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ABSTRACT

In investigating educational goals, academic performance, academic self-esteem, and educational attainment, researchers should realize the importance of the school environment as well as individual student characteristics. To evaluate the significance of school effects, a project was undertaken to ascertain why students in high status schools were more likely to aspire to go to college than were similar students in schools drawing from lower status populations. Specifically, three perspectives were tested: school climate, characteristics of peer associates, and proportions enrolled in various curricula. Data were drawn from standardized test scores, student records, and a survey of students, teachers, and principals of 20 public, coeducational high schools in 1964 and 1965. A statistical analysis was performed on 39 variables including student body ability composition, sex composition, status composition, and academic value climate; and individual student social background, academic variables, subjective orientation to school, and peer characteristics. Findings indicated that school variability in status composition was significantly relative to most other school differences. The conclusion is that because survey methodology current in school effects literature is not sufficiently refined to produce verifiable results, researchers should not jump to prematurely drawn firm conclusions regarding educational goals. (DB)

Status Composition and Educational Goals: An Attempt At Clarification

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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 three programs to achieve its objectives. The Policy 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 the Teams-Games-Tournament (TGT) instructional process 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.

This report, prepared by the School Organization Program, examines alternative formulations of the processes through which the status composition of the student body affects student aspirations to attend college.

STATUS COMPOSITION AND EDUCATIONAL GOALS: AN ATTEMPT AT CLARIFICATION

The importance of educational resources and student body characteristics for a variety of cognitive and non-cognitive outcomes of schooling has long been a prominent topic in research on school productivity. The social-psychological literature on reference groups and on their importance in the acquisition of values and goal-orientations in particular has drawn attention to collective characteristics of the student body as distinguishing between types of educational environments (Bidwell, 1972; Haller and Woelfel, 1972; Woelfel and Haller, 1971).

The substantial research literature now available suggests that this emphasis on the student body is well-founded. Some twenty years ago it was demonstrated that youth attending schools with a disproportionate enrollment of high status students were more likely to intend to go to college than would otherwise be expected of them on the basis of their own status origins and academic performance (Wilson, 1959). That students attending such schools are in fact advantaged in this regard, as well as in numerous other respects relevant to their educational prospects, also has been demonstrated in a wealth of more recent research (Alexander and Eckland, 1975; Alwin and Otto, 1977; Bain and Anderson, 1974; Boyle, 1966; Hauser, Sewell and Alwin, 1976; Meyer, 1970; Nelson, 1972). The status attributes of the student body thus appear relevant not only to educational goals, but as well to academic self-esteem, academic performance and eventual level of educational attainment. Although additional dimensions of student body background also have been found significant, especially ability levels, and the absolute importance of status composition for all educational outcomes invariably has been quite

modest, the accumulated evidence for the relevance of status composition to school productivity processes is most impressive.

This is not to suggest that the implications of this evidence are self-evident or well-understood. While the methodology characteristic of research on student body composition has been subject to some criticism (Hauser, 1970; 1971), a more serious deficiency of this literature is its failure consistently to specify and evaluate the mechanisms by which status distinctions among schools actually are thought to limit or enhance school outcomes. Early research either neglected a conceptual accounting of its findings or, when such concerns were attended to, typically assumed that status distinctions were not significant in their own right, but merely served as proxies for the operationally more elusive concept of normative climate. That is, schools, as educational environments, were thought to vary in the extent to which intellectual and academic pursuits were highly valued in their local cultures, cultures which students, in turn, were thought to internalize.

As plausible as such arguments might be, they can hardly be adequately evaluated through studies of student status attributes. Fortunately, however, the program of research carried on by McDill and his colleagues has undertaken to measure schools' normative environments directly. As a result of their efforts (McDill, Meyers and Rigsby, 1967; McDill and Rigsby, 1973; McDill, Rigsby and Meyers, 1969), it does appear that more academically oriented normative climates somewhat enhance students' performance and college plans and that, when these aspects of the normative climate are controlled, student status composition is virtually unrelated to such outcomes.

These results do suggest that the value climate of the school may be more immediately relevant to school productivity than the level of its students'

status background. However, the normative explanation is not the only one that has been advanced to account for the seeming importance of status composition. The most prominent alternative to the value climate framework develops the implications of the school's status context for the quality and character of peer networks that are likely to emerge in different settings. Specifically, in high status, rather than low status, schools students are more likely to establish friendships with high status classmates. Through well-documented processes of interpersonal influence (Duncan, Haller and Portes, 1968; Haller and Butterworth, 1960; Herriott, 1963; Kandel and Lesser, 1969; Sewell, Haller and Ohlendorf, 1970; Simpson, 1962), the enhanced likelihood in high status schools of entering into close relationships with high status students is thought to yield numerous educational benefits. For example, as both comparative reference groups (i.e., Kelley, 1952) and "definers" (i.e., normative reference groups serving as sources of immediate interpersonal influence [Woelfel and Haller, 1971]), high status youth, through the higher educational goals they typically hold, should serve to raise the average level of aspirations in such settings, even after taking into account the importance of individuals' own status backgrounds for their plans. This perspective, first pursued by Campbell and Alexander in school effects research (1965), and subsequently supported in a number of inquiries (Alexander and Eckland, 1975; Alwin and Otto, 1977; Hauser, Sewell and Alwin, 1976), thus posits the interpersonal mediation of school status composition through networks of association.

Although there have been a few attempts to evaluate simultaneously the substantive importance of various dimensions of student body composition and alternative propositions regarding exactly how their influence is effected (Alexander and Eckland, 1975; Alwin and Otto, 1977; Hauser, Sewell and Alwin,

1976), none of these has contrasted the two perspectives on school status composition just reviewed. Moreover, although these two are the most well-developed in the literature, they hardly exhaust the reasonable possibilities that might be advanced. In particular, existing speculation regarding the basis of status composition effects in school settings, in its preference for social-psychological mechanisms of transmission, has neglected other features of school organization and program development that might themselves be responsive to the status characteristics of the school's clientele. In a related context, Kerckhoff (1976) has argued persuasively for greater attention to structural and organizational constraints in research on educational and socioeconomic attainments as a complement to the emphasis on socialization and social-psychological processes that has been dominant in this literature.

One such administrative practice which may be relevant in this regard is the school's curriculum organization. Recent research on the consequences of secondary school curriculum placement has demonstrated that enrollment in a college track provides numerous educational advantages and increases access to a broad range of academic resources (Alexander, Cook and McDill, 1978; Alexander and McDill, 1976; Heyns, 1974; Hauser, Sewell and Alwin, 1976; Rosenbaum, 1975). One consequence of track placement that may be especially relevant to our present concerns is the tendency for college preparatory enrollment to increase or crystallize students' intentions to attend college. If the proportions enrolled in various curricula should vary systematically with the school's status composition, then it may well be that the higher educational goals evidenced in high status schools are a function not of school-wide normative climates or interpersonal relations in such settings but of the greater likelihood therein of enrolling in a college-bound track. Is there, though, reason to

expect a school's distribution of students across curricula to be responsive to the school's status composition? If not, there is a critical link missing in the line of argument just offered. We think differential enrollment does occur, however, and offer our reasoning next.

In a provocative essay some years ago, James Conant (1961) argued that the school systems in high status communities, in response to community preferences and pressures, should be especially oriented toward the college preparation and placement of their charges. In pursuit of this mission, their administrative policies and use of prevailing educational technology should be directed toward the early identification of those students deemed suited for college and to the nurturing of their prospects for such to the fullest extent possible.

Parsons, in turn, in his seminal statement on the social system of the classroom (1959), has correctly observed that the primary administrative mechanism for affecting such selection and allocation is curriculum streaming. Such being the case, college preparatory enrollment should be at a maximum in high status schools, and if tracking is in fact an effective device for achieving its intended objectives, students so enrolled should reap its attendant academic benefits, including enhanced academic ambition.

We thus recognize yet a third possibility for why it is that students in high status schools are more likely to aspire to go to college than their similarly able and socioeconomically situated counterparts in schools drawing from lower status populations. The present project attempts to identify which of these three perspectives is most plausible by including measures of 1) school climate, 2) characteristics of peer associates, and 3) the proportions enrolled in various curricula <u>in a school level</u> analysis of the relationships

between student status composition and a variety of educational outcomes, including educational goals. Simultaneous consideration of both the intrinsic importance of these factors and of their significance in mediating or accounting for the dependency of educational goals on school status levels should clarify the relevance of status composition for such goals. The conceptual framework evaluated in our analysis is presented schematically in Figure 1.

Figure 1 about here

The model includes four school-level exogenous variables: ability composition, sex composition, status composition and academic value climate. The first three are aggregated from the characteristics of the individual students attending the various schools in our sample. According to the framework developed above, the relative importance of status composition and value climate and their differential consequences for intervening variables and the model's ultimate outcomes should be of particular interest. As intervening variables, we consider the percentage of students enrolled in a college preparatory track and a variety of aggregated characteristics of those students in the school who are identified by our sample respondents as their close friends. These include the average ability levels, status origins, and educational goals of peer associates. The first two of these differ from their counterpart exogenous measures in that they are computed only for named friends. Thus, some students are omitted entirely from these calculations and others are included numerous times, once for each time they are named by some other respondent. The intent here is to characterize the academic "quality" of friendship patterns in school settings. Certainly these should be dictated to a considerable extent by the kinds of students in

attendance, but attendance patterns and the character of peer relations are conceptually distinct, and they may be so empirically as well. Finally, as outcome variables we examine the average level of educational expectations, the mean math achievement and the level of intellectual orientation characteristic of the student bodies of our various schools. Again, although the model considers multiple outcomes, our conceptualization focuses primarily on the school-level determinants of educational goals in an attempt to reconcile the alternative interpretations of status composition effects reviewed above.

We believe this framework accurately summarizes much of the available conjecture regarding the importance of school status composition for educational attainment. It was hoped that formalization and assessment of these diverse propositions would clarify the bases for the status composition influences demonstrated time and again in the school effects literature. As will be observed shortly, however, our attempt to organize and evaluate extant themes seems to suggest more about the difficulty in comparing theories than it does about the reality those theories supposedly address. We shall return to this matter in some detail later in reviewing our results.

As mentioned earlier, schools will be the unit of analysis in estimating the model portrayed in Figure 1. The propositions regarding status composition effects, although not always recognized as such, actually pertain exclusively to differences between schools, and school-level data, therefore, are most pertinent to their assessment. Hauser (1971) and Alwin (1976) thoroughly review the rationale and procedures for evaluating school effects propositions on the between-school variance in a data matrix.

Although the school-level analysis just discussed is our major interest in this report, we also will report the within-school relations relevant to this framework. Each school-level variable in Figure 1, with the exception of school climate, has a within-school, individual-level counterpart; it is of some general interest to consider how corresponding school-level and individual-level relations differ from one another. Are, for example, the mechanisms by which school status composition affects goal levels similar in magnitude to those relating individuals' status origins to their own aspirations? Such questions can be addressed through estimating the within-school analogue of the between-school framework depicted in Figure 1. Again, the distinction between "within" and "between" school processes and the procedures for their separate assessment are reviewed in several sources (Alwin, 1976; Hauser, 1971).

METHOD

Sample

Our data are drawn from a survey conducted in twenty public, coeducational high schools in 1964 and 1965 (McDill and Rigsby, 1973). The schools were selected in a purposive manner to maximize variation on educational and social climates, demographic and social characteristics, region of the country, and educational outcomes such as college plans and educational and occupational aspirations. Detailed information on the selection of the sample and its characteristics is presented in McDill and Rigsby (1973).

Several types of data were collected in the survey: self-administered questionnaires from the students, teachers and principals of each school; information from student records such as grade-point averages in English, academic rank (available for seniors only) and absences; and scores on two standardized academic tests, one measuring aptitude for abstract reasoning

(AR) and the second measuring achievement in mathematics (MATH).

The sample for the present analysis consists of seniors for whom all relevant data were available from the eighteen schools which had a twelfth grade.

Variable Measures

1. Social Background Variables

A. Father's Education: seven pre-coded response categories, ranging from "some grade school" to "attended graduate school or professional school after college," were provided for a single item in the student questionnaire.

B. Mother's Education: this measure is identical to that for father's education.

C. Number of Books in the Home: respondents were asked to estimate the number of volumes in their homes, with five response options ranging from 25 or fewer to more than 500.

D. Father's Occupational Status: an item in the student questionnaire relating to father's current occupation contained 17 response categories. These were collapsed to the following eight occupational categories, which correspond to the conventional census classification of occupational status developed by Edwards (1943): unskilled, semi-skilled, skilled, clerical or sales, proprietor, managers or officials, technical, and professional.

Preliminary analysis revealed that at the school-level these measures of student-body status characteristics were too highly correlated to permit their separate use (all zero-order correlations among the four were above .90). Consequently, we decided to compute a status composition index as the sum of the four indicators. To maximize comparability, a similar scale is employed in the individual-level analysis as well.

E. Sex is employed in the analysis as a dummy variable, with boys coded 1 and girls 0.

2. Academic Variables

A. Academic Aptitude: aptitude was measured with a fifteen-item, multiple choice test designed to measure the ability to determine inductively the logical relationships among patterns of diagrams (Dailey and Shaycoft, 1961:40-2). The reliability estimates obtained for the senior boys and girls, using the KR-20, are .634 and .654, respectively, which compare favorably with those reported in the Project Talent studies (Flanagan et al., 1964).

B. Mathematics Achievement: a twenty-four item, multiple choice test, designed by Project Talent to measure achievement in mathematics through the ninth grade level, serves as a measure of academic achievement. The reliability coefficients for senior males and females, at .890 and .866, respectively, are modestly higher than those for the national sample of students in the Project Talent research.

C. Curriculum: program of study is self-reported. "College preparatory" enrollment (coded 1) is contrasted against all other types of programs (coded 0).

3. Subjective Orientations to School and Schooling: Measures of two non-cognitive school outcomes were constructed from items in the student questionnaire.

A. Educational Plans were obtained from an item asking if the respondent intended to attend college. Four levels of plans are represented in our measure, coded from four to one; 4) yes, as a full-time student right after high school; 3) yes, but either as a part-time student or not right after high school; 2) undecided; 1) no, never.

B. Intellectual Orientations: this measure is a slightly modified version of the "intellectual-achievement" scale used by McDill and Rigsby (1973:41). The measure employed here is composed of the original six items (which tap students' academic interests and values) plus an item measuring the amount of time the student typically devoted to homework. The summated scale, which potentially ranges from 8 to 24, has an estimated reliability of .65.

4. School Climate

Thirty-nine aggregate characteristics of the schools, based on data from both student and teacher questionnaires, were factor analyzed using the principal component solution and orthogonally rotated to simple structure using the Varimax method. These 39 global characteristics or variables--all of which treat the respondent as an informant, not a respondent--are from the following sources. Twenty-three of the variables are from student questionnaires and 16 from questionnaires administered to teachers. Twenty-seven of the 39 variables are scales adapted from the College Characteristics Index (Pace and Stern, 1958) and the High School Characteristics Index (Stern, 1963). The remaining 12 variables are single-item indicators of school climate, with ten of them drawn from student questionnaires and two from those administered to teachers.

Six interpretable factors were extracted which summarize, with a relatively high degree of precision, the information contained in the 39 variables. Estimates of factor scores were computed (Cooley and Lohnes, 1962, p. 164) for the schools on each factor, permitting the results of the factor analysis to be transformed into measures of six dimensions of school climate. Only school rankings on the first factor are used in the present analysis. This

dimension of school climate is an indicator of the general support for achievement and for intellectualism in the school environment. Schools with high positive factor scores on this construct can be described as having student bodies and faculties which place a premium on academic excellence. Additional detail on the procedures for measuring school climate and the various dimensions obtained is available in McDill and Rigsby (1973).

5. Peer Characteristics

Our model includes three different types of peer group influences. These measures of "proximate" peer influences are based on sociometric data obtained directly from the friends named by the respondent. Each student was asked to name the students of the same sex in school with whom he or she associated most often. A maximum of four friends was coded for each respondent, and relevant information on these peers was extracted for the present analysis on the first of these named friends.

Measures of friend's SES, academic aptitude and educational plans are used in this analysis. All are measured as described above for the respondents themselves. Thus, we have extensive, and presumably accurate (at least more so than would be expected from respondent's reports of their friend's attributes), information on the respondent's closest peer associate.

Analysis

As mentioned earlier, we actually will be reporting results for two roughly parallel analyses, one at the school-level and the other for individual students. The school level analysis is based on the school means for each of the variables described above. Thus, this phase of the report focuses exclusively on differences between schools, with an effective case base of 18.

The individual-level analysis is conducted on a within-school data matrix that has been purged of the school-to-school differences revealed in the disparities across school means. Thus, we formally decompose the total variance in each of our variables into its between- and within-school components, and analyze each component separately. Operationally, the matrix of within-school correlations is obtained by expressing each student's score on each variable as a deviation from his/her school's mean value on that variable and then calculating covariances on those deviation scores. Use of such a strategy requires that the ANCOVA condition of homogeneity of regression be satisfied. Earlier work with these same data suggests that while the within-school slopes are not strictly homogeneous, their fluctuations are, for all practical purposes, erratic and safely ignored (Alexander and McDill, 1976). Since the school climate variable has no within-school variance, it is excluded from the individual-level analysis. All other variables described above are represented at both levels of analysis.

From these matrices of within- and between-school correlations, the parameters for the simple recursive system of equations implied in Figure 1 are readily estimated through ordinary least squares regression.

RESULTS

Since our interest focuses primarily on the between-school variance in educational inputs and outcomes, it will be instructive first to consider whether this is sufficiently large even to warrant serious consideration. The proportions of variance situated between schools in these data are reported in Table 1 for each of the variables in our substantive model. These span a considerable range, from a low of virtually zero for differences in the sex composition of schools to almost one-fourth of the variance in student

status characteristics. This pattern is quite consistent with those observed in other data sets, which similarly have found school variability in status composition to be large relative to most other school differences (Alexander and Eckland, 1974; Hauser, Sewell and Alwin, 1976; Heyns, 1974). The between school variances in the three educational outcomes under consideration--college plans, math achievement, and intellectual orientation--range from six to thirteen percent, the last pertaining to educational plans. Though these figures are modest, they nevertheless are sufficiently large that achieving a better understanding of how school organization contributes to bringing them about might have important practical, as well as theoretical value.

Table 1 About Here

Toward this end, we next review the results for the model presented earlier. It will be recalled that this framework incorporates three counterposed sets of propositions regarding how school status composition is thought to impinge upon school productivity. These three perspectives, in turn, were distilled from the theoretical and empirical literatures in which they variously had been advanced.

It was hoped that by evaluating these propositions in a common analytic framework, we might clarify precisely what it is about schools' status differences that accounts for their seeming importance for students' educational plans and for other products of the schooling process. Unfortunately, however, our results do not provide any clarification. Nevertheless, we think it instructive to consider in some detail the difficulties encountered in estimating the model developed in Figure 1. They are, we believe, of a quite general nature and likely to limit severely the degree of conceptual refinement that can be accommodated satisfactorily in school effects research based on survey data.

The matrix of between-school correlations used in estimating the regression equations implied in Figure 1 is reported in Table 2. The essence of our problem should be readily apparent upon even a cursory inspection of these data. It is the plague of non-experimental research, excessive collinearity; in this instance, we fear, a terminal case. Ordinarily, in attempting to deal with such intractable data, one might either attempt a selective weeding out of especially troublesome, but non-essential, variables; or, alternatively, combine empirically indistinguishable indicators so as to index better the underlying construct presumably common to them. Unfortunately, neither is a viable option in this instance. The collinearity is too strategically located theoretically to permit the deletion of variables without fundamentally altering the questions being posed and the culprits are quite clearly conceptually, if not empirically, distinct.

Table 2 About Here

The two largest correlations should make apparent the limits of our latitude. The status composition of the school's student body correlates .99 with the average status levels of named friends in these various settings. Additionally, the average educational plans of named friends correlates .98 with the level of ambition characteristic of the student body as a whole. These are, to say the least, substantial figures. They imply, in the first instance, that two of our central independent variables are, for all practical purposes, one and the same, and, in the second, that the distinction between independent and dependent variables is difficult to maintain. This clearly is a most frustrating state of affairs, perhaps especially so because we fear

it accurately reflects the reality we had hoped to make sense of, rather than some aberration of our data.

A brief stocktaking regarding this last point might be in order. The theoretical distinctions between variables included in Figure 1 are culled directly from the expository literatures in which they were advanced. These are neither obscure nor marginal conceptual concerns. Rather, they represent the core of sociological thought regarding school environments. We have no reason to believe that we have misconstrued or misrepresented that material and are confident of the theoretical heritage and distinctiveness of the explanatory constructs represented in our model. Moreover, we believe our measurement strategies to be of exceptional quality and framed at the level of analysis appropriate to the conceptualization of the processes under study. Thus, we doubt that deficiencies in either our statement of the theory or our procedures for assessing that theory account for the unwieldy pattern of correlations observed in our between school data matrix. Finally, although the schools in our sample are few in number and their representativeness of any clearly defined population is not demonstrable, we nevertheless have no reason to think them especially unusual. Previous analyses of these same data generally have been quite consistent in implication with the literature to which they have contributed (Alexander and McDill, 1976; McDill and Rigsby, 1973), and the schools were purposely selected to reflect a broad range of school settings. Thus, given that the possibilities just reviewed do not provide an explanation for these data, we conclude that our refinement of theory has outstripped its potential for rigorous empirical assessment, at least with the methodology currently employed. This is a rather sobering realization, but we doubt that it is peculiar to the particular model that forced it upon us.

The results presented next, in Table 3, merely underscore this point. The substantive ambiguities forecast in the correlation matrix unfortunately are all too apparent in the regression estimates for the parameters of Figure 1.

Table 3 About Here

In general, the reduced form equations for the intervening measures (rows 1-4) of peer characteristics and curriculum distribution each reveal one singularly important exogenous influence, which in two (rows 3 and 4) of the four instances merely is the student body counterpart of the endogenous friends' attribute. From the pattern of correlations just reviewed, these results might as readily reflect the correspondence of alternative measures as any substantively interesting social processes.

The structural equations for the three outcome variables (rows 6, 8, and 10) are hardly more enlightening, despite their seemingly impressive explanatory power. Two of them (6 and 8) contain standardized parameter estimates in excess of 1.00 and all exhibit large, offsetting influences that defy interpretation. While one might be tempted to draw substantive implications from the few seemingly reasonable results appearing in Table 3 (for example, the reduced form equation for educational plans, row 5), we think this ill-advised, for there can be little confidence in their integrity. Rather, when confronted with such a morass, the most forthright, if not comforting, course likely is to recognize it for what it is, uninterpretable.

We conclude, therefore, that with the data and procedures available to us, the viability of the alternative hypotheses implied in Figure 1 regarding status composition effects cannot be established empirically. Thus, while the various propositions developed in our introduction are quite plausible,

and some (or all) actually may be correct and others incorrect, this cannot be demonstrated adequately with the survey methodology current in the school effects literature. If such propositions are, as they appear to be, irrefutable through recourse to their correspondence with data, we may have to be content with far cruder, but verifiable, assessments of institutional impact than would be desirable theoretically. One benefit from the analysis however, is that we come to better appreciate the limits of our understanding. Elegant but unsubstantiated conjecture deserves to be recognized as such; for this purpose, non-findings can be most instructive.

Tables 4 and 5 About Here

Finally, for the benefit of interested readers we present, but do not discuss, the matrix of within-school correlations and the regression equations computed therefrom as the individual-level analogue of the school-level analysis just reviewed. We originally had intended to compare these results with those in Table 3, but, circumstances being what they are, this no longer is so meaningful a concern. Actually, these results are not unlike those discussed in detail in a more elaborate within-school analysis of these same data reported elsewhere (Alexander and McDill, 1976).

DISCUSSION

This obviously has become a most unusual research report, concluding, in essence, that the issues are not researchable as framed. Yet we don't think our framing of them is especially flawed. Quite the contrary, in fact, we believe our conceptualization and procedures to be rather refined, and certainly not markedly inferior (if at all so) to other assessments of institutional impact in the school effects literature.

We think, rather, that our results illustrate the difficulties likely to be encountered in interpreting complex school-level processes. Collinearity typically is exaggerated in highly aggregated data (Blalock, 1964; Hannan, 1971), and this fact may limit severely the degree of refinement feasible in testable theories of school impact. The questions we have posed are intriguing and potentially quite important, yet our analysis can hardly be said to have illuminated them. We conclude, then, that the various propositions developed earlier regarding the basis for status composition effects all remain viable, and that their reconciliation remains elusive.

Such an inconclusive conclusion, however, is not without value. We have not learned that any of these plausible possibilities is clearly superior; hence, it becomes clear that we may have to live with a degree of uncertainty regarding the mechanisms by which school characteristics actually impinge upon school productivity. Under circumstances such as these, in which creative thought and innovative perspectives are required, prematurely drawn firm conclusions could only mislead and not enlighten. Worse yet, they could create myths which we mistake for knowledge, a deception which serves no one's interest.

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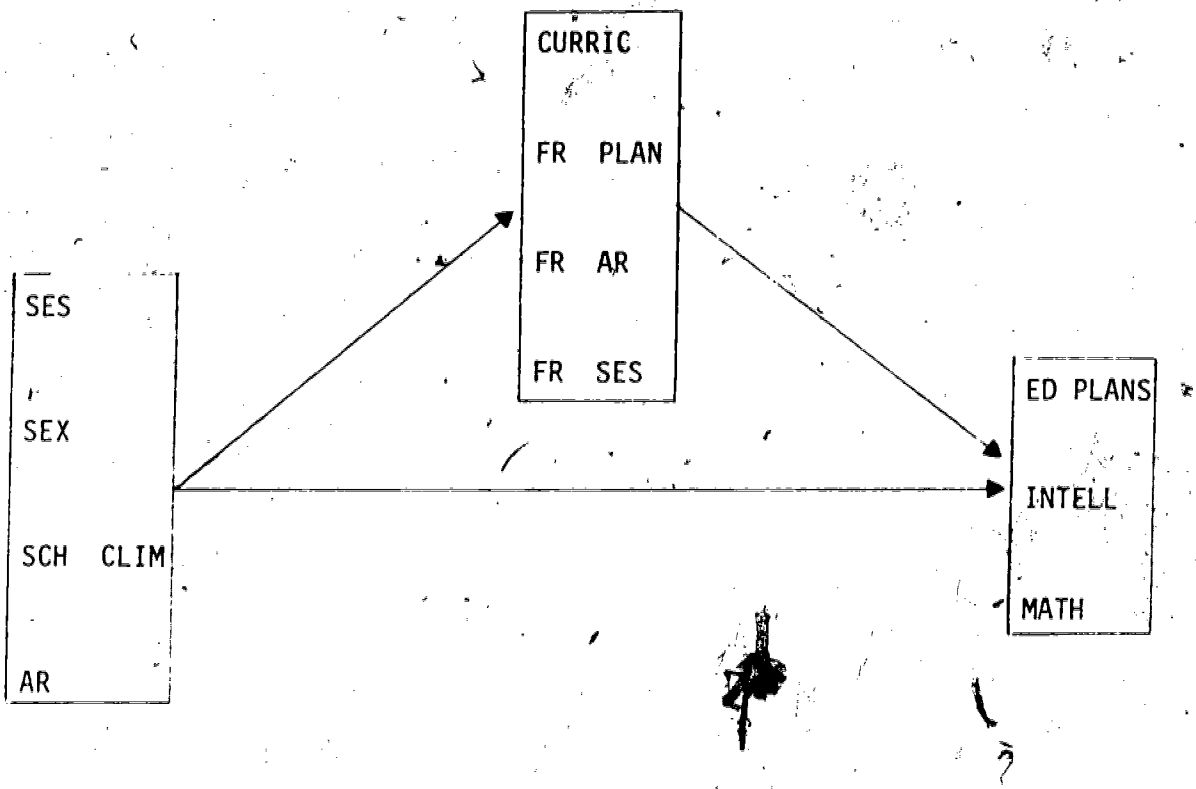
Figure 1*

Between-School Model of Status Composition Influences in School Productivity



*For convenience of presentation, variables at a given stage of the model have been blocked. The model actually is fully recursive between blocks. Causal relations among variables within blocks are unanalyzed.

Table 1. Percentages of Variance Situated Between Schools for Variables in the Model of School Status Composition Effects

SEX	SES	SCH CLIM	AR	CURRIC	FR PLAN	FR AR	FR SES	ED. PLAN	INTELL	MATH
.005	.243	1.00	.035	.075	.130	.048	.243	.128	.060	.080

Table 2. Matrix of Between School Correlations, and Associated Means and Standard Deviations, for the Model of Status Composition Influences (N=18)

	$\bar{X}$ SEX	$\bar{X}$ SES	SCH CLIM	$\bar{X}$ AR	$\bar{X}$ CURRIC	$\bar{X}$ FR PLAN	$\bar{X}$ FR AR	$\bar{X}$ FR SES	$\bar{X}$ ED PLAN	$\bar{X}$ INTELL	$\bar{X}$ MATH
$\bar{X}$ SEX	1.00	.015	.169	.058	.151	.005	-.202	-.042	.081	-.224	.206
$\bar{X}$ SES		1.00	.609	.674	.518	.836	.650	.991	.802	.417	.747
SCH CLIM			1.00	.766	.742	.616	.664	.608	.640	.622	.834
$\bar{X}$ AR				1.00	.399	.693	.887	.684	.682	.583	.813
$\bar{X}$ CURRIC					1.00	.487	.342	.478	.583	.386	.734
$\bar{X}$ FR PLAN						1.00	.684	.831	.977	.646	.771
$\bar{X}$ FR AR							1.00	.682	.613	.660	.618
$\bar{X}$ FR SES								1.00	.780	.459	.726
$\bar{X}$ ED PLAN									1.00	.621	.819
$\bar{X}$ INTELL										1.00	.498
$\bar{X}$ MATH											1.00
MEAN	.504	16.171	-.061	10.336	.601	2.195	10.457	16.407	2.121	11.218	14.674
S.D.	.031	2.390	10.256	.522	.131	.433	.533	2.443	.413	.717	1.738

Table 3. Between-School Analyses of Status Composition Influences in School Productivity (N=18)[a]

D. V.	Predetermined Variables: $\bar{X}$ SEX	$\bar{X}$ SES	SCH CLIM	$\bar{X}$ AR	$\bar{X}$ CURRIC	$\bar{X}$ FR PLAN	$\bar{X}$ FR AR	$\bar{X}$ FR SES	R^2
1. $\bar{X}$ CURRIC	.011 (.045)	.288 (.016)	.991 (.013)	-.555 (-.140)					.655
2. $\bar{X}$ FR PLAN	-.028 (-.384)	.664 (.120)	.067 (.003)	.195 (.162)					.732
3. $\bar{X}$ FR AR	-.254 (-4.343)	.080 (.018)	.022 (.001)	.830 (.849)					.855
4. $\bar{X}$ FR SES	-.059 (-4.606)	.967 (.999)	.003 (.001)	.033 (.154)					.985
5. $\bar{X}$ ED PLANS	.039 (.514)	.606 (.105)	.137 (.006)	.166 (.132)					.690
6. $\bar{X}$ ED PLANS	-.018 (-.243)	.269 (.046)	-.108 (-.004)	.282 (.223)	.185 (.581)	1.015 (.969)	-.239 (-.185)	-.383 (-.065)	.991
7. $\bar{X}$ INTELL	-.328 (-7.517)	-.060 (-.018)	.537 (.038)	.23 [illegible]					.517
8. $\bar{X}$ INTELL	-.161 (-3.680)	-1.960 (-.588)	.469 (.033)	-.164 (-.225)	.008 (.043)	.759 (1.257)	.246 (.331)	1.420 (.417)	.722
9. $\bar{X}$ MATH	.116 (6.428)	.300 (.218)	.409 (.069)	.290 (.968)					.826
10. $\bar{X}$ MATH	-.023 (-1.278)	-.231 (-.168)	-.006 (-.001)	.974 (3.243)	.413 (5.470)	.282 (1.133)	-.624 (-2.031)	.283 (.201)	.951

a) Metric coefficients in parentheses

Table 4. Matrix of Within-School Correlations, and Associated Means and Standard Deviations, for Individual-Level Analysis of School Productivity Processes (N=3050)

	SEX	SES	AR	FR SES	FR AR	CURRIC	FR PLAN	ED PLAN	INTELL	MATH
SEX	1.00	-.001	.098	.005	.073	.079	.114	.123	-.179	.250
SES		1.00	.182	.248	.126	.292	.219	.300	.158	.280
AR			1.00	.131	.121	.315	.168	.263	.098	.501
FR SES				1.00	.200	.211	.308	.229	.138	.233
FR AR					1.00	.176	.229	.153	.097	.203
CURRIC						1.00	.341	.571	.261	.538
FR PLAN							1.00	.415	.159	.302
ED PLAN								1.00	.294	.464
INTELL									1.00	.225
MATH										1.00
MEAN	-.035	.230	.249	.087	.162	.064	.074	.144	.187	.619
S.D.	.499	4.310	2.385	4.288	2.339	.458	1.044	1.038	2.911	5.386

Table 5. Within-School Analysis of Status Influences in School Productivity (N=3050)[a]

D. V.	SEX	SES	AR	CURRIC	FR PLAN	FR AR	FR SES	R^2
CURRIC	.053* (.049)	.244* (.026)	.265* (.051)					.159
FR PLAN	.102* (.214)	.197* (.048)	.122* (.053)					.075
FR AR	.064* (.299)	.109* (.059)	.095* (.093)					.030
FR SES	-.003 (-.029)	.232* (.231)	.089* (.159)					.069
ED PLAN	.103* (.215)	.262* (.063)	.205* (.089)					.145
ED PLAN	.058* (.121)	.105* (.025)	.060* (.026)	.436* (.988)	.216* (.215)	-.006 (-.002)	.037* (.009)	.401
INTELL	-.187* (-1.093)	.141* (.095)	.091* (.111)					.065
INTELL	-.208* (-1.215)	.060* (.040)	.018 (.021)	.213* (1.357)	.071* (.197)	.039* (.049)	.047* (.032)	.126
MATH	.206* (2.226)	.199* (.249)	.444* (1.003)					.330
MATH	.179* (1.929)	.081* (.101)	.333* (.751)	.354* (4.157)	.055* (.284)	.051* (.117)	.067* (.085)	.469

a) Metric regression coefficients reported in parentheses. Asterisks indicate coefficient equal to or greater than twice its standard error.