlauation of the implementation of new school and classroom environments and their effects; clear attention to remedial programs needed within schools and the implementation of academic and social environmental conditions to support remediation; and the potential for reallocation of costs for education as improved school environments are linked to the community, to business and to other public and private agencies outside the school building.

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Secondary School Environments and Student Outcomes:
Annotated Bibliography and Commentary

The selections in this section include search, reviews and commentaries that raise pertinent questions for plans for reform and research of urban secondary school and classroom environments and their effects on students.

Aiken, L. R , Jr. Update on attitudes and other affective variables in learning mathematics. Review of Educational Research, 1976, 46: 293-311.

•Elementary and secondary; subject-specific environments and attitudes.

This article updates a 1970 review of research on attitudes toward math by the same author (RER, 1970, 30, 551-596). Aiken's review is based on over 70 dissertations and over 40 published articles on aspects of attitudes, anxiety and achievement in math at the elementary, secondary and college levels. In spite of the apparent proliferation of studies, there is a dire need for better measures of attitudes and environments, and more consistent methods of research. In research in urban secondary schools it will be important to study specific-subject environments (such as math classes) because high school students bring different skills and attitudes to their several subjects, and because high school subjects are often organized in ways that create distinct environments.

Anderson, G. J. Effects of classroom social climate on individual learning. American Educational Research Journal, 1970: 135-152.

•High school physics classes; subject-specific environments.

Anderson's study of high school physics classes at the start of the 1970's has been an influential one. It focuses on the classroom, not the school, and it suggests the ties of structural conditions of rewards, peer relations, teachers' styles and methods, and decision making procedures with science-related outcomes. It introduces some determinants of classroom climates and shows the importance of alterable conditions to improve climates. The Learning Environment Inventory (LEI) was used to obtain reports from students about the classroom environment. Different effects by ability and by sex on different outcome measures are linked to the dimensions of the classroom climate. (See also: Walberg, H. J. and Anderson, G. J. Classroom climate and individual learning. Journal of Educational Psychology, 1968, 59: 414-419.)

Baird, L. L. The practical utility of measures of college environments. Review of Educational Research, 1974, 44: 307-329.

•College; relationship of purpose of the evaluation of environments to the selection or development of environmental measures.

Baird's exceilent review of the measurement of college environments can aid research on urban high school environments by its analytic presentation of the types of decisions that can be assisted with information on school environments. He discusses how input (student characteristics brought to the environment), and output (the ultimate short and long term criteria of success of schooling and of different academic subjects) must be methodologically taken into account when the effects of environments are studied. The differences in uses for global measures, specific across-school measures, and measures of within-school environments of secondary schools must be

acknowledged, as Baird does for colleges, so that the appropriate measures can be made to address particular questions of environmental effects.

Bidwell, C. E. and Windham, D. M. (Eds.). The Analysis of Educational Productivity. Volume II: Issues in Macroanalysis. Cambridge, Mass.: Ballinger, 1980.

- Methodologies for research on school effects.

The scholarly chapters in this volume discuss the hierarchy of educational systems, research methods and potential school and district reforms. The chapters by Meyer, Eckland, and Ragosa on aspects of the design and measurement of school effects could assist plans for studies of urban secondary schools. The chapter on longitudinal studies shows the importance of careful plans for longitudinal measures of institutional and organizational conditions, processes and student and teacher activities and outcomes. Even a volume on "macro-environments" recognizes the need for information and research on proximate conditions and experiences in education. Coleman's chapter on "choice" in education suggests some global alternatives for the organization of secondary schools.

Boocock, S. S. An Introduction to the Sociology of Learning. New York: Houghton Mifflin Company, 1972.

- Schools and classrooms as social environments; research on adolescence.

Boocock's text is much more than a simple introduction to school environments. It contains important discussions on the essential elements of

life in school. The areas of school organization she discusses can assist plans for the development of socially significant reforms for high schools. These include the roles defined for students as learners; the classroom as a social system that varies in size, grouping criteria, communication systems, rewards and interaction patterns in peer groups; the school's hierarchical administrative structure; school effectiveness and effects of environmental variables; and student normative climates. Plans to reorganize high schools to "improve learning" should consider how the social characteristics of classrooms will be affected by particular reforms.

Carnegie Council on Policy Studies in Higher Education. Giving Youth a Better Chance: Options for Education, Work and Service. San Francisco: Jossey-Bass, 1979.

- Needed reforms for secondary schools in light of postsecondary conditions.

The difficulties that face higher education are related to problems in the high schools. The Carnegie Council places special emphasis on the financial and educational problems of minority students in urban high schools. From the point of view of higher education, the Council is concerned about the loss of talent when economically disadvantaged students do not continue with postsecondary education and the costs to society when inner city students drop out of high school. In addition, they pointedly address the need for "education and work" experiences for students in and out of school, the importance of the family environment, the benefits of permitting decisions by youngsters about their lives, the age of compulsory

school attendance, and the potential of alternative models of secondary school instructional programs. The "Priority Recommendations" of this report should be given careful consideration because they could directly affect the kinds of new environments created in urban high schools.

Center for New Schools. Strengthening alternative high schools. Harvard Educational Review, 1972, 42: 313-350.

- Secondary schools; case study of student decision making in school environment.

This is an ethnographic case study of an urban Chicago high school-without-walls, part of the alternative school movement of the early 1970's. One major goal of the school organization was to develop a process to enable students to make decisions on issues that affect them at school. The article discusses the difficulties and benefits of a process that is based on discussion, conflict, and the resolution of differences as a preparation for adult decision making. New studies of urban school environments might profit from the detail of this unusual case study, especially the description of varied student subgroups within the school, and the authors' ideas of the role of research and evaluation of school environments.

Centra, J. A. and Potter, D. A. School and teacher effects: An interrelational model. Review of Educational Research, 1980, 50: 273-291.

- Complexity of models of environmental effects; emphasis on student outcomes.

The authors identify the seven blocks of variables that are typically cited as needed information for completely specified models for studying school effects. Although one could quibble with the placement of the blocks of variables or suggest additional variables needed, the short review brings to attention the complexity required in the design and data collection of school effects studies. Other models that include measures that distinguish the structures and processes of school and family environments should certainly be explored and consideration should be given to the problems of multi-level data represented in Centra and Potter's model. Other descriptions of models not referenced in Centra and Potter because of their recency include: Leinhardt, G. Modeling and measuring educational treatment in evaluation. Review of Educational Research, 1980, 50: 393-420 (models for research on elementary school instruction) and Epstein, J. L. Patterns of classroom participation, student attitudes and achievements, in The Quality of School Life, J. Epstein (Ed.), Lexington: Lexington Books, 1981 (an effects model for research at the secondary school level).

Coleman, J. S. How do the young become adults? Review of Educational Research, 1972, 42: 431-439.

- Secondary school reform; school-community alliances for multiple outcomes; extending educational environments out-of-school.

Coleman calls attention to the need for secondary school reforms that assign responsibility to the business community to teach some social and occupational skills to students. The schools' responsibility would be

devoted to teaching intellectual skills, whereas life skills such as coping with bureaucracies, physical and mechanical skills, care of dependent persons, and emergency skills would be taught by other community agencies. The reorganization of schools that is implied here is especially important for urban secondary schools. The theme of greater school-community cooperation for adolescent education and socialization is one that has been presented in many reports in increasingly detailed and workable plans.

Crain, R. L.; Mahard, R. E.; and Narot, R. Making Desegregation Work: How Schools Create Social Climates. The Johns Hopkins University Center for Social Organization of Schools, Manuscript, 1980.

- Secondary schools; features of successful desegregated environments.

This report uses data from 200 high schools, over 10,000 students and 2,000 teachers and administrators to identify successful characteristics of desegregated schools. Crain, Mahard, and Narot support the perspective that we need to measure other outcomes in addition to achievement, and that the overall school climate is more than the sum of its separate classroom environments. They suggest that "a good school is one where students like school, get along with other students, want to do school work, score well on tests, want to go to college, and have little interracial conflict." They identify school-level features that create these outcomes, and suggest that: desegregated schools that are 40-75% black are more effective; racial tension is not necessarily disadvantageous; teachers' behavior is more important than their attitudes; curricular emphases on race relations pay off in improved climate in desegregated schools; and extracurricular activities are positive influences on racial climates.

There is a vast and still growing literature on desegregated school climates that should be explored when the issue for school reform centers on desegregated schools and student race relations.

Cusick, P. A. Inside High School. New York: Holt, Rinehart and Winston, 1973.

- Secondary school students in their school environment.

Although Cusick's school is "small city" rather than urban, his book is a classic case study that clarifies the students' stake in their education and school climate. Cusick's last chapter includes a useful discussion on the organization of the school and its curriculum in terms of the students' perspective of their place in the decision-making environment. The importance of differences in academic subject classrooms, teacher control, and seven other characteristics of schools and their likely effects on students are discussed. The conclusions of this descriptive study raise questions about school environments that can be tested empirically in samples of schools that significantly vary along the dimensions Cusick identifies.

Ehman, L. H. Changes in high school students' political attitudes as a function of social studies classroom climate. American Educational Research Journal, 1980, 17: 253-265.

- Secondary school climates; specific-subject focus on social studies climate and political outcomes.

A longitudinal study of students from nine high schools presents unique data on effects of contrasting styles of social studies classroom cli-

mates on students' political interest, trust in people, social connectedness (integration) and political confidence. The strongest positive effects on the first three outcomes result when students are free to express opinions on both sides of controversial issues in class. This is a measure of participation within an organized but expressive environment--a variable repeatedly shown to be important for positive student affective outcomes. The longitudinal data here are treated as trends, not as variables in a formal effects model. The article calls attention to the benefits of longitudinal data in research plans on urban secondary schools, and raises questions of other ways to make use of longitudinal data in causal models.

Epstein, J. L. (Ed.) The Quality of School Life. Lexington, Mass.: Lexington Books, 1981.

- Measuring secondary school reactions to school life and school climates.

This collection of articles by sociologists, psychologists and practitioners features the reactions of secondary students to their school environments. In the volume, chapters by Wright and Jesness, Moos and David, Epstein, Isherwood and associates, Scheerer, Rich and Darom, and Penfield specifically study the effects of school environments on students' attitudes. Other contributors show how the Quality of School Life Scale (QSL) can be used in practice to assess schools and special programs. The results across chapters empirically support the assumptions that secondary schools must be improved, that characteristics of the school organization affect the reactions

of students to school and the school climate, and that student responsibility for learning and participation in decision making are particularly important program characteristics for secondary school students' attitudes toward school.

Goodlad, J. I.; Fenstermacher, G. D.; La Belle, T. J.; Rust, V. D.; Skager, R.; and Weinberg, C. The Conventional and the Alternative in Education. Berkeley: McCutchan, 1975.

- Evaluation of alternative programs.

Goodlad and his associates at UCLA have compiled a collection of discussions on alternatives to school and alternatives in school. Alternatives in school refer to the differences in environments that are created by different organizational schemes, different goals, and different teaching practices. The authors stress how alternatives in evaluation techniques and new outcome measures will be necessary for alternative educational programs. They, like many others, support the opening of the community to extend the educational program beyond the school.

Hearn, J. D. and Moos, R. H. Subject matter and classroom climate: A test of Holland's environmental propositions. American Educational Research Journal, 1978, 15: 111-124.

- Secondary school environments; subject-specific characteristics.

This article is unique because it links the classroom climates of different high school subjects to Holland's theory of person-environment types. Two

hundred and seven classrooms in nineteen urban and suburban high schools were classified according to the Holland typology--realistic, investigative, artistic, social, and conventional classrooms (five of the six Holland types). The Classroom Environment Scale (CES) was administered. The CES measures student perceptions of nine environmental characteristics at the classroom level: involvement, affiliation, teacher support, task orientation, competition, order and organization, rule clarity, teacher control and innovation. Eight of the nine CES subscales significantly differentiated subject classrooms. For example, artistic classrooms were higher on innovation and lower on teacher control than investigative classes. No analyses of urban/suburban classroom differences are reported. Differences in expected patterns suggest that researchers should pay close attention to subject-specific studies of environments.

Jencks, C. S. and Brown, M. D. Effects of high schools on their students. Harvard Educational Review, 1975, 45: 273-326.

- Secondary school effects on achievement and attainment.

Jencks and Brown examine 98 comprehensive, public high schools from the Project Talent sample, and suggest that some high schools are more effective than others in influencing achievement or attainment. The study cannot offer reasons for the differences in effects. Moreover, the data did not include what we now consider "environmental characteristics" so the results deal with standard questions of school differences in achievement and attainment not with outcomes that we know could be affected by the social or psychological "climate" of schools. This 1975 article is a vestige of

early data, early methods and early concepts of environments. New research on urban schools should consider the issues it raises about methodology for studies of school effects, but should improve on the data collected, and on the concepts of environments and outcomes.

Kettering Foundation. The Adolescent, Other Citizens, and Their High Schools. Report of Task Force '74. New York: McGraw-Hill, 1975.

- Secondary school reforms.

This report on the function and future of American public high schools puts into perspective the different requirements for high- and low-achieving high school students. The report reiterates support for the recommendations of an earlier survey of high schools (see National Commission on the Reform of Secondary Education, 1972-73) that citizen involvement, education for citizen responsibility, organization of alternative educational programs (including work-study and youth service) are critical ones for future success of high schools for all students. Nineteen recommendations on these three areas for reform are discussed, and should be reviewed critically for their usefulness to development in urban high schools.

Kozberg, G. Left out kids in a left out school. (Conference: The Search for Effective Schools.) Harvard Graduate School of Education Association Bulletin, 1980, 25: 24-26.

- Conditions and programs for public, city high schools; case example of South Boston High School.

Here is a report on an improved urban school--South Boston High School ("Southie"). The author points out that "effective schools" strategies in research must ask: "Effective for what purpose?" and "Effective for whom?" She points out that race, poverty, housing, crime, health care and human problems are all part of the "education problems" in urban schools. She suggests a program of reforms that includes an untracked instructional program and a direct tie to business and service programs in the community. This is a good report of "the possible" and "the actual" for others planning urban school reform.

Larkin, R. W. Suburban Youth in Cultural Crisis. New York: Oxford University Press, 1979.

• Adolescent discontent and outlooks on the future.

Larkin's case study of suburban high school students depicts the pervasive boredom of students in school and lack of integration of youth with the adult world outside of school. The differences in social class, school resources, and experiences of these suburban advantaged students emphasizes, by comparison, the severity of the problems of urban, disadvantaged adolescents. The importance of affective outcomes for effective education is made clear in the descriptive account of school life.

Levine, D. V. and Havighurst, R. J., (Eds.) The Future of Big-City Schools. Berkeley: McCutchan, 1977.

• Practical examples of the creation of multiple educacional environments.

Six chapters on magnet and alternative schools in this volume, their origins, designs, implementations, and relationships to their cities, provide useful examples of how different emphases of school programs and curricula affect the educational environment. Research has shown that magnet, alternative and private schools and different academic subjects within schools have unique environmental characteristics. The basic research can directly influence practice if new schools are designed to emphasize particular educational environments and experiences. Plans for urban schools should give serious consideration to magnet schools or magnet programs-within-schools, and the effects of such programs on the social and learning environments and student outcomes.

Lezotte, L. W.; Miller, S. K.; Hathaway, D. V.; Passalacqua, J.; and Brookover, W. B. School Learning Climate and Student Achievement. East Lansing: Michigan State University, 1979.

- Summary of research and interpretation of learning climates in elementary and secondary schools.

This monograph presents the authors' beliefs that the school learning climate can be improved to benefit students from disadvantaged families if administrators and teachers take seriously the goal of effective instruction. In the text and in a useful annotated bibliography, the authors review several studies of learning climates and their effects on students, and make many suggestions for improving achievement at the school level. The chapter on high schools discusses the size and administrative hierarchy of schools, curricular emphases and the multiple outcomes of secondary schools. In spite of the recognized importance of subdivisions within high schools

(by track, subjects, grade-level, etc.), the authors hold steadfastly to the notion of the school as a single social system. It is true that between-school analyses on global environmental measures can provide information about gross distinctions across schools. However, there also is evidence that specific environmental dimensions can be specified to differentiate between instructional, organizational and social climates, that each of these "climates" influences different outcomes, and that within-school environments are equally or more important than between-school environments in studies of educational effects.

McDill, E. L. and Rigsby, L. Structure and Process in Secondary Schools: The Academic Impact of Educational Climates. Baltimore: The Johns Hopkins University Press, 1973.

- High school climates and student outcomes.

McDill and Rigsby conducted one of the first major empirical studies of secondary school climates. They report small but significant and consistent direct effects of global academic qualities of schools on student math achievement, after other background characteristics of students are statistically controlled. They also examine peer group processes in some detail, and find simultaneous, independent effects of the school academic climate and the peer group on math achievement and college plans, with different patterns of influence noted for males and females. McDill and Rigsby point to the need for longitudinal studies of effects of secondary school climates, academic and non-academic outcomes and within-school analyses (the latter because the greatest proportion of variance on measures is within, not between, schools.) They remind researchers that conclusions are determined by the way constructs are operationalized--still good advice for those planning studies of environments and outcomes.

McMillan, J. H. The effect of effort and feedback on the formation of student attitudes. American Educational Research Journal, 1977, 14: 317-330.

- College; factors influencing attitudes.

This study of college students uses a quasi-experimental design in a natural classroom setting to measure the effect of two factors that may be important for learning and attitudes in an academic subject. These two factors are the degree of effort exerted to study a subject and the extent of written feedback of praise. The results suggest that high praise with high effort are related to positive attitudes more than any other combinations of these factors. Although conducted with college students, it would be useful for urban high schools to consider the amount of effort demanded of students (a combination of appropriate challenge and inherently interesting assignments) and the feedback given to students (nature and frequency of praise for real progress) as key factors for learning and student attitudes toward school.

Moos, R. H. A typology of junior high and high school classrooms. American Educational Research Journal, 1978, 15: 53-66.

- Secondary school social environments and effects on student and teacher satisfaction.

The Classroom Environment Scale (CES) is a measure that permits students to report their perceptions of their classroom and is a useful measure for

identifying the separable aspects of subject classroom environments. Moos studies 200 junior and senior high classrooms and identifies five types of classrooms--those that emphasize teacher control, innovation, affiliation, tasks, and competition. He relates the types of classrooms to student and teacher satisfaction and suggests that innovation-oriented classrooms promote greater satisfaction than control-oriented classrooms, but shows that some degree of structure and clarity of expectations must also be present. Different subjects have different environmental profiles. The CES can be administered to students and to teachers in research on changes in the school or classroom environments.

Moos, R. H. Evaluating Educational Environments. San Francisco: Jossey-Bass, 1979.

- Measurement and effects of classroom climates in junior and senior high schools.

The second half of Moos' book focuses on junior and senior high school classrooms and the use of the Classroom Environment Scale (CES). Moos recognizes that the physical, human and organizational components of an educational environment influence each other. Several studies of classrooms in different types of schools show the diversity of classroom environments, the determinants of climate dimensions, and the effects on students of varied climates. The presentation illustrates why measurement of environments and measurement of reactions to environments must be part of research on secondary schools. The methodological problems associated with

different kinds of environmental measures should be understood before research on urban school environments is undertaken. (See also Moos, R. H and David, T. G., Evaluating and changing classroom settings, in The Quality of School Life, Joyce L. Epstein (Ed.). Lexington, Mass.: Lexington Books, 1981.

National Panel on High School and Adolescent Education, The Education of Adolescents. Final Report. Washington, D.C.: U.S. Government Printing Office, 1976.

- Secondary school reform.

This report on the status of U.S. high schools and needed reforms is one of the several task force reviews of the 1970's. Like other reports, this one acknowledges the success of high schools for academically-oriented youth. The panel calls for more out-of-school education in the community for a fuller, more successful educational program for all adolescents, and especially for those whom the present schools do not serve well. Eleven major recommendations are discussed that emphasize education in many settings; student participation; special subject or skill-oriented (magnet-type) schools or programs within schools; reduced compulsory attendance; and research on contrasting organizational effects. The question "What are the best situations in which learning can take place?" is critical for urban high school reform.

Office of Education. The Urban High School Reform Initiative. Final Report. Washington, D.C.: U.S. Government Printing Office, 1979.

- Urban high schools in the 80's.

This report is the result of a special inquiry on inner city junior and senior high schools. It suggests a number of directions that would revitalize secondary school education for urban youngsters. Six pilot programs are described and five major themes for reform are discussed in detail. These include some of the same important suggestions that were made in other task force reports: an emphasis on school and community educational programs; school and work programs; in-school reorganization for diverse learning and social environments; and local school leadership for better programs. The Federal role in secondary school reform is discussed.

Passow, A. H. (Ed.) Developing Programs for the Educationally Disadvantaged. New York: Teachers College Press, 1968.

- Urban secondary school reform.

Problems in the education of disadvantaged students and environments for education in disadvantaged urban high schools have not changed much since 1968. Chapters by Meade, Tannenbaum and others in this volume suggest the need for school and community efforts, out-of-school programs, homework-help programs, programs that deal with the dropout and potential dropout, and programs that permit jobs and school work to reinforce each other. The basic requirement for urban high school reform is that the curriculum takes into consideration the things that are important to disadvantaged adolescents. The lists of services and environmental conditions for programs to prevent early school withdrawal are as sensible as they ever were, and are as unlikely to be found in schools as a decade ago.

Rafalides. M. and Hoy, W. K. Student sense of alienation and pupil control orientation of high schools. The High School Journal, 1971, 55: 101-111.

- Teachers' styles of control and student reactions in high school.

Rafalides and Hoy suggest the custodial vs. humanistic orientations of teachers in high school create two different school environments. The former, based on total teacher control, produces an autocratic environment; the latter, based on teacher-student cooperation and interaction, creates a democratic atmosphere. Three thousand teachers and 8600 students in 45 urban and suburban schools responded to instruments on teacher control or student alienation. The correlational results suggest that the level of teachers' custodial orientation relates to student alienation, especially the dimensions of powerlessness and normlessness. The measures and design used in this study raise many questions, but the results have been confirmed in other research and are clearly important factors in school social environments.

Randhawa, B. S., and Fu, L. L. W. Assessment and effect of some classroom environment variables. Review of Educational Research, 1973, 43: 303-321.

- Elementary and secondary school studies of learning environments.

This comprehensive review offers a good background and bibliography of the early research on learning environments. The authors discuss the strengths

and weaknesses of varied methods for measuring classroom environments. Special attention should be given to Anderson's (1971) study using the Learning Environment Inventory (LEI) compared to the Moos (1978, 1979) and Hearn and Moos (1978) studies (both noted in this bibliography). Randhawa and Fu's discussion of subject-specific environments, interaction effects, and studies of rural and urban classrooms could be helpful for new plans for urban school research.

Robinson, W. P. Boredom at school. British Journal of Educational Psychology, 1975, 45: 141-152.

- Student reactions to the responsiveness of school activities and rewards.

Robinson presents and tests a model of the determinants of student boredom and its relationship with school failure, truancy, or dropping out--key problems for urban high schools. Subject-specific reactions to school were surveyed and demographic and achievement data were obtained on 4617 British adolescents, 13-16 years old. The author compared extreme groups of bored and committed students on other school-related behaviors. The data suggest that teachers' commitment and expertise in their academic subject, and teachers' expectations for students' learning may be important influences on student boredom. He notes, as do others, that the reward structures of secondary schools commend few students for relative achivements rather than all students for the real progress they make. These reward structures are good candidates for school reform.

Rutter, M.; Maughan, B.; Mortimore, P., and Ouston, J. Fifteen Thousand Hours: Secondary Schools and Their Effects on Children. Cambridge: Harvard University Press, 1979.

- School effects in inner city high schools.

This volume is valuable for its concise review of early research studies on school effects and school environments and for its new tests of environmental characteristics on multiple outcomes. The authors describe the narrow focus of past research on the outcome of scholastic achievement and the narrow focus on few school organizational characteristics. They ask the right question: Which features of schools make a difference for which outcomes? Rutter and associates' study of inner-city London secondary schools shows that student outcomes (attendance, achievement, classroom behavior, delinquency, attainment) differ across schools; that the differences in outcomes create different atmospheres in the schools; and that different features of the schools' social environments (academic emphases, teaching behaviors, incentives, and responsibilities for students) were related to positive student outcomes. These features--all alterable conditions of secondary schools and classrooms--should be incorporated in secondary school reform in inner city schools.

Stinchcombe, A. L. Rebellion in a High School. Chicago: Quadrangle Books. 1964.

- Schools and student misbehavior.

Stinchcombe's is one of the early studies that linked school conditions with student attitudes and behavior. It is still useful for its "articulation" hypothesis. He suggests that the rebelliousness of students will decrease when the students see a clear correspondence of high school activities and opportunities with their future plans, status and success as adults. Stinchcombe's discussion of the narrow set of academic values of most high schools and the problem of designing a school organization that fits the psychological and social needs of adolescence have been echoed in many discussions of high school reform and alternative educational environments.

Strauss, G. H. School as a power structure: Student attitudes toward high school policies, student power position, and student rights movement. Education and Urban Society, 1974, 7: 3-27.

• High school student participation in decisions.

A survey conducted in 1970 in twenty New York area high schools, including 7 city public schools, examines how 1457 students evaluate the quality of their school experiences and power relations in school. The author finds what have become standard descriptive statistics--i.e., most students (and especially public school students) find major areas of school life unsatisfactory and alienating. Students, but not teachers, want to increase student participation in school governance. Better-educated parents also support student participation. The author suggests that alienation and apathy could be reduced with the reallocation or redistribution of power to include students in academic and nonacademic decisions about school.

Thomas, J. W. Agency and achievement: Self-management and self-regard. Review of Educational Research, 1980, 50: 213-240.

- Elementary and junior high school students' self-management, motivation and achievement.

This comprehensive review of elementary and junior high school research in self-management and student motivation points out how "back-to-basics" programs may need to incorporate student responsibility in the organization of instruction. The research calls into question the benefits of total teacher control of instruction and learning. Thomas concludes that school and classroom environments that emphasize student responsibility for achievement and enable students to set personal goals produce greater achievement gains and more positive motivation and affect than other schools. A natural extension of the research is that these responsibilities should also be part of high school programs, because student autonomy is increasingly important for adolescents' development.

Trickett, E. J. Toward a social-ecological conception of adolescent socialization: Normative data on contrasting types of public school classrooms. Child Development, 1978, 49: 408-414.

- Use of the Classroom Environment Scale (CES) in urban and other high schools.

Urban high schools were part of a sample of five types of schools tested with the CES by Trickett. There were 123 urban classes among the 409 high

school classes surveyed. Regular classrooms in urban high schools did not have a well-defined "portrait" of their environment in comparison with the dramatic portrait of 42 classes in urban alternative schools-without-walls The regular classes were high in task-orientation but there was no evidence of a compelling personality for the "average" comprehensive urban high school classroom. It could be that more dramatic portraits of environments could be found within comprehensive high schools, across tracks, grade levels, or departments. The article is another example of research that shows that different types of schools and classrooms provide different treatments, experiences, and effects for adolescents.

Trickett, E. J. and Moos, R. H. Personal correlates of contrasting environments: Student satisfactions in high school classrooms. American Journal of Community Psychology, 1974, 2: 1-12.

- Environmental features of interpersonal relationships and clear rules influence positive student reactions.

The authors use the CES to look at high school classroom environments and single-item indicators of general mood, student satisfaction with the teacher and satisfaction with the amount of material learned. This report uses 608 students in 36 schools selected as matched samples so that tests of relationships could be run separately on each set of 18 schools. The authors found that student-teacher interaction, student participation in decision-making, innovative teaching and clarity of rules relate to student satisfactior. These results are similar to the findings reported in Epstein

and McPartland (1979) and Epstein (1981) on the effects of contrasting school and classroom environments on student satisfaction with school life. Trickett and Moos point to the benefits of measuring classroom environment and classroom outcomes in studies of high schools.

Urich, T. and Batchelder, R. Turning an urban high school around. Phi Delta Kappan, 1979, 61: 206-209.

• Student participation in improving high school environments.

This article describes how student decision making was reorganized and emphasized in a high school troubled by discipline problems, poor attitude, high rates of delinquency and low achievement. Student participation in school governance and leadership was encouraged in areas previously (and typically) reserved for administrators' or teachers' decisions. By dealing with the school social environment, the students solved problems so that teachers and students were able to move on to a stronger emphasis on academic learning. The discussion indicates how time plays an important part in school improvement efforts. Short-term, affective results will appear before achievement effects are noted. Plans for research and evaluation of secondary school reforms will need to pay attention to the order of outcomes, and build reforms and evaluations over time.

U.S. President's Science Advisory Committee: Panel on Youth. Youth: Transition to Adulthood. Chicago: The University of Chicago Press, 1974.

• Recommendations for high school reform.

The panel reviewed high school education in the U.S. and concluded that it is individualistic, oriented toward cognitive achievement, and that it withholds authority, responsibility and autonomy from youth. The panel suggests that educators must reappraise the contexts in which youngsters can be educated with several goals for education guiding the design of the school environment. These goals include the development of: cognitive and non-cognitive skills for economic independence; occupational opportunities; skills for self direction and the management of personal affairs; personal commitment to some activity; and skills for interacting and cooperating with other people. The panel discusses why current school environments do not meet the needs of adolescents and suggests varied reforms in Part 4, "Alternative Directions for Change." There are different ways schools could emphasize the diversity of paths to adulthood--in and out of school buildings. The suggestions support and are supported by recommendations in other task force reports, and reinforce the need for more pluralistic school environments.

Walberg, H. J. (Ed.) Educational Environments and Effects. Berkeley: McCutchan, 1979.

• Research on school and classroom environments and effects.

This collection contains three sections of studies of school environments--Socio-psychological Environments, Instructional Environments and Research Methods. Chapters by Moos, Johnson and Johnson, Slavin and DeVries, Ellett and Walberg, Welch, Epstein and McPartland, and McPartland and Karweit

may be useful for planning secondary school reform because of the measures of environments and student outcomes that are described, and the methodologies and caveats for research design that are offered.

WRISE--Wisconsin Program for the Renewal and Improvement of Secondary Education. Madison: Wisconsin R&D Center for Individualized Schooling, 1981.

- Secondary school improvement. Printed materials, filmstrips, audio cassettes for schools and teacher-training program.

Herbert Klausmeier of the Wisconsin R&D Center directed a project in which over 70 secondary schools, including magnet and model schools, contributed ideas for improving achievement, attendance and attitudes of high school students. The WRISE materials describe 10 objectives for school environments, including individualization, alternative curriculum programs, community and work activities, and student decision making. The 10 objectives reflect the agreement of many researchers in urban and suburban settings that high school programs must come to grips with the real needs of the students they serve.