# Center for Social Organization of Schools

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May 1980

## CLASSIFYING SCHOOL ENVIRONMENTS TO UNDERSTAND SCHOOL DISRUPTION

Michael D. Wiatrowski, Gary D. Gottfredson, and Mary K. Swatko

The Johns Hopkins University

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The Johns Hopkins University

Baltimore, Maryland

## 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 four 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 interrelation 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 schoolwide 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.

This report, prepared by the Studies in Delinquency and School Environments program, seeks to classify school environments as a first step toward locating student-school interactions that may contribute to disruptive behavior in schools.

Abstract

A classification of school environments is developed by using information about the ecological, demographic, organizational, and psychosocial climates of about 600 junior and senior high schools. Factor analytic and clustering techniques were used to define two major dimensions of school environments and to group similar schools together. Results imply that speaking of schools in terms of "types" requires abstraction, but that grouping schools in terms of their relative standing on these two major dimensions shows promise of practical and heuristic value. Implications of the results for understanding differences among school environments, for attempts to reduce school disruption, and for future research are discussed.

Acknowledgments

We are grateful for Richard D. Joffe's technical assistance. We are also grateful for the cooperation of hundreds of principals and thousands of teachers and students who made this research possible, and for the diligent efforts of National Institute of Education staff who conducted the Safe School Study. The data used in this research were made available by the Inter-University Consortium for Political and Social Research. The data were originally collected by the Research Triangle Institute on behalf of the National Institute of Education. Neither the original source nor the Consortium bear any responsibility for the analysis or interpretation presented here.

# Classifying School Environments to Understand School Disruption

Researchers in the fields of education and delinquency have increasingly focused on the contributions of educational processes and climates to problems of school disruption, but in divergent ways. Delinquency researchers have usually depicted complex educational processes with broad strokes, thus oversimplifying the role of classroom and school environments. For example, Cohen's (1955) explanation of delinquency as a working class reaction to the middle class educational environment, and Schafer and Polk's (1967) concerns with tracking influences, although perhaps containing elements of validity, involve grossly oversimplified representations of educational environments that mask potential variation among classrooms and schools. Attempts to understand the process through which school experiences are translated into delinquent or disruptive behavior may profit from more analytic descriptions of school environments.

This report characterizes educational environments and relates these characterizations to disruptive behavior in school. The research draws on the experiences and approaches of scholars who have attempted to systematically portray educational environments. This integration of a focus on delinquency with a research tradition that seriously considers the description of school environments may be ultimately more productive than earlier research. More analytical descriptions of school environments will provide delinquency researchers with a better understanding of schools and with better research tools to explore the interaction of students and schools in the development of delinquent behavior. This

research aims to produce such an analytical portrayal of school environments by organizing a great deal of information about schools and describing in graphical and quantitative terms clusters of schools that share distinctive characteristics.

Knowledge of the social settings in which behavior occurs may improve the predictability of behavior (Stern, Stern, & Bloom, 1956). Some children may learn better in certain educational environments than in others. Whereas early educational research usually sought the one best instructional method, or examined individual differences in learning potential, Cronbach (1957) has proposed that educational researchers seek to learn about the types of instructional methods that are best suited to different types of students. More recently, Cronbach and Snow (1977) have summarized the literature on aptitude-instruction interactions which illustrates the fruitfulness of searching for person-environment interactions.

The search for person-environment interactions has been hampered by divergent approaches to the characterization of environments, by a lack of agreed upon tools to measure school environments, and in many cases by a lack of careful attention to the problem of measurement of environments. This is understandable because social environments are "unwieldy," making environments "difficult to deal with as objects of investigation" (Insel & Moos, 1974, p. 181). Nonetheless, Moos (1973) has suggested six ways to conceptualize and organize the research on human environments, which we will use to organize the early steps in the present research.

1. Ecological dimensions. This approach to studying environment focuses on the effects of climate, topography, and physical design on behavior.

2. Dimensions of organizational structure. This approach focuses on the effects of such variables as size, staffing ratios, and organizational control on behavior.

3. Personal characteristics of an environment's inhabitants. This approach assumes that the personal characteristics of individuals inhabiting an environment influence behavior. It focuses on how sex, age, race, intelligence, academic level, personality, or the socioeconomic level of an environment's inhabitants influence behavior.

4. Behavior settings. This approach emphasizes the simultaneous study of environmental and behavioral aspects of places. A behavior setting is defined in terms of the behavior which occurs in it and which is expected there. Both the place or structure and the behavior of individuals in it at a given time are part of a behavior setting, and although the individuals are interchangeable, the place without the behavior is not a behavior setting (cf. Barker, 1968).

5. Functional or reinforcement properties of environments. This approach assumes that behavior in an environment is determined largely by the consequences of that behavior in terms of rewards and punishments.

6. Psychosocial characteristics and organizational climate. This approach usually relies on informants' perceptions of an environment to contribute to the understanding of behavior in it.

Most of these approaches to the study of school or classroom environments are illustrated in the literature, and Moos (1973) provides a fairly comprehensive discussion of each approach with examples from the general social-psychological literature. It is apparent from Moos's discussion

that a neat categorization of studies or researchers in terms of their approach would be difficult to accomplish. For example, Astin (Astin, 1968; Astin & Holland, 1961) has employed organizational structure (size of college) and personal characteristics of inhabitants (major fields of students, degrees held by faculty) among his measures of institutional characteristics. Despite these difficulties, the conceptual framework--the six ways of thinking about environments--outlined by Moos (1973) provide a useful way to structure research on educational climates.

In particular, Moos's scheme offers an alternative to the ways of conceptualizing climates in a previous report from our program (Gottfredson & Daiger, 1979). That earlier research sought to identify and measure school characteristics for the purpose of probing some causal hypotheses. Gottfredson and Daiger wanted to learn whether and in what ways certain aspects of school size, resources, staffing, location, governance, and psychosocial climate influence the amount of disruption schools experience. In order to probe causal hypotheses in that research, they found it useful to distinguish broad categories of variables in ways which would allow the appropriate application of statistical controls. Hence, the categories of school characteristics in that study included (a) exogenous characteristics of the community within which the school is located, (b) community crime levels and demographic characteristics of the studentry, (c) school size, staffing, and resources, (d) teacher and principal reports of governance and educational climate, and (e) student reports of social climate and measures of studentry "socialization." The school characteristics were grouped in this way so those characteristics early in this list could be used as statistical controls when searching for nonspurious

associations with school disruption levels for those school characteristics appearing later in the list.

The goal of the present research is different. Our purpose is to broadly characterize school environments in order to learn whether distinctive clusters of schools may be identified and described. We seek a shorthand and heuristic method of grouping schools in terms of the major dimensions of their social environments. The goal is to produce an analytical but parsimonious account of differences and similarities among schools. Such an account may contribute to the subsequent search for student-school environment interactions in the production of delinquency. Specifically, the present research (a) uses Moos's six ways of conceptualizing environments to guide our search for relevant school characteristics, and (b) uses hierarchical clustering techniques rather than regression techniques to provide simple multivariate descriptions of patterns in school environmental characteristics.

The present research is, however, explicitly built on the Gottfredson and Daiger (1979) research. Many of the school characteristics examined here are assessed using scales developed by them. Measures used in the earlier research have been supplemented by measures suggested by Moos's (1973) schema, provided that sensible measures could be located in the available data. Therefore, scales with considerable psychometric virtue have been used, rather than beginning the task of measurement anew.

## Method

### Data

Data about 642 secondary schools, half junior high schools and half senior high schools, collected as part of the Safe School Study (National

Institute of Education, 1978), were examined. Questionnaire data collected in phase two of that project include principal, teacher, and student reports. Information about community characteristics based on scales developed earlier by Gottfredson and Daiger (1979) based on 1970 census data were also used. An attempt was made to collect questionnaire data from principals and all teachers, and from a random sample of about fifty students in each school. The questionnaires are shown and details of questionnaire administration are fully described by the National Institute of Education (1978, Volume 2). Although the data are drawn from a diverse cross-section of schools, they may not be strictly representative of the population of schools, principals, teachers, or students. Of schools asked to participate in the study 75%, or 642 of 833 schools, did so. Principal questionnaires were obtained from 623 persons, teacher questionnaires were administered in 623 schools, and student questionnaires were administered in 621 schools. Response rates for teachers to their self-administered questionnaire in these schools was 76% overall, and the corresponding response rate to the self-administered student questionnaires was 81%. Unweighted data were used in the present research.

These phase II data, including measures developed from it by Gottfredson and Daiger (1979), were scrutinized for ways of characterizing environments which accord with each of Moos's (1973) six strategies. We found no measures that appeared to represent the behavior setting approach or that clearly assessed functional or reinforcement properties. In retrospect this is not surprising because the kinds of observation necessary to study environments in these ways were not performed in collecting data for the Safe School Study. For example, although some information about

the responsiveness of the environment to student conduct was collected, this information is based on participant opinions rather than on direct observation of how consequences are applied to behavior. As a result, our analyses are limited to measures corresponding to four of Moos's six ways of conceptualizing environments.

Methods

We initially attempted to examine each of the four approaches separately. The original plan was to derive clusters of schools based on measures corresponding to each of Moos's approaches, then to examine the extent to which clusters based on the four approaches converge. After considerable exploration, we abandoned this approach. Factor analyses were often difficult to interpret, and cluster solutions were complex and unenlightening. One interpretation of this outcome is that none of these four approaches was represented sufficiently in the Safe School Study's data collection to provide broad or comprehensive information about school environments when taken alone. Based on this interpretation, we used information about school environments according to all four perspectives simultaneously to develop classifications of schools. This broad characterization produced reasonable and interpretable results.

Principal components analysis was used as a data reduction tool and to define a space within which distances among schools could be calculated. Computer limitations and problems of extreme multicollinearity (discussed for these data by Gottfredson & Daiger, 1979, Chapter 3) necessitated the deletion of some variables from the list of those initially identified as according with one of the four perspectives. The variables used in the principal components analyses are shown in Table 1, and a more

complete description may be found in Appendix A. The variables marked with an asterisk in Appendix A are scales developed in earlier research (Gottfredson & Daiger, 1979). Information about the psychometric properties of these scales is available in the report of that research. The other variables were either not included in the earlier research (e.g., whether or not the school has a cafeteria), were included in scales not used here (e.g., student particupation in athletics), or were used as indexes without being combined with other measures (e.g., school total enrollment). Principal components analysis was used separately to derive solutions for junior and senior high schools. The two unrotated factors that accounted for the largest share of the total variance were rotated using the varimax criterion to define a two-dimensional space. Factor scores on each of the resulting factors were calculated to provide a location for each school in the two-dimensional Cartesian space defined by the orthogonally rotated factors.

The distance measure on which clustering was based is the simple Euclidean distance between the schools in that two-space. Agglomerative clustering proceeded iteratively. At each iteration, the two clusters nearest each other were combined. The location of such composite clusters in the two-space was determined by taking the weighted average of the coordinates for the two clusters being combined. The weighting was based on the number of schools in each of the two clusters being joined. The criterion for deciding when to stop clustering was essentially arbitrary. We made this decision in the following way: (a) A plot of the distances between clusters being combined at each iteration was examined. Only when a break occurred (i.e., a noticeable jump in the size of these distances occurred) was that iteration considered for its appropriateness. (b) The

graphical representation of the clusters joined at each iteration in the two-space defined by the factors was examined. Clustering was stopped when clusters which intuitively should not be combined began to be joined.

Finally, the characteristics of the resulting clusters were described, not only in terms of their means and standard deviations for variables contributing to the calculation of factor scores, but also in terms of the extent of student and teacher victimization they experience. The student and teacher victimization measures developed by Gottfredson and Daiger (1979, Chapter 4) were used. These measures are based on self-reports of personal victimization and include some relatively minor forms of indignities (especially for the teacher measure) as well as thefts, attacks, and robberies. The two measures correlate only .19 with each other for both junior and senior high schools and have alpha reliabilities ranging from .69 to .78.

## Results

The factor solutions used to define the distances among schools are shown in Table 1. The first three columns show the factor loadings and communalities for junior high schools, and the fourth through sixth columns show these results for senior high schools.

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Insert Table 1 About Here

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For both levels of secondary schools, the first factor appears to tap a dimension that might be called urban disorganization. High scoring schools on this factor tend to be located in large cities, with the surrounding neighborhoods characterized by high levels of poverty, unemployment, many female-headed households, and high levels of community crime.[1]

These schools are also likely to employ extensive security measures. A high-scoring school tends to have a high proportion of students who are non-white, a high porportion of students rated by principal and teachers as low in ability, as coming from families with the father absent, and as members of families on welfare. Relatively many students have repeated a year in school, and for high schools there tend to be many dropouts. In a high-scoring school, resources for teaching tend to be inadequate, enrollments tend to be large; teacher-administration cooperation tends to be low, and the principal does not share decision-making with others. Compared to other schools, teachers often emphasize keeping control in class rather than other instructional objectives, and the principal is reported to be unfair. In such a school relatively many teachers apply ambiguous sanctions (lowering grades as a response to misconduct or simply ignoring it). Perhaps partly as a result of some of the characteristics already described, in a high-scoring school students tend not to regard the school rules as fair and clear, race relations are relatively poor, students tend not to report belief in conventional social rules, nor to report that what other students think is important. In short, a high-scoring school may generally be characterized as large in size, having administrative difficulties, emphasizing maintenance of control, and being relatively anomic. A low-scoring school would have the opposite characteristics, although this factor is not as strongly bi-polar as the second factor.

The second factor is also highly similar for both junior and senior high schools. The name <u>academic suburbanism</u> might be applied to this factor for both levels of schools. A school scoring high on this factor tends to be located in an area characterized by affluence and education. Among senior high schools, high-scoring schools tend to be equipped with a gym-

nasium and an athletic field or playground. For both levels of secondary schools, those scoring high on the second factor have relatively highly educated teachers (in senior high schools, relatively few of whom teach industrial arts). The high-scoring school usually has more experienced teachers who spend relatively many hours helping students outside of class. In terms of student characteristics the high-scoring school tends to have students who are children of highly educated parents and who report themselves to be high in ability. It is relatively rare for these students to have repeated a year in school. Especially among senior high schools, these schools tend to be large, and students rotate through classes taught by different teachers. At the same time, parent involvement and influence is high in high-scoring senior high schools. In such schools teachers tend to emphasize college preparation, as do students. What have been called "clear sanctions" are seldom employed in a high-scoring school (i.e., students are not paddled; nor are special privileges granted as an inducement to positive student involvement.) Students do not generally perceive rule enforcement as firm and clear. Grades awarded in these schools tend to be high. There is a tendency for students to agree that if students use drugs at school it is their own business; that alcohol, marijuana, heroin or stolen goods are easy to get at school: and that they would not pass on information about an incident of vandalism (cf. items in the "delinquent youth culture scale," Gottfredson & Daiger, 1979). In summary, a high-scoring school is typically characterized by privileged students and low enforcement of rules. The factor is strongly bi-polar.

The results of the clusterings are shown in tabular form in Tables 2 and 3 for junior and senior high schools, respectively. For completeness, the centroids of all clusters are shown, despite the extremely small size

of some of them. The decision to stop clustering after the 287th iteration for junior high schools resulted in thirteen clusters ranging in size from three to eighty-eight schools. Stopping after the 286th iteration for high schools resulted in fourteen clusters ranging in size from two to seventy-six schools.

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Insert Tables 2 and 3 About Here

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These results are illustrated in simplified graphical form in Figures 1 and 2. In these figures the center of each circle is located at the centroid for each cluster in the two-dimensional factor space. The area of each circle is roughly proportional to the number of schools in the cluster. The figures are intended to provide a visual summary of the cluster solutions in terms of the space defined by the factor structure described earlier. These figures illustrate that the second factor for both junior and senior high schools is more strongly bi-polar than is the first factor.

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Insert Figures 1 and 2 About Here

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Because we are ultimately interested in using school classifications to understand levels of disruption which schools experience, the levels of disruption which characterize the clusters developed here are of interest. Figures 1 and 2 display these results in simplified form (see Tables 4 and 5 for means and standard deviations). The numbers within the circles show mean scores for schools in that cluster on the teacher (above) and student (below) victimization measures. In general, teacher victimization rates may be seen to be highest for schools to the right of the figures for both junior and senior high schools. Furthermore, the differences

are large in relation to the within cluster standard deviations (see Table 6). The teacher victimization rates bear no striking or consistent relation to the location of a cluster along the vertical axis of these figures (i.e., the second factor). Student victimization also shows this general pattern--a reasonably strong tendency for those clusters to the right to have higher levels of student victimization, but no clear relation to the vertical location of the cluster in this space. The degree of separation of the clusters in terms of student victimization levels, however, is much less than was observed for teacher victimization. That is, when one considers the within cluster variability (see Table 6) the overlap among clusters is great.

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Insert Table 6 About Here

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The rather striking degree of association of school disruption with the horizontal axes in Figures 1 and 2 is remarkable in view of the exclusion of disruption measures from the set of variables on which the factor analyses and clustering were based.

## Discussion

In his recent presidential address before the American Association for the Advancement of Science, Boulding (1980) noted that quantification is used to help us "perceive relationships in the topological structures of the real world, even of great complexity, by mapping numbers into them," but that the quantification itself is an "illusion," a "prosthetic device" to help us map out topological structures (p. 833). This report is an attempt to simplify and make easier the perception of complex relations among many aspects of school environments by developing a representation

in quantitative and graphical terms of the topography of school environments. We have constructed a crude map of the school social terrain.

We believe our map is provocative. (In more traditional terms, it may have heuristic value.) Before saying more, however, we will describe what appear to be the major limitations of the present research. First, the kinds of environmental measures available to us are incomplete. In terms of the conceptual scheme provided by Moos (1973), and described earlier in this report, data to characterize school environments in terms of behavior settings and functional reinforcement properties of schools were unavailable. These are serious limitations because these two ways of studying environments appear to be among the most productive in terms of their power to forecast the behavior of people in environments. Second, the topography presented here is extremely simplified. Only the two most important summary dimensions (factors) of school environments have been used to create the conceptual plane within which we map schools. Other limitations result from (a) the cross-sectional nature of the data collected in the Safe School Study, (b) the use of questionnaire data rather than direct observation, (c) the difficulties inherent in the secondary analysis of data collected by others, (d) the passive analysis of correlational data rather than active attempts to determine the consequences of interventions in schools, and (e) the use of measures for which only limited evidence of construct validity is available.

In this research we have characterized schools according to their relative standing along two major dimensions of school differences--urban disorganization and academic suburbanism. Schools may be sorted according to their relative standing on these dimensions to summarize a great deal

of information about them. This is possible because various school characteristics tend to be linked, i.e., one observes that a school high on some measure is also generally high on certain others, and generally low on still others.

Insel and Moos (1974) have suggested that three broad categories of dimensions generally emerge from the study of the psychosocial characteristics of environments--relationship, personal development, and system maintenance and change dimensions. Each of these broad categories often is represented by more than one dimension. Thus order, clarity, and control dimensions are often observed in the system maintenance and change category. In an earlier report which developed many of the environmental measures used here, a number of scales apparently related to the psychosocial dimensions described by Insel and Moos (1974) were constructed. For example, the measures called ambiguous sanctions, policy confusion, and teacher-administration cooperation appear to be system maintenance and change dimensions. The present research provides some insight into the higher order organization of these dimensions. The factor analysis summarized in Table 1 implies that the rather specific dimensions of psychosocial climate are often associated with two overarching factors of school environment. Thus, despite some psychometric and conceptual reasons to regard the specific dimensions as meaningful and useful, it is also useful to regard the overarching dimensions as powerful organizers of information about many different aspects of school environment. These factor analytic results also demonstrate that psychosocial dimensions are related to, rather than independent of, the ecological, organizational, and demographic characteristics of environments.

Distinctive, exceedingly isolated clusters do not characterize the data. At the same time, schools are not uniformly distributed throughout the space examined. Regarding schools as clustered or grouped into well defined categories or types requires abstraction. The data imply that communication may be facilitated by speaking of schools of a certain "type," even though it must be understood that simplification is occurring when one uses such shorthand. No school exactly resembles a model or typical school constructed based on the cluster results.

Nevertheless, creating such abstractions suggests hypotheses about what may be occurring in schools and suggests that different strategies for coping with disruption may be more effective for different kinds of schools. Appendix B provides descriptions of actual junior high schools which are located in some of the major clusters shown in Figure 1. Our goal in describing these junior high schools is to give the reader a feel for the concrete counterpart of the abstract respresentation of clusters described more analytically in our tables.

The existence of clusters of schools with similar levels of disruption (e.g. junior high school clusters 9 and 10, see Table 6) but with different profiles of school characteristics (see Table 4) implies that different approaches to increasing orderliness may be called for. The typical school in cluster 9 is an urban, academically oriented school whose students are children of educated parents who regard themselves as high in ability, and where drugs and alcohol (delinquent youth culture) are relatively available. In contrast, the cluster 10 schools are often nonmetropolitan schools, and they are more vocationally or nonacademically oriented schools. The parents of students in a typical school are somewhat less educated than average, and the students regard themselves as somewhat below average in

ability. Drugs and alcohol are relatively absent. Despite these differences, the disruption levels are similar for these schools.

Such observations are provocative because they suggest the possibility of developing a diagnostic scheme to specify school interventions to reduce or prevent trouble for particular schools. Development of such a scheme is a goal worth further study. This report, and the earlier report from our program (Gottfredson & Daiger, 1979) provide promising beginnings toward the development of such a diagnostic classification of schools.

The literature (Barker & Gump, 1964; Garbarino, 1978; Gottfredson & Daiger, 1979; Ianni, 1978; McPartland & McDill, 1976; Pence & Taylor, 1978) implies that large schools experience more trouble than smaller schools. An explanation often offered for this observation--manning theory--has its roots in the behavior setting perspective. Manning theory assumes that the number of social roles in a setting in relation to the total number of people in a setting is important. Whether a school has 500 students or 1,500 students, it usually has only one student government, one football team, and one school newspaper. Larger schools will therefore have proportionately more persons available to play various roles. Each individual person, therefore, is less essential to the conduct of activities in the school. If one student does not play a role in a satisfactory way, then a replacement is readily available. In contrast, when an environment is "undermanned," then social pressure for persons to conform is increased. In order to "man" the behavior settings, misconduct is responded to by an environment's inhabitants so as to bring about social control. Such "deviancy countering" enforces the acceptability of people's behavior.

An alternative explanation involves a sense of anomie among people in a large school. Because there are so many students, an individual may feel unnoticed, not a part of things. Students in large schools have proportionately fewer opportunities to participate in socializing activities

and in conventionally approved conforming behavior. Thus many students in large schools may lack ties to the school, resulting in a state of normlessness or anomie. These explanations are not inconsistent with each other. Furthermore, the Table 1 results imply that school size, rates of participation in various school activities, and measures of school attachment and belief in rules are all associated with the same general factor. The results, then, are consistent with these theoretical perspectives although they represent only weak empirical tests of these ideas.

The results imply that the experiences of students in the school are different in central-city and suburban schools. Suburban schools tend to have newer and better facilities, teachers who spend time helping students outside of class, and more resources for teaching. This contrasts with the facilities, resources, and practices of central city schools. Youth in urban schools are therefore placed in an environment markedly different from that of their suburban counterparts. The observation that youth in urban schools typically have low levels of attachment to school may be coupled with the observation that there is less to be attached to in those schools than in the typical suburban school. The relative lack of participation in athletics and other school activities in the urban schools, and the ambiguous normative structure typical of such schools, would not be expected to foster high degrees of belief in conventional social rules or the development of social skills. The divergent environments characteristic of central city and suburban schools helps to explain the divergent levels of school attachment in those two kinds of schools.

An examination of the organizational and administrative aspects of urban and suburban schools implies that these schools are characterized

by marked differences in this area as well. Urban schools tend to be characterized by a greater emphasis on keeping control. But the use of ambiguous sanctions, the low degree of teacher-administration cooperation, the punitive attitudes of the teacher, and the poor ratings of the principal that are typical of central city schools creates an impression that such schools are typically poorly administered. When coupled with the relative absence of mechanisms to promote social bonding discussed in the preceding paragraph, the typically higher levels of disruption observed in urban schools than in suburban or rural schools is to be expected.

In order to search for student-school environment interactions, it is necessary to be able independently to characterize or measure school environments on the one hand, and students on the other. The environmental characterizations presented here provide one tool needed to search for student-school interactions. A particular school environment may not influence all students in the same way. Gottfredson (1980) has illustrated this possibility in the context of a discussion of the theoretical perspectives developed by Cohen (1955) and Stinchcombe (1964). A school environment emphasizing and rewarding excellence in traditional academic pursuits may provide mostly thwarting experiences for a student with low academic ability, and that student may be better served by an environment providing and rewarding basic learning and vocational skills and experiences. The opposite may be true for a student with high academic potential.

Finally, it is important to highlight some optimistic implications of the present results. It would be difficult to drastically alter the demographic composition of schools or their community contexts. Yet there are aspects of school organization which are potentially more manipulable. Manning ratios can be altered by reorganizing schools into subunits, by

resisting the temptation to close schools as enrollments shrink, and by taking imaginative steps to increase the numbers of behavior settings (and therefore the numbers of roles for students) in schools. Similarly, administrative styles can be altered either by replacing administrative personnel, or by helping current or future administrators adopt positive practices. The relatively large standard deviations shown in Table 6 imply that even for schools that resemble each other in many ways, some apparently cope better than others. This optimistic note accords with Gottfredson and Daiger's (1979) earlier research that implied that salutory school governance and social climate can apparently make unique contributions to lowered disruption rates.

## Footnotes

1. These descriptions rely in part on the item content of the scales used. See Appendix A and Gottfredson and Daiger (1979) for details.

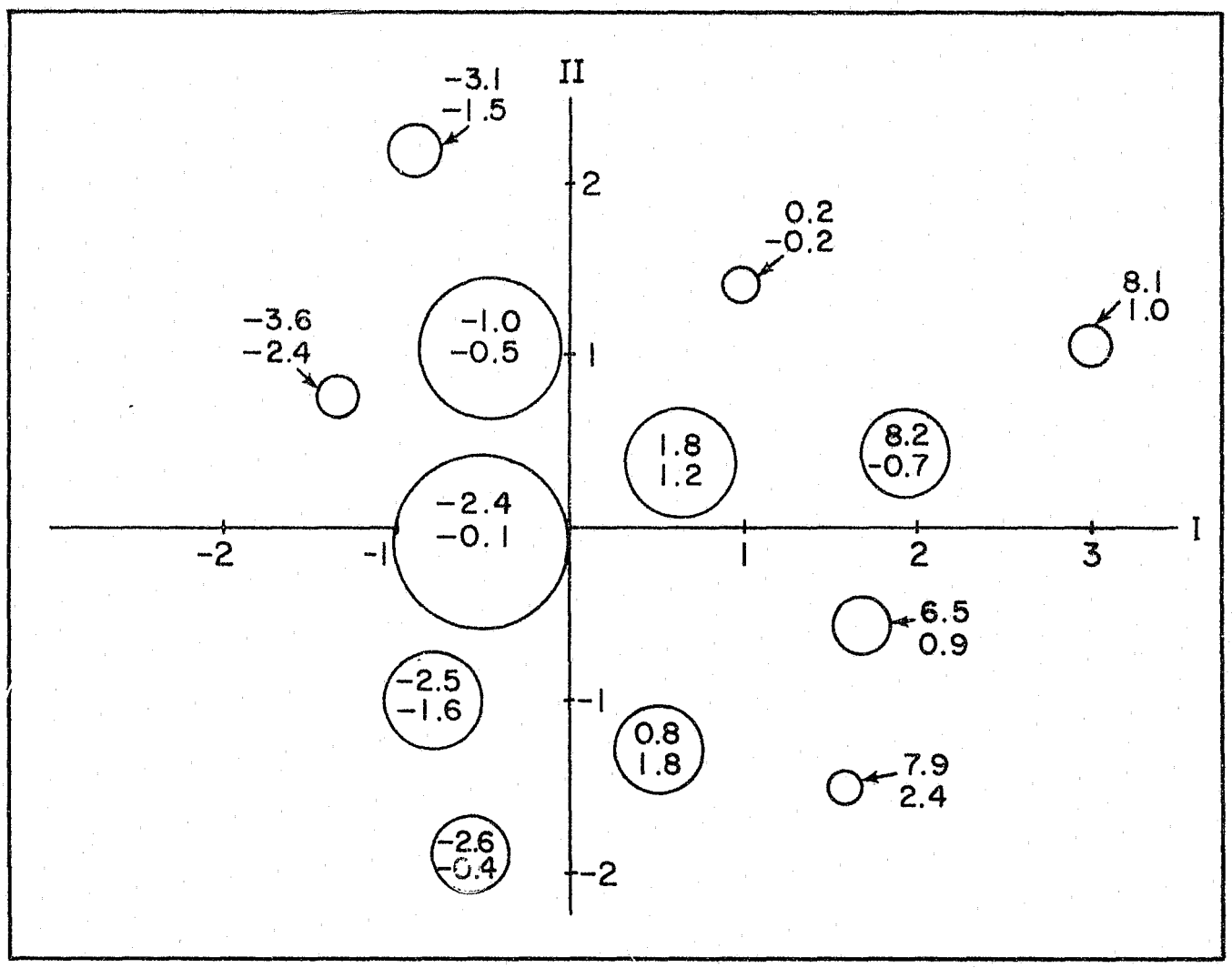


Figure 1. Junior high school clusters. Numbers show average teacher victimization (above) and student victimization (below).

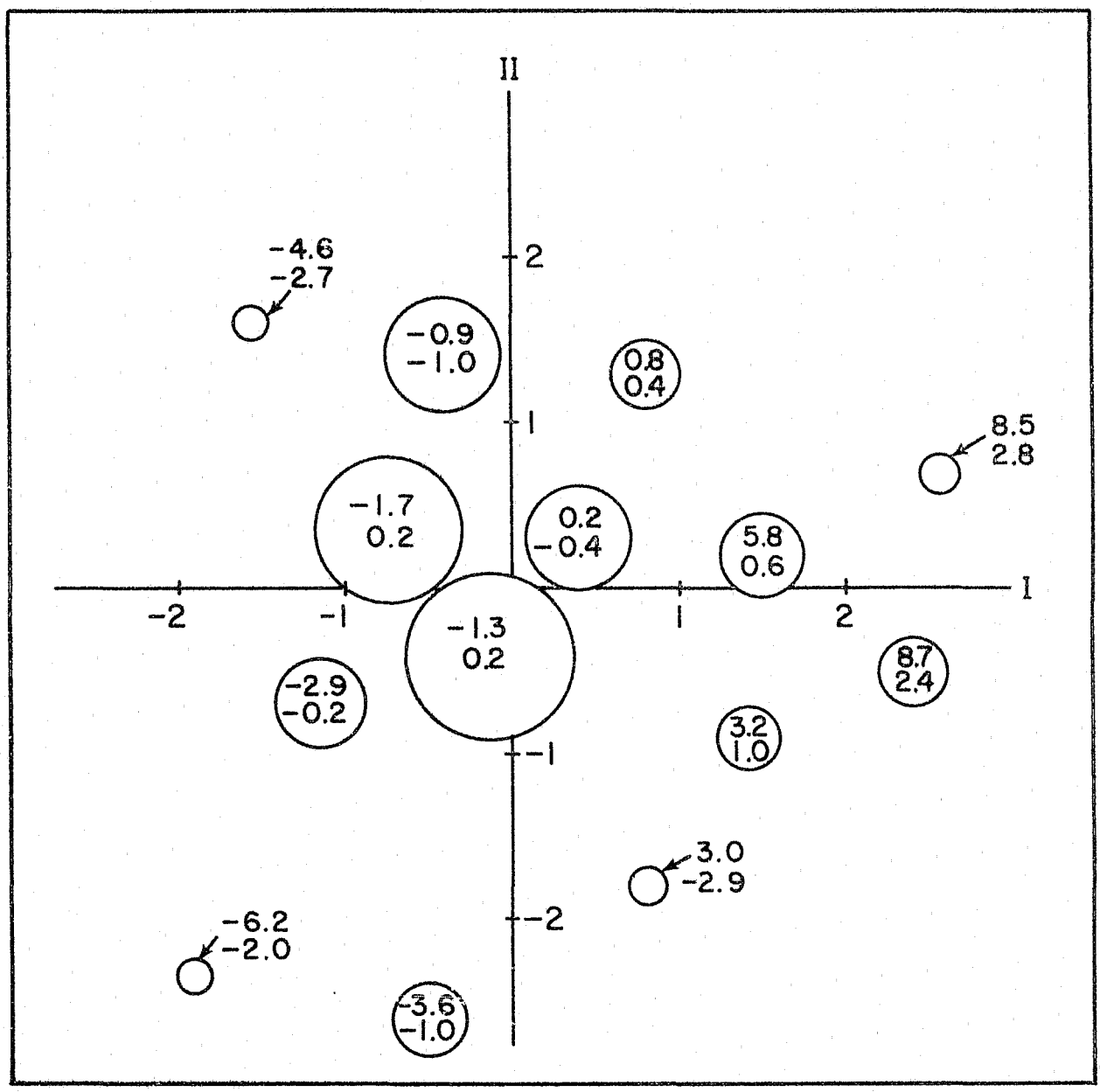


Figure 2. Senior high school clusters. Numbers show average teacher victimization (above) and student victimization (below).

Table 1

Rotated Principal Components Solutions Used to Create Distance Measures Among Schools

| School Characteristic | Junior High | | | Senior High | | |
|---|---|---|---|---|---|---|
| | I | II | $h^2$ | I | II | $h^2$ |
| Ecological characteristics | | | | | | |
| Rural (vs. urban) location | -73 | -18 | 57 | -70 | -25 | 56 |
| Poverty and unemployment | 65 | -14 | 44 | 56 | -10 | 32 |
| Affluence and education | 03 | 69 | 48 | 17 | 57 | 35 |
| Community crime | 62 | -14 | 41 | 63 | 03 | 40 |
| Extensiveness of security measures | 60 | 06 | 37 | 58 | 20 | 38 |
| Age of school building | 23 | -12 | 07 | 37 | 08 | 14 |
| Condition of building | -30 | 17 | 12 | -32 | -01 | 10 |
| Proportion of "open" classrooms | 02 | 06 | 00 | 03 | -15 | 02 |
| School has: Cafeteria | 01 | 02 | 00 | 06 | 35 | 12 |
| Gymnasium | 03 | -08 | 01 | 08 | 55 | 31 |
| Parking lot | -38 | -04 | 15 | -24 | 07 | 06 |
| Athletic field or playground | -27 | -02 | -07 | -25 | 43 | 25 |
| Characteristics of the inhabitants | | | | | | |
| Teachers: | | | | | | |
| Percentage white | -54 | 39 | 44 | -53 | 16 | 30 |
| Average educational level | 28 | 52 | 35 | 24 | 73 | 59 |
| % mostly teaching trades or ind. arts | 31 | 30 | 18 | 00 | -53 | 28 |
| Average years of teaching experience | 06 | 18 | 04 | 11 | 54 | 30 |
| Hours spent helping students outside class | -30 | 33 | 20 | -16 | 48 | 25 |
| Students: | | | | | | |
| Social and educational disadvantage | 74 | -36 | 67 | 74 | -28 | 63 |
| Parental education and self-reported ability | -21 | 64 | 45 | -25 | 70 | 56 |
| % employed full- or part-time | -40 | 24 | 22 | -41 | 17 | 20 |
| % ever repeated a year in school | 34 | -55 | 42 | 52 | -49 | 51 |
| Average grade level | 17 | 00 | 03 | 08 | 00 | 01 |
| Percent female | -04 | 06 | 00 | -03 | 15 | 02 |
| Number of dropouts | 16 | -30 | 12 | 51 | 02 | 26 |
| % participating in: Athletics | -32 | 09 | 11 | -33 | 23 | 16 |
| Band, orchestra, chorus | -30 | 17 | 12 | -36 | 06 | 14 |
| School clubs | -17 | -17 | 06 | -36 | -14 | 15 |
| Student government | 14 | 06 | 02 | -08 | 09 | 02 |

(con't)

Table 1 (con't)

Rotated Principal Components Solutions Used to Create Distance Measures Among Schools

| School Characteristic | Junior High | | | Senior High | | |
|---|---|---|---|---|---|---|
| | I | II | $h^2$ | I | II | $h^2$ |
| Organizational characteristics | | | | | | |
| Teaching resources | -51 | 18 | 30 | -51 | -03 | 26 |
| School total enrollment | 46 | 16 | 24 | 44 | 44 | 38 |
| Desegregation | 30 | -37 | 23 | 37 | -03 | 14 |
| Average number of different students taught | 11 | 28 | 09 | 17 | 41 | 20 |
| Average class size | 21 | -06 | 05 | 36 | 29 | 22 |
| Student-parent influence | -22 | 34 | 16 | -28 | 57 | 40 |
| Principal report of parent involvement | 01 | 16 | 02 | 03 | 45 | 20 |
| Principal report of PTA involvement | 21 | 14 | 06 | 33 | 42 | 29 |
| School has parent advisory committee | 27 | -10 | 08 | 31 | 17 | 13 |
| Ratio of admin. and special staff to teachers | -08 | 02 | 01 | -21 | -22 | 09 |
| Psychosocial characteristics | | | | | | |
| Teacher reports: | | | | | | |
| Teacher-administration cooperation | -53 | -05 | 29 | -38 | -31 | 24 |
| Policy confusion | 14 | -05 | 02 | 15 | -10 | 03 |
| Teacher culture | -02 | 27 | 07 | -08 | 24 | 06 |
| Teacher democratic approach | 15 | 04 | 02 | 11 | 20 | 05 |
| Teacher punitive approach | 41 | 13 | 18 | 31 | 06 | 10 |
| Teachers give individual assignments | 21 | -18 | 08 | 11 | -22 | 06 |
| Grades important for class assignment | 08 | -26 | 07 | 07 | 09 | 01 |
| Teachers emphasize college preparation | -01 | 10 | 01 | -03 | 40 | 16 |
| Principal emphasizes basic skills | -14 | -02 | 02 | 03 | 11 | 01 |
| Teachers emphasize keeping control in class | 46 | -03 | 21 | 21 | -14 | 06 |
| Teachers say principal: Is friendly | -39 | -08 | 16 | -36 | -17 | 16 |
| Is fair | -51 | -12 | 28 | -38 | -24 | 20 |
| Is permissive | 03 | 08 | 01 | -08 | 01 | 01 |
| Is informal | -34 | -08 | 12 | -31 | -15 | 12 |
| Shares decision-making | -47 | -19 | 26 | -44 | -24 | 25 |
| Teachers, not administration, set policy re: | | | | | | |
| Passing | 06 | 50 | 25 | -11 | 33 | 12 |
| Controlling classroom disorder | -15 | 27 | 10 | -23 | 08 | 06 |
| Dealing with serious behavior problems | -15 | 36 | 15 | -10 | 23 | 06 |
| Discussing matters with parents | 11 | 27 | 09 | -08 | 17 | 04 |

(con't)

Table 1 (con't)

Rotated Principal Components Solutions Used to Create Distance Measures Among Schools

| School Characteristic | Junior High | | | Senior High | | |
|---|---|---|---|---|---|---|
| | I | II | $h^2$ | I | II | $h^2$ |
| Psychosocial characteristics (con't) | | | | | | |
| Teacher and principal reports of sanctioning practices: | | | | | | |
| Clear sanctions | 00 | -63 | 40 | -18 | -46 | 24 |
| Ambiguous sanctions | 61 | 28 | 45 | 44 | 08 | 20 |
| Student reports: | | | | | | |
| Perceived fairness and clarity of rules | -47 | 09 | 23 | -24 | -14 | 08 |
| Student influence | 32 | 12 | 11 | 00 | 13 | 02 |
| Firm and clear rule enforcement | -20 | -60 | 40 | -05 | -55 | 30 |
| School attachment | -28 | 03 | 08 | -18 | -24 | 09 |
| Good race relations | -53 | 51 | 54 | -49 | 16 | 26 |
| Student college vs. vocational orientation | 18 | 32 | 14 | 16 | 60 | 39 |
| Average student internal control | -07 | 31 | 10 | -03 | 32 | 10 |
| Delinquent youth culture | 25 | 39 | 21 | 04 | 43 | 19 |
| Belief in conventional social rules | -49 | 12 | 25 | -34 | 28 | 19 |
| Mean grade point average | 10 | -51 | 27 | 42 | -33 | 29 |
| Average number of close friends | 19 | -50 | 29 | -18 | -21 | 08 |
| Students know each others' grades | 41 | -27 | 24 | 34 | -24 | 17 |
| Importance of what other students think | -75 | 24 | 62 | -75 | 04 | 56 |

Note. Decimals omitted.

Table 2

Junior High Cluster Solution

| Cluster | Number of Schools | Mean Score | |
|---|---|---|---|
| | | Factor 1 | Factor 2 |
| 1 | 88 | -.53 | -.09 |
| 2 | 56 | -.47 | 1.09 |
| 3 | 35 | .64 | .36 |
| 4 | 27 | -.79 | -1.02 |
| 5 | 23 | .51 | -1.29 |
| 6 | 22 | 1.93 | .44 |
| 7 | 18 | -.59 | -1.90 |
| 8 | 10 | 1.73 | -.58 |
| 9 | 7 | -.91 | 2.23 |
| 10 | 4 | -1.34 | .76 |
| 11 | 4 | 2.99 | 1.05 |
| 12 | 3 | .98 | 1.41 |
| 13 | 3 | 1.57 | -1.51 |

Table 3

Senior High Cluster Solution

| Cluster | Number of Schools | Mean Score | |
|---|---|---|---|
| | | Factor 1 | Factor 2 |
| 1 | 76 | -.14 | -.41 |
| 2 | 57 | -.75 | .36 |
| 3 | 37 | -.43 | 1.40 |
| 4 | 28 | .43 | .29 |
| 5 | 22 | -1.15 | -.70 |
| 6 | 20 | 1.48 | .23 |
| 7 | 14 | -.48 | -2.58 |
| 8 | 13 | 2.43 | -.50 |
| 9 | 12 | .81 | 1.27 |
| 10 | 10 | 1.37 | -.90 |
| 11 | 4 | 2.58 | .68 |
| 12 | 3 | .82 | -1.79 |
| 13 | 2 | -1.56 | 1.61 |
| 14 | 2 | -1.91 | -2.35 |

Table 4

Means and Standard Deviations for Junior High School Clusters

| School Characteristic | Cluster 1 M | 1 SD | 2 M | 2 SD | 3 M | 3 SD | 4 M | 4 SD |
|---|---|---|---|---|---|---|---|---|
| Ecological | | | | | | | | |
| Rural (vs. urban) location | 3.11 | .84 | 2.89 | .68 | 2.23 | .84 | 3.59 | .57 |
| Poverty and unemployment | -.35 | .40 | -.45 | .34 | -.08 | .50 | -.22 | .59 |
| Affluence and education | .02 | .60 | .68 | .48 | .39 | .64 | -.70 | .70 |
| Community crime | -.83 | 2.09 | -1.07 | 1.70 | .88 | 2.17 | -.74 | 2.28 |
| Extensiveness of security measures | 2.46 | 4.74 | 2.64 | 4.15 | 7.09 | 7.29 | 3.16 | 4.51 |
| Characteristics of the inhabitants | | | | | | | | |
| Teachers: Percentage white | 94.38 | 9.39 | 96.52 | 3.78 | 86.11 | 16.59 | 87.16 | 15.88 |
| Average educational level | 3.26 | .37 | 3.64 | .40 | 3.42 | .31 | 3.14 | .44 |
| Percentage mostly teaching trade or ind. arts | 5.85 | 4.44 | 5.98 | 4.02 | 7.89 | 2.98 | 3.41 | 3.76 |
| Students: Social disadvantage | -2.75 | 2.29 | -4.06 | 1.94 | .30 | 3.84 | -.53 | 3.19 |
| Parental education and self-reported ability | -.42 | 2.24 | 2.68 | 2.08 | -.54 | 1.75 | -.74 | 1.80 |
| Employed part-time or full-time (%) | -1.74 | .09 | -1.74 | .07 | -1.79 | .08 | -1.83 | .06 |
| Ever repeat a year in school (%) | -1.88 | .06 | -1.93 | .04 | -1.87 | .06 | -1.86 | .06 |
| Organizational | | | | | | | | |
| Teaching resources | 3.10 | .45 | 3.17 | .34 | 2.92 | .34 | 3.14 | .54 |
| School total enrollment | 759.34 | 336.17 | 864.04 | 286.76 | 1042.56 | 382.52 | 681.18 | 321.49 |
| Psychosocial | | | | | | | | |
| Teacher and principal reports of sanctioning practices: | | | | | | | | |
| Ambiguous sanctions | 3.54 | .47 | 3.88 | .67 | 4.11 | .56 | 3.50 | .57 |
| Teacher reports: | | | | | | | | |
| Teacher-administracion cooperation | 10.09 | .88 | 10.25 | .77 | 9.35 | .85 | 10.43 | 1.18 |
| Percentage mostly emphasizing control in class | 1.67 | 2.64 | 1.46 | 2.14 | 4.17 | 4.03 | 2.56 | 4.62 |
| Teachers overall rating of principal | 14.58 | 1.57 | 14.90 | 1.60 | 13.12 | 1.94 | 15.80 | 1.09 |
| Student reports: | | | | | | | | |
| Firm and clear enforcement | 5.34 | .71 | 4.64 | .76 | 4.93 | .74 | 6.08 | .50 |
| Good race relations | 7.14 | .32 | 7.52 | .34 | 6.89 | .48 | 7.05 | .30 |
| College vs. job orientation | -2.03 | 4.94 | 2.34 | 4.20 | -.97 | 3.62 | -1.26 | 4.98 |
| Delinquent youth culture | 1.29 | 6.05 | 5.19 | 6.76 | 6.29 | 6.13 | -4.25 | 6.11 |
| Belief in conventional rules | .84 | 3.51 | 1.21 | 3.52 | -1.57 | 3.34 | 1.54 | 2.70 |
| Mean grade average | 2.68 | .22 | 2.88 | .15 | 2.69 | .19 | 2.66 | .17 |
| Importance of what other students think | 2.39 | .13 | 2.42 | .10 | 2.26 | .15 | 2.35 | .12 |
| Total N for each cluster | 88 | | 56 | | 35 | | 27 | |
| Minimum N for each cluster | 71 | | 45 | | 27 | | 24 | |

(con't)

Table 4 (con't)

Means and Standard Deviations for Junior High School Clusters

| School Characteristic | Cluster 5 M | 5 SD | 6 M | 6 SD | 7 M | 7 SD | 8 M | 8 SD |
|---|---|---|---|---|---|---|---|---|
| Ecological | | | | | | | | |
| Rural (vs. urban) location | 2.48 | .90 | 1.18 | .50 | 3.78 | .43 | 1.30 | .48 |
| Poverty and unemployment | .21 | .60 | .96 | .96 | -.02 | .38 | 1.22 | 1.17 |
| Affluence and education | -.55 | .66 | .16 | .64 | -1.39 | .80 | -.45 | .93 |
| Community crime | 1.53 | 2.49 | 3.19 | 1.83 | -1.16 | 1.75 | 3.14 | 2.88 |
| Extensiveness of security measures | 6.92 | 6.11 | 14.10 | 4.89 | .77 | 3.11 | 14.65 | 7.14 |
| Characteristics of the inhabitants | | | | | | | | |
| Teachers: Percentage white | 67.78 | 18.02 | 71.91 | 21.21 | 77.76 | 14.51 | 52.16 | 28.12 |
| Average educational level | 3.17 | .30 | 3.85 | .51 | 3.01 | .32 | 3.50 | .45 |
| Percentage mostly teaching trade or ind. arts | 4.11 | 3.58 | 10.61 | 6.04 | 1.32 | 2.02 | 8.93 | 5.27 |
| Students: Social disadvantage | 3.52 | 4.00 | 8.77 | 4.50 | 2.08 | 1.98 | 11.60 | 3.48 |
| Parental education and self-reported ability | -1.43 | 2.26 | -.26 | 2.87 | -3.07 | 2.62 | -2.07 | 2.96 |
| Employed part-time or full-time (%) | -1.82 | .06 | -1.85 | .06 | -1.79 | .06 | -1.83 | .07 |
| Ever repeat a year in school (%) | -1.78 | .08 | -1.84 | .07 | -1.81 | .05 | -1.81 | .09 |
| Organizational | | | | | | | | |
| Teaching resources | 2.78 | .39 | 2.60 | .38 | 2.85 | .57 | 2.50 | .42 |
| School total enrollment | 949.44 | 310.58 | 1276.09 | 453.29 | 597.00 | 273.45 | 1031.50 | 261.74 |
| Psychosocial | | | | | | | | |
| Teacher and principal reports of sanctioning practices: | | | | | | | | |
| Ambiguous sanctions | 3.67 | .32 | 4.89 | .49 | 3.32 | .27 | 4.50 | .43 |
| Teacher reports: | | | | | | | | |
| Teacher-administration cooperation | 9.59 | 1.14 | 8.78 | .76 | 10.68 | .94 | 9.59 | 1.20 |
| Percentage mostly emphasizing control in class | 3.76 | 3.87 | 7.14 | 5.98 | 1.96 | 2.33 | 4.81 | 5.38 |
| Teachers overall rating of principal | 14.35 | 1.75 | 13.32 | 1.63 | 15.45 | 1.45 | 14.07 | 1.36 |
| Student reports: | | | | | | | | |
| Firm and clear enforcement | 5.51 | .70 | 4.73 | .60 | 6.06 | .49 | 5.11 | .65 |
| Good race relations | 6.59 | .40 | 6.66 | .31 | 6.76 | .30 | 6.45 | .35 |
| College vs. job orientation | -1.40 | 4.27 | 2.37 | 4.07 | -1.04 | 4.00 | 2.90 | 3.53 |
| Delinquent youth culture | 1.18 | 4.43 | 3.37 | 4.57 | -3.92 | 6.09 | 4.11 | 3.98 |
| Belief in conventional rules | -1.34 | 3.63 | -3.04 | 4.24 | 1.14 | 3.19 | -2.75 | 3.43 |
| Mean grade average | 2.51 | .19 | 2.76 | .25 | 2.55 | .15 | 2.62 | .30 |
| Importance of what other students think | 2.14 | .16 | 1.99 | .18 | 2.30 | .14 | 1.90 | .18 |
| Total N for each cluster | 23 | | 22 | | 18 | | 10 | |
| Minimum N for each cluster | 16 | | 16 | | 12 | | 8 | |

(con't)

Table 4 (con't)

Means and Standard Deviations for Junior High School Clusters

| School Characteristic | Cluster 9 M | 9 SD | 10 M | 10 SD | 11 M | 11 SD | 12 M | 12 SD |
|---|---|---|---|---|---|---|---|---|
| Ecological | | | | | | | | |
| Rural (vs. urban) location | 2.86 | .38 | 3.50 | .58 | 1.00 | .00 | 1.00 | .00 |
| Poverty and unemployment | -.64 | .20 | -.37 | .31 | 2.50 | 2.06 | .42 | 1.27 |
| Affluence and education | 1.46 | .12 | .10 | .63 | .20 | 1.30 | 1.00 | .05 |
| Community crime | -2.08 | 2.24 | -2.82 | .78 | 2.71 | 1.50 | -.68 | 1.08 |
| Extensiveness of security measures | 4.55 | 5.02 | -1.22 | .63 | 13.45 | 10.47 | 16.43 | 6.99 |
| Characteristics of the inhabitants | | | | | | | | |
| Teachers: Percentage white | 97.39 | 2.66 | 98.86 | 2.27 | 64.14 | 24.11 | 90.94 | 3.92 |
| Average educational level | 4.11 | .36 | 3.58 | .42 | 4.20 | .38 | 4.19 | .31 |
| Percentage mostly teaching trade or ind. arts | 5.11 | 2.22 | 4.14 | 1.35 | 6.25 | 4.69 | 10.93 | 4.18 |
| Students: Social disadvantage | -4.89 | 1.54 | -5.05 | 1.32 | 11.15 | 3.70 | -.07 | 3.99 |
| Parental education and self-reported ability | 7.81 | 1.29 | 2.68 | 1.43 | -1.35 | 3.68 | 3.77 | 1.62 |
| Employed part-time or full-time (%) | -1.76 | .07 | -1.72 | .10 | -1.91 | .00 | -1.76 | .05 |
| Ever repeat a year in school (%) | -1.95 | .04 | -1.92 | .02 | -1.86 | .08 | -1.94 | .02 |
| Organizational | | | | | | | | |
| Teaching resources | 3.37 | .32 | 3.44 | .16 | 1.98 | .11 | 3.20 | .35 |
| School total enrollment | 735.43 | 268.03 | 630.50 | 54.24 | 963.75 | 332.24 | 1451.67 | 143.08 |
| Psychosocial | | | | | | | | |
| Teacher and principal reports of sanctioning practices: | | | | | | | | |
| Ambiguous sanctions | 3.68 | .32 | 3.46 | .52 | 4.96 | .23 | 4.88 | .74 |
| Teacher reports: | | | | | | | | |
| Teacher-administration cooperation | 11.21 | 1.04 | 10.77 | .30 | 7.83 | .45 | 9.71 | .83 |
| Percentage mostly emphasizing control in class | .93 | 1.60 | .78 | 1.56 | 13.65 | 11.57 | 2.68 | 2.48 |
| Teachers overall rating of principal | 15.32 | .96 | 16.20 | 1.16 | 11.71 | 2.48 | 13.65 | 2.33 |
| Student reports: | | | | | | | | |
| Firm and clear enforcement | 4.07 | .28 | 4.28 | .83 | 4.06 | .54 | 4.83 | .86 |
| Good race relations | 7.70 | .25 | 7.67 | .20 | 7.10 | .25 | 6.89 | .32 |
| College vs. job orientation | 9.32 | 2.43 | 1.16 | 3.86 | 3.35 | 4.41 | 4.47 | 2.71 |
| Delinquent youth culture | 4.61 | 5.53 | -5.33 | 7.77 | -.56 | 3.17 | 8.69 | 2.50 |
| Belief in conventional rules | 3.03 | 3.76 | 3.58 | 1.60 | -2.85 | 2.38 | .57 | 2.40 |
| Mean grade average | 3.14 | .16 | 2.80 | .18 | 2.76 | .21 | 2.85 | .20 |
| Importance of what other students think | 2.48 | .09 | 2.45 | .12 | 1.92 | .06 | 2.30 | .07 |
| Total N for each cluster | 7 | | 4 | | 4 | | 3 | |
| Minimum N for each cluster | 7 | | 3 | | 4 | | 2 | |

(con't)

Table 4 (con't)

Means and Standard Deviations for Junior High School Clusters

| School Characteristic | Cluster 13 M | SD |
|---|---|---|
| Ecological | | |
| Rural (vs. urban) location | 1.00 | .00 |
| Poverty and unemployment | 1.32 | .61 |
| Affluence and education | -1.03 | .18 |
| Community crime | 5.24 | 2.28 |
| Extensiveness of security measures | 6.37 | 4.38 |
| Characteristics of the inhabitants | | |
| Teachers: Percentage white | 76.07 | 20.88 |
| Average educational level | 3.20 | .21 |
| Percentage mostly teaching trade or ind. arts | 2.44 | 2.14 |
| Students: Social disadvantage | 8.41 | 2.99 |
| Parental education and self-reported ability | -3.90 | 2.06 |
| Employed part-time or full-time (%) | -1.84 | .07 |
| Ever repeat a year in school (%) | -1.67 | .28 |
| Organizational | | |
| Teaching resources | 2.61 | .35 |
| School total enrollment | 996.67 | 895.99 |
| Psychosocial | | |
| Teacher and principal reports of sanctioning practices: | | |
| Ambiguous sanctions | 4.38 | .32 |
| Teacher reports: | | |
| Teacher-administration cooperation | 9.82 | 1.68 |
| Percentage mostly emphasizing control in class | 3.61 | 3.37 |
| Teachers overall rating of principal | 13.29 | 1.70 |
| Student reports: | | |
| Firm and clear enforcement | 5.27 | .89 |
| Good race relations | 6.58 | .20 |
| College vs. job orientation | -2.56 | 6.08 |
| Delinquent youth culture | .45 | 3.30 |
| Belief in conventional rules | -5.82 | 3.29 |
| Mean grade average | 2.53 | .12 |
| Importance of what other students think | 2.16 | .08 |
| Total N for each cluster | 3 | |
| Minimum N for each cluster | 3 | |

Table 5

Means and Standard Deviations for Senior High School Clusters

| School Characteristic | Clusters 1 M | 1 SD | 2 M | 2 SD | 3 M | 3 SD | 4 M | 4 SD |
|---|---|---|---|---|---|---|---|---|
| Ecological | | | | | | | | |
| Rural (vs. urban) location | 3.16 | .73 | 3.30 | .68 | 2.81 | .66 | 2.18 | .90 |
| Poverty and unemployment | -.09 | .52 | -.36 | .45 | -.36 | .61 | -.09 | .53 |
| Affluence and education | -.52 | .71 | .06 | .65 | .94 | .49 | .34 | .64 |
| Community crime | -.31 | 1.73 | -.99 | 1.60 | -.60 | 1.91 | .42 | 1.75 |
| Extensiveness of security measures | 4.26 | 4.80 | 2.73 | 5.23 | 5.77 | 5.29 | 6.80 | 5.84 |
| Characteristics of the inhabitants | | | | | | | | |
| Teachers: Percentage white | 86.59 | 15.23 | 96.38 | 6.22 | 94.15 | 5.11 | 85.68 | 12.44 |
| Average educational level | 3.29 | .35 | 3.58 | .38 | 4.10 | .34 | 3.59 | .39 |
| Percentage mostly teaching trade or ind. arts | 8.12 | 4.83 | 8.01 | 3.98 | 6.29 | 3.37 | 8.45 | 5.05 |
| Students: Social disadvantage | -1.10 | 3.60 | -3.23 | 1.89 | -3.72 | 2.48 | .41 | 2.74 |
| Parental education and self-reported ability | -.86 | 2.02 | .93 | 2.18 | 4.17 | 2.19 | .33 | 2.01 |
| Employed part-time or full-time (%) | -1.67 | .11 | -1.57 | .10 | -1.60 | .11 | -1.67 | .10 |
| Ever repeat a year in school (%) | -1.84 | .07 | -1.91 | .05 | -1.94 | .04 | -1.87 | .06 |
| Organizational | | | | | | | | |
| Teaching resources | 2.93 | .36 | 3.09 | .34 | 3.10 | .29 | 2.94 | .30 |
| School total enrollment | 1154.59 | 551.28 | 1095.58 | 478.66 | 1848.65 | 846.11 | 1759.89 | 798.97 |
| Psychosocial | | | | | | | | |
| Teacher and principal reports of sanctioning practices: | | | | | | | | |
| Ambiguous sanctions | 3.55 | .47 | 3.81 | .41 | 3.77 | .35 | 3.83 | .56 |
| Teacher reports: | | | | | | | | |
| Teacher-administration cooperation | 9.40 | .91 | 9.33 | .90 | 9.23 | .78 | 8.92 | .58 |
| Percentage mostly emphasizing control in class | 2.24 | 2.80 | 1.09 | 2.05 | .77 | 1.09 | 1.42 | 1.53 |
| Teachers overall rating of principal | 14.14 | 1.46 | 14.24 | 1.63 | 14.22 | 1.60 | 13.29 | 1.67 |
| Student reports: | | | | | | | | |
| Firm and clear enforcement | 5.09 | .80 | 4.22 | .74 | 3.63 | .66 | 4.54 | .70 |
| Good race relations | 7.13 | .48 | 7.46 | .46 | 7.56 | .43 | 6.96 | .50 |
| College vs. job orientation | -1.50 | 5.77 | -1.90 | 4.50 | 8.18 | 6.51 | .17 | 4.18 |
| Delinquent youth culture | -1.96 | 6.28 | 1.74 | 4.69 | 4.34 | 3.76 | 1.36 | 4.67 |
| Belief in conventional rules | -.09 | 3.44 | 1.05 | 3.38 | 1.78 | 3.16 | .16 | 3.95 |
| Mean grade average | 2.56 | .18 | 2.69 | .15 | 2.82 | .13 | 2.62 | .16 |
| Importance of what other students think | 2.27 | .14 | 2.36 | .14 | 2.25 | .11 | 2.22 | .11 |
| Total N for each cluster | 76 | | 57 | | 37 | | 28 | |
| Minimum N for each cluster | 65 | | 43 | | 28 | | 23 | |

(con't)

Table 5 (con't)

Means and Standard Deviations for Senior High School Clusters

| School Characteristic | Clusters 5 M | 5 SD | 6 M | 6 SD | 7 M | 7 SD | 8 M | 8 SD |
|---|---|---|---|---|---|---|---|---|
| Ecological | | | | | | | | |
| Rural (vs. urban) location | 3.86 | .35 | 1.50 | .76 | 3.29 | .73 | 1.08 | .28 |
| Poverty and unemployment | -.50 | .48 | .41 | .76 | -.13 | .36 | 2.19 | 1.51 |
| Affluence and education | -1.13 | .87 | .21 | .87 | -.68 | .88 | .00 | .73 |
| Community crime | -1.84 | 1.12 | 2.37 | 1.64 | -.76 | 2.03 | 2.76 | 1.90 |
| Extensiveness of security measures | -.36 | 1.42 | 13.10 | 6.10 | 1.48 | 5.22 | 13.56 | 5.25 |
| Characteristics of the inhabitants | | | | | | | | |
| Teachers: Percentage white | 93.81 | 10.10 | 78.19 | 16.70 | 93.01 | 7.30 | 68.39 | 19.18 |
| Average educational level | 3.20 | .40 | 3.89 | .44 | 2.44 | .69 | 3.59 | .44 |
| Percentage mostly teaching trade or ind. arts | 4.68 | 5.19 | 10.26 | 12.94 | 57.19 | 33.67 | 12.32 | 16.74 |
| Students: Social disadvantage | -2.17 | 3.13 | 7.24 | 4.20 | 1.37 | 3.46 | 12.17 | 3.44 |
| Parental education and self-reported ability | -1.18 | 1.90 | -.67 | 1.96 | -3.56 | 1.76 | -3.02 | 1.79 |
| Employed part-time or full-time (%) | -1.66 | .09 | -1.72 | .11 | -1.60 | .12 | -1.75 | .10 |
| Ever repeat a year in school (%) | -1.88 | .05 | -1.84 | .08 | -1.82 | .07 | -1.70 | .08 |
| Organizational | | | | | | | | |
| Teaching resources | 3.02 | .41 | 2.55 | .32 | 3.28 | .54 | 2.43 | .40 |
| School total enrollment | 537.91 | 322.80 | 1976.15 | 777.88 | 601.93 | 340.65 | 1689.38 | 814.95 |
| Psychosocial | | | | | | | | |
| Teacher and principal reports of sanctioning practices: | | | | | | | | |
| Ambiguous sanctions | 3.56 | .51 | 4.42 | .66 | 3.78 | .54 | 4.38 | .62 |
| Teacher reports: | | | | | | | | |
| Teacher-administration cooperation | 10.01 | .64 | 8.76 | .77 | 10.33 | 1.17 | 8.55 | .63 |
| Percentage mostly emphasizing control in class | .66 | 2.30 | 2.78 | 2.94 | 1.25 | 2.75 | 2.01 | 1.59 |
| Teachers overall rating of principal | 15.27 | 1.26 | 13.34 | 1.50 | 15.02 | 1.45 | 12.96 | 1.72 |
| Student reports: | | | | | | | | |
| Firm and clear enforcement | 5.26 | .81 | 4.13 | .53 | 5.03 | .94 | 4.37 | .71 |
| Good race relations | 7.41 | .34 | 6.84 | .48 | 7.32 | .23 | 6.80 | .30 |
| College vs. job orientation | -3.14 | 3.72 | 1.60 | 3.44 | -11.88 | 6.91 | .73 | 5.40 |
| Delinquent youth culture | -6.08 | 5.30 | 1.08 | 5.00 | -1.20 | 6.18 | -.83 | 4.94 |
| Belief in conventional rules | .65 | 4.19 | -1.85 | 3.34 | -1.23 | 5.00 | -4.64 | 3.42 |
| Mean grade average | 2.64 | .19 | 2.56 | .24 | 2.64 | .21 | 2.37 | .24 |
| Importance of what other students think | 2.40 | .09 | 1.94 | .17 | 2.23 | .16 | 1.82 | .18 |
| Total N for each cluster | 22 | | 20 | | 14 | | 13 | |
| Minimum N for each cluster | 17 | | 15 | | 11 | | 10 | |

(con't)

Table 5 (con't)

Means and Standard Deviations for Senior High School Clusters

| School Characteristic | Clusters 9 M | 9 SD | 10 M | 10 SD | 11 M | 11 SD | 12 M | 12 SD |
|---|---|---|---|---|---|---|---|---|
| Ecological | | | | | | | | |
| Rural (vs. urban) location | 1.08 | .29 | 1.90 | .74 | 1.50 | 1.00 | 3.00 | 1.00 |
| Poverty and unemployment | .35 | 1.90 | 1.36 | 2.38 | 1.42 | 1.21 | 1.00 | 1.31 |
| Affluence and education | .66 | .57 | .18 | 1.06 | -.07 | .58 | -.51 | 1.01 |
| Community crime | .85 | 2.36 | 1.67 | 1.96 | 6.19 | 2.75 | 1.18 | 3.09 |
| Extensiveness of security measures | 11.67 | 4.81 | 5.39 | 5.02 | 15.25 | 8.29 | 4.97 | 6.48 |
| Characteristics of the inhabitants | | | | | | | | |
| Teachers: Percentage white | 84.88 | 16.12 | 67.02 | 24.82 | 75.00 | 25.22 | 62.65 | 23.00 |
| Average educational level | 4.27 | .48 | 3.49 | .40 | 4.41 | .42 | 3.12 | .38 |
| Percentage mostly teaching trade or ind. arts | 7.61 | 4.67 | 15.38 | 15.35 | 3.79 | 2.01 | 13.64 | 8.71 |
| Students: Social disadvantage | -.61 | 3.14 | 6.04 | 5.27 | 9.60 | 6.53 | 7.89 | 1.23 |
| Parental education and self-reported ability | 1.56 | 3.00 | -1.87 | 1.36 | -2.57 | 2.18 | -4.72 | .60 |
| Employed part-time or full-time (%) | -1.65 | .12 | -1.74 | .12 | -1.76 | .06 | -1.74 | .08 |
| Ever repeat a year in school (%) | -1.90 | .05 | -1.73 | .10 | -1.76 | .07 | -1.69 | .06 |
| Organizational | | | | | | | | |
| Teaching resources | 2.90 | .33 | 2.82 | .26 | 2.36 | .04 | 3.05 | .24 |
| School total enrollment | 2352.58 | 950.92 | 1249.80 | 694.96 | 3741.00 | 1375.60 | 429.00 | 293.70 |
| Psychosocial | | | | | | | | |
| Teacher and principal reports of sanctioning practices: | | | | | | | | |
| Ambiguous sanctions | 4.03 | .80 | 4.41 | .76 | 4.69 | .53 | 4.10 | .56 |
| Teacher reports: | | | | | | | | |
| Teacher-administration cooperation | 8.94 | .61 | 9.16 | .93 | 8.17 | .30 | 9.93 | 1.36 |
| Percentage mostly emphasizing control in class | 1.13 | 1.30 | 2.47 | 2.55 | 3.11 | 2.58 | .00 | .00 |
| Teachers overall rating of principal | 13.57 | 1.36 | 14.22 | 1.82 | 11.60 | 2.77 | 15.08 | .48 |
| Student reports: | | | | | | | | |
| Firm and clear enforcement | 4.25 | .95 | 5.09 | .77 | 3.78 | .64 | 5.14 | .99 |
| Good race relations | 7.14 | .40 | 6.74 | .51 | 6.82 | .10 | 7.29 | .44 |
| College vs. job orientation | 6.00 | 9.98 | -.44 | 3.77 | 3.12 | 2.93 | -6.25 | 8.26 |
| Delinquent youth culture | 4.78 | 3.83 | -2.55 | 5.21 | .83 | 5.36 | -1.47 | 15.06 |
| Belief in conventional rules | 1.00 | 5.82 | -3.28 | 4.33 | -3.05 | 3.02 | -7.85 | 7.98 |
| Mean grade average | 2.57 | .20 | 2.35 | .19 | 2.62 | .30 | 2.41 | .47 |
| Importance of what other students think | 2.11 | .19 | 1.95 | .22 | 1.87 | .11 | 1.93 | .14 |
| Total N for each cluster | 12 | | 10 | | 4 | | 3 | |
| Minimum N for each cluster | 6 | | 8 | | 3 | | 2 | |

(con't)

Table 5 (con't)

Means and Standard Deviations for Senior High School Clusters

| School Characteristic | Clusters 13 M | 13 SD | 14 M | 14 SD |
|---|---|---|---|---|
| Ecological | | | | |
| Rural (vs. urban) location | 2.00 | 1.41 | 4.00 | .00 |
| Poverty and unemployment | -.60 | .06 | -.02 | .39 |
| Affluence and education | 1.12 | .16 | -1.74 | .01 |
| Community crime | -2.73 | .70 | -4.19 | .09 |
| Extensiveness of security measures | 3.20 | 1.40 | -.27 | 1.77 |
| Characteristics of the inhabitants | | | | |
| Teachers: Percentage white | 98.86 | 1.61 | 100.00 | .00 |
| Average educational level | 4.27 | .48 | 2.90 | .74 |
| Percentage mostly teaching trade or ind. arts | 7.14 | 10.10 | 36.51 | 11.22 |
| Students: Social disadvantage | -5.82 | 1.18 | -.95 | 7.61 |
| Parental education and self-reported ability | 6.57 | .82 | -5.05 | .55 |
| Employed part-time or full-time (%) | -1.57 | .01 | -1.69 | .05 |
| Ever repeat a year in school (%) | -1.98 | .00 | -1.82 | .17 |
| Organizational | | | | |
| Teaching resources | 3.13 | .10 | 3.43 | .81 |
| School total enrollment | 1178.50 | 598.92 | 211.50 | 115.26 |
| Psychosocial | | | | |
| Teacher and principal reports of sanctioning practices: | | | | |
| Ambiguous sanctions | 3.58 | .13 | 3.14 | .07 |
| Teacher reports: | | | | |
| Teacher-administration cooperation | 10.12 | .32 | 11.40 | 1.98 |
| Percentage mostly emphasizing control in class | 1.14 | 1.61 | .00 | .00 |
| Teachers overall rating of principal | 16.75 | .60 | 19.33 | .47 |
| Student reports: | | | | |
| Firm and clear enforcement | 3.13 | .67 | 5.22 | .86 |
| Good race relations | 7.57 | .75 | 7.54 | .62 |
| College vs. job orientation | 11.50 | 3.02 | -15.14 | 1.03 |
| Delinquent youth culture | 4.36 | 1.06 | -4.60 | 6.15 |
| Belief in conventional rules | 3.35 | 3.71 | 3.72 | .71 |
| Mean grade average | 3.12 | .02 | 2.81 | .19 |
| Importance of what other students think | 2.38 | .00 | 2.32 | .26 |
| Total N for each cluster | 2 | | 2 | |
| Minimum N for each cluster | 2 | | 2 | |

Table 6

Levels of Teacher and Student Victimization
in Clusters of Junior and Senior High Schools

| | Junior High | | | | | | Senior High | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Teacher | | | Student | | | Teacher | | | Student | | |
| Cluster | M | SD | N | M | SD | N | M | SD | N | M | SD | N |
| 1 | -2.44 | 2.02 | 88 | -0.11 | 3.24 | 88 | -1.31 | 3.70 | 76 | 0.22 | 2.99 | 76 |
| 2 | -0.98 | 2.97 | 56 | -0.48 | 3.02 | 56 | -1.75 | 2.12 | 57 | 0.18 | 3.26 | 57 |
| 3 | 1.83 | 3.39 | 35 | 1.18 | 3.21 | 35 | -0.90 | 2.28 | 37 | -1.01 | 2.50 | 37 |
| 4 | -2.52 | 2.42 | 27 | -1.56 | 3.13 | 27 | 0.19 | 2.75 | 28 | -0.35 | 2.81 | 28 |
| 5 | 0.81 | 3.66 | 23 | 1.79 | 4.19 | 23 | -2.92 | 2.08 | 22 | -0.25 | 3.21 | 22 |
| 6 | 8.20 | 4.74 | 22 | -0.69 | 3.64 | 22 | 5.80 | 4.26 | 20 | 0.55 | 4.13 | 20 |
| 7 | -2.64 | 2.03 | 18 | -0.41 | 3.38 | 18 | -3.66 | 2.25 | 14 | -1.03 | 2.76 | 14 |
| 8 | 6.55 | 4.32 | 10 | 0.88 | 4.78 | 10 | 8.74 | 5.42 | 13 | 2.45 | 5.54 | 13 |
| 9 | -3.11 | 1.02 | 7 | -1.46 | 2.55 | 7 | 0.82 | 2.86 | 12 | 0.42 | 2.70 | 12 |
| 10 | -3.62 | 0.95 | 4 | -2.39 | 2.85 | 4 | 3.20 | 5.27 | 10 | 1.03 | 3.63 | 10 |
| 11 | 7.97 | 5.51 | 4 | 1.04 | 6.14 | 4 | 8.50 | 5.16 | 4 | 2.80 | 8.14 | 4 |
| 12 | 0.16 | 0.82 | 3 | -0.18 | 4.60 | 3 | 3.03 | 6.72 | 3 | -2.87 | 2.33 | 3 |
| 13 | 7.92 | 3.88 | 3 | 2.39 | 10.02 | 3 | -4.61 | 0.32 | 2 | -2.74 | 1.33 | 2 |
| 14 | a | a | a | a | a | a | -6.16 | 0.52 | 2 | -2.03 | 2.02 | 2 |
| All schools | -0.07 | 4.55 | 301 | -0.02 | 3.63 | 301 | -0.16 | 4.45 | 304 | 0.02 | 3.36 | 303 |

Note. Figures for all schools include those schools which did not join any cluster. The student and teacher victimization measures are equally weighted composites of five and seven items, respectively, developed by Gottfredson and Daiger (1979). Overall means are near zero because each element of these composites was standardized (with respect to its mean and standard deviation) separately for junior and senior high schools. N's do not total 642 schools due to non-participation of some schools in parts of the study.

[a]There are only thirteen clusters for junior high schools.

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## Appendix A

### Descriptions of the Measures

The following four categories of school climate variables represent four of the six strategies for conceptualizing environments provided by Moos (1973) and Insel and Moos (1974). There were no good representative variables for two of the climate dimensions (the study of behavior settings and the study of reinforcement properties); therefore they were not included in this study. Variables marked by an asterisk are scales developed by Gottfredson and Daiger (1979) and readers may consult their report for a fuller description.

A. Ecological Characteristics.

1. Rural (vs. urban) location. This information was obtained by treating information about a community's situation in the Safe School Study's sample design as data and was coded from 1 = SMSA central city with population of 500,000 or more, to 4 = non-SMSA counties or county groups.

2. Poverty and unemployment. This is defined by a high proportion of families headed by females in the community, high rates of divorce or separation, high unemployment, and relatively many families on welfare.*

3. Affluence and education. This is defined by communities with high income and education, little poverty and relatively many professional and managerial workers.*

4. Community crime. Consists of principal, teacher, and student reports regarding crime in the community.*

5. Extensiveness of security measures. This scale is composed of items describing the security measures taken by the school. For example, does the school have security devices such as electronic intrusion detection systems or an automatic link with police; does the school have deadbolt locks on the outside doors, alarms or security screens, etc.*

6. Proportion of "open" classrooms. The proportion of the number of open space classrooms in the school to the total number of classrooms in the school.

7. Age of school building.

8. Condition of school building.

9. Does the school have a cafeteria?

10. Does the school have a gymnasium?

11. Does the school have a parking lot?

12. Does the school have an athletic field?

B. Characteristics of the Inhabitants

Teachers:

1. Percentage white.

2. Average educational level. Teachers were asked to indicate the highest level of education they attained, 1 (some college or less) to 6 (doctoral degree).

3. Percentage mostly teaching trade or industrial arts.

4. Average years of teaching experience.

5. Hours spent helping students outside of class.

Students:

6. Social disadvantage. Students in a school scoring high on this scale are often black children of persons on welfare; high proportions reside in homes with the father absent, are rated as low in ability, and are reading below grade level.*

7. Parental education and self-reported ability. In a high scoring school on this scale, students report that their parents are highly educated and discuss school work with them, and students rate their own ability as high.*

8. Percentage employed part-time or full-time.

9. Percentage ever repeating a year in school.

10. Average grade level.

11. Percent female.

12. Number of dropouts.

13. Percent participating in athletics.

14. Percent participating in band, orchestra or chorus.

15. Percent participating in school clubs.

16. Percent participating in student government.

C. Organizational Characteristics

1. Teaching resources. A scale composed of reports about the extent to which the school supplies teachers with the materials and equipment they need for teaching.*

2. School total enrollment.

3. Desegregation. Principal reports of whether the school is under a court order to desegregate, if the school is part of any other local desegregation program, the number of students bussed in for racial balance divided by the total number of students currently enrolled, and a measure of racial balance.*

4. Average number of different students taught.

5. Average class size.

6. Student-parent influence. A high score means that teachers tend to report that both students and parents have a say about how the school is run.*

7. Principal report of parent involvement.

8. Principal report of PTA involvement.

9. School has parent advisory committee.

10. Ratio of administrative and special staff to teachers.

D. Psychosocial Characteristics

Teacher and principal reports of sanctioning practices:

1. Ambiguous sanctions. In high-scoring schools on this scale, teachers typically report that they lower students' grades as a response to misconduct and that they ignore misbehavior.*

2. Clear sanctions. In schools with high scores on this scale, both principal and teachers typically report that they lower students' grades as a response to misconduct and that they ignore misbehavior.*

Teacher reports:

3. Teacher-administration cooperation. In schools that score high on this scale, teachers typically report that all students are treated equally, they get help from counselors, teachers and administrators get along well, and teachers are kept informed about problem students by the school's administration.*

4. Policy confusion. In schools that score high on this scale, a large proportion of teachers replied that they could not say how policies relating to grading practices, controlling classroom disorder, dealing with problem students, or communicating with parents are set.*

5. Teacher culture. In high scoring schools on this scale, teachers report that they learn about problem students from other teachers and have little personal discussion with students.*

6. Teacher democratic approach. In schools that score high on this scale, teachers tend to say that students and parents should have a say in the running of the school.*

7. Teacher punitive approach. In high scoring schools on this scale, teachers typically say that some pupils are "just young hoodlums" who should be treated accordingly, and recommend severe punishments and summary suspensions.*

8. Teachers give individual assignments. Teachers give different students in the same class continuing assignments at different levels.

9. Grades important for class assignment. In the teacher's opinion, how important is a student's grade in determining if the student can take your course.

10. Teachers emphasize college preparation.

11. Teachers emphasize control in class.

12. Principal emphasizes basic skills.

13. Teachers overall rating of principal. Teachers combined rating of the principal as friendly, fair, permissive, informal and whether the principal shares decision-making.

Teachers, not administration, set policy re:

14. Passing/failing.

15. Controlling classroom disorder.

16. Dealing with serious behavior problems.

17. Discussing matters with parents.

Student reports:

18. Firm and clear rule enforcement. In a high-scoring school, students typically report that the school rules are strictly enforced, if a rule is broken they know what punishment will follow; students need permission to do anything around the school; students are paddled for serious rule breaking; and the principal is firm, tough, and strict.*

19. Good race relations. A high-scoring school is one in which students tend to report that people of different races or nationalities get along well and that minorities are treated fairly in the schools.*

20. College vs. job orientation. In high-scoring schools students tend to plan and expect to go to college, and in low scoring schools students tend to plan and expect to get a job after high school.*

21. Delinquent youth culture. In schools that score high on this scale, students as a group agree that if students use drugs at school it is their own business; alcohol, marijuana, heroin or stolen goods are easy to get at school; they would do nothing if they had information about an incident of vandalism, and would not tell a principal or a teacher; they would play hooky or cheat on a test if they could get away with it.*

22. Belief in conventional rules. This scale characterizes schools in which many students reject the ideas that if people leave things around they deserve to have them taken, taking things from stores doesn't hurt anyone, people who get beat up usually asked for it, and if one wants to get ahead one cannot always be honest. In a high-scoring school, students report that they would not spray paint on walls or take money from others if they could get away with it.*

23. Mean grade average. Ranges from low (mostly E's or F's) = 1, to high (mostly A's) = 5.

24. Importance of what other students think.

25. Perceived fairness and clarity of rules. High-scoring schools are characterized by students as a group reporting that the rules, teachers, and principal are fair; they know what the school's rules are; punishments for rulebreaking are the same for everyone; and students are not treated like children.*

Student reports (con't.)

26. Student influence. In a high-scoring school, students typically report that they have a say in how the school is run, they help to decide how courses are taught, they have a say in making the school's rules, and if the school does something wrong and a group of students complain, they can get a fair deal.*

27. School attachment. In schools with high scores on this scale, students typically report that they like their school and their classes; their classes are interesting, not boring, and worth taking; the school is helping them to prepare for what they want to do after school; grades and their teachers' regard for them are important; and their school is better than other schools in the area.*

28. Average student internal control. This scale is a composite of three items in the student questionnaire which were designed to measure this dimension.*

29. Average number of close friends.

30. Students know each other's grades. In general, how often do teachers let everyone know who gets high and low grades.

Appendix B

Some Illustrative Schools

The following verbal descriptions of selected junior high schools may help some readers visualize the cluster analysis results. These verbal portraits were constructed by printing the record for the first junior high school on the data tape which fell into each of the three clusters illustrated. Then numerical scores were interpreted by describing the school's relative standing on several variables. This was done by comparing numerical scores to cumulative frequency distributions or means and standard deviations for junior high schools.

Cluster number 1 - the average school. This cluster is a little below the average school on the first major dimension and about average on the second. It contains 28% of the schools in the sample of junior high schools. The following is a description of the first school in the file in this cluster: This school is located in a city of fewer than 500,000 people located near a major metropolis. The area is somewhat more affluent than most (about half a standard deviation below average on our scale measuring community poverty and unemployment) and barely above average in terms of the educational standing of the community (about one-ninth of a standard deviation above average on our scale measuring community affluence and education). In terms of our measure of studentry social and educational disadvantage, it is again about average, at the 51st percentile for all junior high schools. However, students tend to rate themselves as high in ability and report that their own parents are relatively highly educated (the school is almost a standard deviation above average on our scale mea-

suring parental education and self-reported ability). Students on the average receive fairly low grades; the average GPA is 2.6, at the 32nd percentile for junior high schools. The school's total enrollment is in the high 800's, at about the 57th percentile for junior high schools in terms of size. The average class size is 34 students, 89 percent of teachers are white, and the average teacher has a master's degree and has taught full-time for 10.5 years. The school's main building is more than ten years old and the school buildings are in average condition. Last year, 23 students dropped out, and about 14 percent of students have at some time repeated a year in school due to failure (about the 57th percentile for junior high schools). The average teacher reports that the school supplies the materials and equipment needed to teach "a little" or "fairly well" (about the 23rd percentile). The principal reports that there is no parent advisory committee and that a parent-teacher organization has no involvement in school affairs. The level of school attachment among the students is about average: students' belief in conventional social rules is somewhat below average for junior high schools, and their reports of the fairness and clarity of rule enforcement is about average for junior high schools.

Cluster number 6 - low school attachment. This cluster is composed of schools that are high on the first major dimension and fairly low in the second. It contains about seven percent of the schools in the sample of junior high schools. The following is the first sample school falling in this cluster: It is located in a city of fewer than 500,000 people located near a major metropolis. The area the school serves is character-

ized by high levels of poverty and unemployment (about one and a third standard deviation above the mean on this community scale), but very near average in terms of the educational standing of the community. Student social and educational disadvantage is extremely high (about the 91st percentile) according to our measure, implying a large minority population of students, many of whom have unemployed parents or are from families on welfare. Students' ratings of their own ability and reports of their parental education are near the mean for all junior high schools, however. Students tend to receive somewhat higher grades here than in the average school; the average GPA is 2.8, at about the 65th percentile for junior high schools. The school's total enrollment is in the mid 1100's, at about the 82nd percentile for junior high schools in terms of size (which ranges in the sample as a whole from 84 to 2345 students). The average class size is 35 students, 58 percent of teachers are white, and the average teacher has some graduate school but not enough for a master's degree and has taught full time for 12.6 years. The school's main building is over 10 years old and the buildings are in average condition. According to the principal no students dropped out of school least year, and 9 percent of students report ever having repeated a year in school due to failure (about the 37th percentile for junior high schools). The average teacher reports that the school supplies the materials and equipment needed to teach "a little" or "fairly well" (about the 19th percentile). The school has a parent advisory committee, and the principal reports that a parent-teacher organization has little involvement in school affairs. The level of school attachment among the students is very low (about one and two-thirds

standard deviations below the mean); students' belief in conventional social rules is below average (more than a third of a standard deviation), and their reports of the fairness and clarity of rule enforcement is far below average (about one and three-quarters standard deviation for junior high schools).

Cluster 4 - the smooth running rural school. This cluster is below average on both the first and the second major factors. It contains about eight percent of the schools in the sample of junior high schools. The first school in the file falling in this cluster may be described as follows: It is located in a county outside any major metropolitan area. The area is near average affluence, although the population of the area is relatively uneducated. In terms of our measure of social and educational disadvantage of the studentry, it is about average, at the 52nd percentile for junior high schools. Students rate themselves as below average in ability and report that their parents are not highly educated (about two-thirds standard deviation below average on our measure of parental education and self-reported ability). Students on the average receive slightly higher grades here than in the average school; the average GPA is just lower than 2.8, at about the 61st percentile for junior high schools. The school's total enrollment is almost 600, at about the 20th percentile for junior high schools in terms of size. The average class size is 32 students, all the teachers are white, and the average teacher has had some graduate courses, but does not have a master's degree and has taught full-time for 7.4 years. The school's main building is more than ten years old and the school buildings are in better than

average condition. Last year no students are reported to have dropped out, and about ten percent of students have at some time repeated a year in school due to failure (about the 40th percentile). The average teacher reports that the school supplies the materials and equipment needed to teach "fairly well" or "very well" (about the 86th percentile). The principal reports that there is no parent advisory committee and that the parent-teacher organization has little involvement in school affairs. The level of school attachment among the students is high (almost two-thirds standard deviation above the mean); students' belief in conventional social rules is very slightly above average, and their reports of the fairness and clarity of rule enforcement is well above average (about one standard deviation).

It would be inappropriate to make too much of these illustrative portraits of individual schools because there is substantial variation on most characteristics mentioned in the illustrations within clusters. Nevertheless, these portraits provide some concrete examples. Schools better typifying each cluster would be imaginary schools with values on each school measure equal to the means in Table 4. These illustrations demonstrate how any one school may deviate in noticeable ways from such a "typical" school for a given cluster.

END