CLASSROOM SOCIAL RELATIONSHIPS: EXPLORING THE BOWLES AND GINTIS HYPOTHESIS

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In Schooling in Capitalist America (1976), Bowles and Gintis assert that the relationships in schools reproduce the consciousness of workers by fragmenting students into groups where different capabilities, attitudes and behaviors are rewarded. These institutional relations reinforce "the self-concepts, aspirations and social class identifications of individuals to the requirements of the social division of labor." To explore this hypothesis discriminant analyses of variables measuring classroom relationships and student attitudes in 139 secondary classrooms at different track levels were conducted. The findings indicate that track levels, reflective of racial and social divisions of society, are characterized by differences on both dimensions. Relationships in low track classes were more characterized by alienation, distance and punitiveness than were those in upper track classes. Students in the lowest track expressed more negative attitudes about themselves and their futures. That schools appear to play a dynamic role in the reinforcement or production of attitude differences is supported by the finding that track levels are more widely separated and distinct on this dimension in senior than in junior high schools. The differences found seem likely to contribute to the differential socialization posited by Bowles and Gintis.

In their analysis of schools as agents in the reproduction of the inequalities in the American economic system, Samuel Bowles and Herbert Gintis (1976) focus a major part of their discussion on the school's reinforcement of social class differences children bring with them to school and on the differential socialization children from various social classes receive there. An essential element in their perspective of schooling is that groups of students, sorted largely on race and class differences, receive different treatments that result not only in differences in cognitive outcomes, but in non-cognitive outcome differences as well. In fact, to Bowles and Gintis, even more important than the differences expected in the type and quantity of knowledge acquired by students in various educational settings, are the differences expected in students' attitudes toward institutional structures, toward themselves and toward their anticipated roles in adult society. For it is these attitudes which make possible the continuance of a social and economic system characterized by unequal and undemocratic structures.

The strengthening in students of the appropriate attitudes results from a process termed the "legitimation of inequality" by Bowles and Gintis. Through this legitimation process, students come to accept the unequal features of the larger society—hierarchical authority structures and unequal pay, for example—as natural. And, while students at the upper end of the strata view elite positions as their due, even those students at the bottom come to see their own limited future roles in these structures as largely appropriate and acceptable. Thus, students come to both view as legitimate the principles that govern the existing social order and to see themselves as largely responsible for their own places in it.

This view of school sorting and socialization processes has two distinct but overlapping components. First, as a result of the social organization of both schools and instruction—the structure that results from the sorting of students—all students learn attitudes seen by Bowles and Gintis as necessary for the maintenance of a hierarchical and authoritarian society. And, second, from the differences in both the contents and contexts students experience within this schooling structure, different groups of students are socialized toward different positions within the larger society. Thus, *all* students learn respect for the school hierarchy and its authority and view rule-following,

This work draws upon data from A Study of Schooling, an inquiry into selected schools in the United States (John I. Goodlad, Principal Investigator). The study was conducted under the auspices of the Institute for Development of Educational Activities of the Charles F. Kettering Foundation and was supported, in addition to the Kettering Foundation, by a grant from the Carnegie Corporation. While the author bears all responsibility for the interpretations herein, the comments of Kenneth A. Sirotnik and Frank M. Howell are most appreciated.
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direction-taking, punctuality, and an essentially passive participation as appropriate institutional behaviors. Yet there are important differences in the attitudes reinforced and engendered in different groups of students.

By socializing children differently, largely cementing the values and personality characteristics of the class of their origins, Bowles and Gintis assert that schools prepare students to meet the demands of the different occupations they will be expected to assume within the existing class structure. This is accomplished through "the close correspondence between the social relationships which govern personal interaction in the work place and the social relationships of the educational system" (p. 12). The social relationships and interactions in schools and classrooms reproduce the consciousness of workers by fragmenting students into stratified groups where different capabilities, attitudes and behaviors are rewarded. These institutional relations serve to reproduce "the self-concepts, aspirations and social class identifications of individuals to the requirements of the social division of labor" (p. 129). In doing so, the educational system produces from lower class children, workers who will be subordinate to external control and alienated from the institutions, but willing to conform to the needs of the work place. Additionally, Bowles and Gintis suggest that the absence of close interpersonal relationships is characteristic of such environments. In contrast, students destined for upper status positions in the economic hierarchy are more likely to experience social relationships and interactions which promote active involvement, affiliation with others and the internalization of norms rather than coercive control.

Bowles and Gintis assert that schools accomplish this differential socialization and the legitimation of its attendant inequalities through the "ostensibly objective and meritocratic selection and reward system of U.S. education" (p. 108). They see this process as occurring through the structure and events of everyday school life which, as Jerome Karabel and H. H. Halsey (1977) elaborate, "upholds those meritocratic values that justify differential rewards; the separation of the 'successful' from the 'failures' provides daily object lessons in inequality" (p. 25). In this way the form and content of schooling practices used to organize instruction—such as curriculum tracking and ability grouping—play a major role in enabling students to internalize failure resulting from the stratification process as an *individual* rather than a social or structural problem.

Through the selection and allocation system within schools and the differential educational treatments students receive, then, schools are seen by Bowles and Gintis as either reinforcing or modifying students' self-concepts and aspirations so that not only do students at the top of the social hierarchy view elite positions as appropriate for their futures, but those at the bottom also are either satisfied with or resigned to the prospect of lower class roles.

THE RESEARCH PROBLEM

Despite their well developed hypothesis, Bowles and Gintis provide little evidence of actual differences in the social relationships and interactions experienced by students in schools and classrooms that could result in the reinforcement of social class differences or in the differential socialization they posit. Neither do they provide data to confirm the existence of student attitudes that would indicate that the existence of hierarchical authoritarian structures and the resultant inequalities had been legitimized in the minds of students.

To explore whether, in fact, differences in the day-to-day schooling relationships students experience exist that support these contentions, classroom context and student attitude data collected in 1977 by John Goodlad and Associates for A Study of Schooling were examined.[1] English and mathematics classrooms from 25 secondary schools were investigated to determine whether patterns of differential socialization and attitude formation consistent with Bowles and Gintis' assertions could be found. Tracking, the organizational structure within schools that separates students into groups largely reflective of their social origins, was viewed as the vehicle for these different educational treatments.

It seems likely, if Bowles and Gintis are correct, that classes at different track or ability levels would be characterized by different social relationships and interactions. Low track classes may help to socialize students from lower groups toward passivity; institutional relationships characterized by dominance, coercion and distance; and alienation from the educational environment. On the contrary, relationships and interactions in high track classes may help to socialize students toward

[1] This paper is a brief presentation and discussion of findings of a study of classroom processes and secondary school tracking sponsored in part by grants from the Carnegie Corporation and the Kettering Foundation and was conducted as a sub-study of A Study of Schooling under the auspices of the Graduate School of Education, University of California, Los Angeles. The views presented herein, however, are the sole responsibility of the author.

more active involvement; institutional relationships that are more characterized by warmth and concern; and greater affiliation with the learning experience. If these conditions do exist, tracking in schools could, in these ways, serve to reinforce and reproduce the inequities in the larger society by limiting some students' positive participation in the educational experience. As a result, one objective of the study was to determine the following:

> Do students in different tracking groups within schools participate in different types of social relationships and learning interactions in their classrooms?

and to explore:

> If there are systematically different social relationships in classrooms, do these differences indicate that these groups of students may be led differentially to passivity and alienation from or to involvement and affiliation with institutions?

These questions were explored by seeking answers in the data to the following: 1) *How do student-teacher relationships and teacher affect vary among classes at different track levels?* 2) *How do student-peer relationships and student affect vary among classes at various track levels?* 3) *Does the type of learning interactions (active or passive student involvement) vary with the track level of classes?*[2]

The legitimation of inequality concept was examined in the study in the following way. Track levels in schools were explored to determine whether student attitudes which may reflect this legitimation process seemed to cluster within particular track levels. Some evidence of this process occurring might be seen if track levels were clearly different in that the self-concepts of students in the lowest track were generally lower, if students in the lowest tracks had low level aspirations, and yet, if relatively little dissatisfaction with their schooling experience was expressed by these same students. If these attitudes were evidenced in the data, it would be possible to suggest that students at the bottom of the schooling, and in many cases the societal, hierarchy had adjusted their aspirations accordingly, yet did not view the school as treating them unjustly. Indeed, we might conjecture, as Bowles and Gintis do, that these students had internalized the legitimacy of the hierarchy and assumed responsibility for their own places in it. Therefore, the second objective of this study was to investigate the following:

> How are student self-concepts, aspirations and future plans, and attitudes toward the schooling experience distributed among different tracking groups within schools?
> If there is a differential distribution of student attitudes, does it reflect the "legitimation of inequality" proposed by Bowles and Gintis?

These questions were explored in the data by seeking answers to the following questions: *Do the self-concepts of students vary with track level? Do student aspirations vary with track level? And, do student attitudes toward their schools, subjects and classes vary with the track level of classes?*

It was expected that these analyses could provide some insight into whether the differences in classroom relationships and student attitudes, consistent with the sorting and socialization processes and effects posed by Bowles and Gintis, exist between high and low track classes. However, it is important as well to explore what role any differences in experiences may play in the *reinforcement* or *production* of the kinds of differences in student attitudes Bowles and Gintis suggest, i.e., the legitimation of inequality. It seems that three possibilities must be considered: 1) that school experiences serve to reduce the initial differences among students and thereby, contrary to Bowles and Gintis' notions, tend to work toward greater equality among groups, 2) that school experiences increase initial differences among students and thus, as Bowles and Gintis posit, function to exacerbate social inequities, and 3) that school experiences tend neither to increase nor decrease initial student differences. This last circumstance could be variously interpreted. But consistent with Bowles and Gintis' view, the absence of evidence that initial differences in student attitudes are lessened with schooling could be viewed as the result of the reinforcement by the school of these differences and thereby, as constituting a perpetuation of cultural inequities.

Sorting out the role of schools in producing the kinds of attitudes Bowles and Gintis term the legitimation of inequality is not easily done, however. While it is often assumed that socialization occurs as the cumulative result of experience, it may be that certain critical events—such as labeling and classification—may have powerful effects in a short period of

[2] For a more comprehensive analysis of classroom differences among track levels—specifically in the areas of curricular content and instructional practice as well as social relationships—see Oakes, Jeannie. "The Reproduction of Inequity: The Content of Secondary School Tracking" *The Urban Review* (in press).

time. Further, the overall time frame for this process is not entirely clear. Because the type of socialization that Bowles and Gintis suggest occurs in secondary schools is largely a reinforcement of attitudes students bring with them from home and a continuation of differential treatment in elementary schools, an initial point for this process cannot be isolated. In this view, even the kind of sorting experienced as early as first grade grouping for reading, for example, is reflective of differences students already possess (see Rist 1970, for example).

Yet, Bowles and Gintis look to the educational "selection and reward system" and differential treatments students receive to accomplish this reinforcement of values. While it is possible, as suggested above, that this socialization that solidifies class-linked attitudes in students is an almost immediate process, occurring perhaps at the time students are classified into tracks or ability groups, what Bowles and Gintis suggest is that the accumulated experience of schooling cements the initial student differences in student attitudes. Therefore, we would expect to see either increased differences or, at least, no decrease in differences in attitudes with increased years of schooling to be consistent with Bowles and Gintis' view. Accordingly, the third objective of the study was to explore the following:

> Do the extent and direction of differences in student attitudes among track levels change with years of schooling?

and,

> If changes are evident, are the direction of these changes indicative of increased effects of differential socializations, i.e., the legitimation of inequality?

Lacking the longitudinal data to look at the stability or change in these attitudes in individuals over time, separate analyses of the data collected at two levels of schooling represented in the sample—junior and senior high—were made to explore these questions.

PROCEDURES

The Sample

Data from 139 secondary English and mathematics classes which constitute a subsample of the classes included in the Study of Schooling dataset were used for this study.[3] Of the 139, 75 classes were for high track or ability grouped students (40 senior high and 35 junior high) and 64 were for low track or ability grouped students. These high and low track classes were among 297 randomly selected English and mathematics classes at 25 secondary schools. Of this total, 85 classes were identified as average and 75 as untracked or heterogeneous in student ability or achievement levels. The 25 schools were in 12 distinct locations in the United States with one junior high and one senior high included at each site. Schools were chosen purposefully to represent such stratification factors as school size, economic status, ethnicity, and location in terms of urban, rural or suburban. While no attempt was made to secure a statistically random sample of schools, there is no reason to suspect that the classes studied here were unrepresentative of those in American schools in general. However, caution should be exercised in generalizing the conclusions of this study to a larger population of classes.

Data Collected

Guided by the research objectives the study focused on the exploration and analysis of a complex set of variables that characterize the classroom relationships and attitudes of students in different track levels of secondary English and math classes. Teacher, student and observer perceptions were included in these explorations and analyses of social relationships, classroom interaction and student attitude variables.

Data concerning class-specific and student attitude variables for the study of track differences were drawn from responses to the Study of Schooling teacher and pupil questionnaires and teacher open-ended interview schedules. Of the class-specific items on the student questionnaire, 113 were attitudinal, Likert-type measures of class climate. From these separate items, 18 scales were generated using factor and cluster analysis around constructs considered in this study including students' views of the teacher and their perceptions of other students. Additionally, data from two sections of the classroom observation instrument were included in the analysis of track level differences. The Five-Minute Interaction (FMI) was used during each classroom observation to record the fine details of the adult/student interactions taking place. The snapshot was used to identify: 1) the activities occurring in classrooms, 2) grouping patterns, 3) adult and student responsibilities, and 4) students involved in activities independent of adults. One additional instrument was specifically developed for the collection of additional data for

[3] More detailed information on A Study of Schooling can be found in the series of four sequential articles published in the *Phi Delta Kappan*. The first in this series, Goodlad, Sirotnik and Overman (1979), includes a conceptual overview, sample design and types of data collected.

this study. A questionnaire for administrators was designed to determine the track level of classes in the sample. Each sampled class was identified by a school counselor or administrator as a high achievement level class, an average achievement level class, a low achievement level class, or as a class heterogeneous in achievement levels. At the high school level, high level classes were typically from the honors or upper college preparatory track. At the junior high level these classes were typically termed high ability groups. Low level classes at the high school level were most often those English and math classes taught to students in vocational or general tracks. At the junior highs these classes were usually referred to as low ability groups. The use of the terms high, average and low track classes seemed to cut through terminology differences at the different schools and levels and identify classes according to their essential characteristics in terms of student classification.

The variables used in the discriminant analyses are described in Table 1.

Table 1. Variable Measures

Variable Set	Variable Name and Data Source	Variable Definition
Teacher-Student Relationships and Teacher Affect	Teacher Concern (Student)	—$\bar{X}$ scale score (1 = strongly disagree to 4 = strongly agree)
	Teacher Punitiveness (Student)	—$\bar{X}$ scale score (1 = strongly disagree to 4 = strongly agree)
	Adult Positive Affect (Observed)	—percent of teacher interactions characterized by positive affect
	Adult Negative Affect (Observed)	—percent of teacher interactions characterized by negative affect
	Time on Behavior (Teacher)	—percent of classtime spent on behavioral control
	Time on Behavior (Student)	—estimate of relative amount of classtime spent on behavioral control
	Time on Behavior (Observed)	—percent of interactions concerning behavioral control
Student-Student Relationships and Student Affect	Students Are Unfriendly (Student)	—$\bar{X}$ response to survey item (1 = strongly disagree to 4 = strongly agree)
	I Feel Left Out (Student)	—$\bar{X}$ response to survey item (1 = strongly disagree to 4 = strongly agree)
	Classroom Dissonance	—$\bar{X}$ scores on learning environment scales (1 = strongly disagree to 4 = strongly agree)
	Student Compliance	
	Student Apathy	
	Peer Esteem	
	Student Competitiveness	
	Student Cliqueness (Student)	
	Student Positive Affect (Observed)	—$\bar{X}$ percent of student interactions characterized by positive affect
	Student Negative Affect (Observed)	—percent of student interactions characterized by negative affect
Student Involvement	Off-Task Behavior (Observed)	—percent of students over observation period
	Student Interest Level (Observed)	—percent of students at high interest level (1 = 0–24%, 2 = 25–49%, 3 = 50–75%, 4 = 75–100%)
	Active Activities (Teachers)	—$\bar{X}$ response to group of activities (1 = never to 4 = always or most of the time)
	Active Activities (Observed)	—percent of classtime in group of activities
	Open-Ended Questions (Observed)	—percent of total teacher interactions
	Passive Activities (Student)	—percent who said they did activities in this group
	Cooperative Learning Groups	—percent of all student configurations

Table 1. (Continued)

Variable Set	Variable Name and Data Source	Variable Definition
	(Observed)	
	Passive Activities (Observed)	—percent of class time in group of activities
	Student Decision-Making (Observed)	—percent of curricular decisions made by students
	Student Decision-Making (Student)	—$\bar{X}$ scale score (1 = strongly disagree to 4 = strongly agree)
	Passive Activities (Teacher)	—$\bar{X}$ response to group of activities (1 = never to 4 = always or most of the time)
	Student Direction of Activities (Observed)	—percent of all director modes (teacher, student, cooperative, independent)
	Active Activities (Student)	—percent of students who said they did activities in this group
Student Attitudes	Aspirations (Student)	—$\bar{X}$ response to level of education students expect to complete (1 = quit school to 6 = graduate school)
	Aspirations Percent Don't Know (Student)	—percent responding "don't know" to level of education they expect to complete
	General Self-Concept (Student)	—$\bar{X}$ scale score over eight items
	Academic Self-Concept (Student)	—$\bar{X}$ scale score over six items
	Peer Self-Concept (Student)	—$\bar{X}$ scale score over four items
	Grading of School (Student)	—$\bar{X}$ grade score (1 = F to 5 = A)
	Likes Subject (Student)	—$\bar{X}$ response to survey item (1 = very little to 4 = very much)
	Subject is Important (Student)	—$\bar{X}$ response to survey item (1 = very unimportant to 4 = very important)
	Student Satisfaction (Student)	—$\bar{X}$ scale score (1 = strongly disagree to 4 = strongly agree)
	Interesting/Boring (Student)	—$\bar{X}$ response to survey item concerning class content (1 = very boring to 4 = very interesting)

Analysis

Discriminant analysis was chosen as the primary analytic tool for the study as it measures the success with which sets of variables discriminate among groups of cases and provides an efficient basis for explaining the nature of these group differences.

By weighting and linearly combining sets of variables on which groups were expected to differ, this procedure resulted in tracks being as statistically distinct as possible. This was accomplished by forming one or more linear combinations of variables into "linear discriminant functions." These functions, and the track level means (centroids) on them, permitted two kinds of assessment. First, it was determined whether there were differences among groups. (The test of the equality of group centroids prior to the removal of the first discriminant function is equivalent to a MANOVA test of differences among group means on the entire set of variables.) And second, the nature of this differentiation was explained i.e., measures that appeared to contribute most in differentiating among track levels could be identified, instead of conducting one huge multivariate analysis; considerable conceptual and substantive clarity was achieved by conducting smaller multivariate analyses relating to each objective separately.[4]

For each of the analysis, because differences among two tracks were considered, only one discriminant function was possible. To give substantive meaning to the discriminant func-

[4] Because of the brevity of this paper, the findings presented here are partial results of discriminant analyses over all classes. This overall analysis, of course, tends to blur the distinctions between subject areas and level of schooling. Additionally, this aggregation of classes results in the reduction of the magnitude of track level separation which occurred in the separate subject by level analyses. For a detailed presentation of separate analyses by subject and schooling levels, precise definitions of variables and summary statistics, see Oakes (1981).

tion in each analysis, the relative contribution of each variable was assessed by the size of its correlation coefficient with the function itself.[5]

The unit of analysis selected for this study was the classroom. Many of the variables are clearly class measures (e.g., the proportion of observed time spent on behavior and observers' reports of the occurrence of student decision-making). Other measures—students' perceptions of their learning environments, for example—are not so easily categorized. They may be viewed either individually, as measures of characteristics of perceivers in the classroom context, or collectively—averaged within classes—as measures of systemic properties of classes themselves. Because this inquiry was focused primarily on features of classrooms and groups, rather than on the students within them as individuals, the second approach seemed most appropriate in this case. Thus, the average of individual perceptions within classes was used as a measure of properties of those classrooms. This approach necessitated the aggregation of student data at the class level and the reporting of these data in terms of class means and percentages.

RESULTS AND DISCUSSION

Tracking and socioeconomic separation. Before interpreting any track level differences in the light of Bowles and Gintis' work, it is first important to confirm the validity of using tracking as an organizational feature of schools which divides students into groups that are reflective of social and economic divisions in society. For only if this parallel is clear can the differences which exist among track levels be viewed as possible mechanisms of cultural reproduction. The literature has firmly established the association between the race and socioeconomic status of students and their track level placements in schools. (Among many others see Shafer and Olexa, 1971; Heyns, 1974; Alexander and Eckland, 1975; Rosenbaum, 1976; Hauser and others, 1976; Alexander and McDill, 1976; Metz, 1978.) This relationship is such that students from the upper socioeconomic levels are more likely than others to be found in the highest track levels and students from minority groups and low socioeconomic levels are more likely than others to be found in classes at the lowest track level. Whether these factors affect track placement directly or are mediated through the mechanisms used for assessing aptitude and achievement—and there is considerable debate in the literature on this very point—the relationship is consistent (see Kirp, 1973; Mercer, 1974; Rehberg and Rosenthal, 1978; Davis and Haller, 1981; among others.)[6] The findings from this study, too, support the parallel between stratification in society and that in schools. In the multiracial schools in the study, while the total population was evenly divided between whites and non-whites, minority and white students were found in disproportionate percentages in high and low track classes. The student population in high track classes was 62 percent white and 38 percent non-white; low track classes were 35 percent white and 65 percent non-white (Gamma = .50). Furthermore, this relationship was most consistently found in schools where minority students were also poor. In fact, not unexpectedly, at each of the multiracial schools included in the sample, the non-whites were considerably lower on the measure of socioeconomic status than were whites (Engstrom, 1981). Because these SES data were collected from a somewhat limited sample of parents at each school a more direct measure of the association between SES and track placement was not possible with the Study of Schooling data. However, we can be quite certain from the above that the relationship between race, socioeconomic status and track

[5] It should be noted that although both standardized discriminant function coefficients (comparable to ordinary beta "weights" in multiple regression) for each variable in the function and correlations of each variable with the function itself (comparable to ordinary loading coefficients in factor analysis) are obtained indiscriminant analysis, it has been suggested that the use of the correlations is preferable. In a study of this type the *understanding* of the nature of the dimensions which separate groups is of primary interest. Toward this end, several authors have suggested that the interpretation of linear discriminant functions is facilitated by the use of the correlations in that they indicate the total rather than the partial contribution of each variable to group separation on the function. Additionally, there is some evidence that statistically these correlations have greater stability than do the standardized coefficients. (For a fuller discussion of these issues, see Cooley and Lohnes, 1971; Darlington, Weinberg and Walberg, 1975; and Marks, 1966.)

[6] The relationship, while consistently found, varies in strength depending on the number of track levels included in the analysis. When three or more track levels are used, considerable overlapping of students at various SES occurs at the middle level(s). The strength of association in most studies of this type are in the .25 to .40 range (See Alexander, Cook and McDill, 1978; Davis and Haller, 1981 for examples). When the relationship between track placement and SES considers only membership in the top and bottom track levels, the association is considerably stronger.

placement, well documented by other studies, exists in this sample as well.[7]

Do students in different tracking groups within schools participate in different types of social relationships and learning interactions in their classrooms?

How do student-teacher relationships and teacher affect vary among classes at different track levels? The multiple discriminant analysis performed on tracking and teacher-student relationships and teachers' affect in the classroom used seven discriminating variables. Included in the analysis were: 1) student scores on two learning environment scales: one measuring their perceptions of teachers' concern for students, the other assessing teacher punitiveness in the classroom, 2) student, teacher and observer reports of the relative amounts of class time spent on student behavior and discipline and 3) observer reports of the proportion of teacher-student interactions that were characterized by positive or negative teacher affect.[8]

Statistically significant differences were found among track groups on this set of variables. Additionally, the canonical correlation of .58 indicates a substantial relationship between track level and the discriminant function formed in the analysis.

The rotated correlations between the canonical discriminant functions and the discriminating variables indicate that two types of variables contributed most to track level separation—student perceptions of the quality of their teachers' relationships with them and perceptions from all three data sources of the proportion of class time spent on discipline and student behavior. Observed teacher affect of neither type appeared to contribute importantly to track level differences (Table 2).

The group centroids (track level means on the functions) show that the high track group had the lower mean score on the first function and the low track group had the higher score. Substantively, these centroids can be interpreted to mean that high track and low track classes were clearly different in the aspects of teacher-student relationships measure. Students in high track classes saw their teachers as less punitive toward them and more concerned

Table 2. Results of Discriminant Analysis of Tracked Classes on Teacher-Student Relationship and Teacher Affect Variables*

Dependent Variables	Correlations Between Canonical Discriminant Function and Discriminating Variables: Function
Time on Behavior—Student Estimate	.79
Teacher Punitiveness	.67
Time on Behavior—Teacher Estimate	.60
Time on Behavior—Observed	.50
Teacher Concern	−.43
Adult Negative Affect—Observed	.09
Adult Positive Affect—Observed	.03
Discriminant Function Statistics	
Eigenvalue	.50
Relative Percentage	100%
Canonical Correlation	.58
Group Centroids	
High Track	−.65
Low Track	.77

* Significant differences were found among track levels on this set of variables—$\chi^2 = 49.67$, $p < .001$ (7df).

[7] Some caution should be used when interpreting the relationship implied by these data in that no direct measure of SES is provided. It can be argued, however, that the use of race/ethnicity as a proxy for SES is conservative and tends to reduce rather than to inflate the strength of the actual SES/track level relationship. For, while most minorities are also poor, they are not the only ones who are. We know from other work that disproportionately large percentages of lower class whites are found in low track classes and middle and upper class whites in high track classes. Their exclusion from the analysis used here would lead us to expect an attenuated relationship between high and low track membership and SES.

The reader should keep in mind, too, that, although not directly relevant to a study of differences in the schooling experiences of different racial and social class groups, no assessment of the relationship between track, SES and measured ability is included here.

[8] Some caution should be exercised concerning this last set of variables. Teacher affect of both the positive and negative types was observed very infrequently in classrooms. For example, a mean of only 1.16 percent of the teacher-student interactions were observed to include positive teacher affect. Similarly, an average of .83 percent of the total teacher-student interactions were characterized by negative teacher affect. So, while differences in these variables in track levels are important as they may *contribute* to the description of differences in relationships, their infrequent occurrence warns against placing undue emphasis on these variables alone.

about them than did students in low track classes. Students in high track classes were more likely to agree with statements of the following kind than were low track students: a) the teacher listens to me, b) the teacher lets me express my feelings, c) I feel this teacher is honest with me, and d) this teacher is friendly. High track students were more likely than low to disagree with the following types of statements: a) the teacher makes fun of some students, b) this teacher hurts my feelings, c) the teacher punishes me unfairly, and d) the teacher gets mad when I ask a question. Additionally, reports from teachers, students and observers all indicate that less class time was spent dealing with student behavior and discipline in high than in low track classes.

How do student-peer relationships and student affect vary among classes at various track levels? To examine the differences in the relationships among students and student affect in classes at different track levels a multiple discriminant analysis was performed using ten discriminating variables. Included in the analysis were: 1) students' scores on the learning environment scales measuring classroom dissonance, student compliance and cooperation with classroom activity, student apathy, peer esteem, student competitiveness, and classroom cliqueness, 2) students' level of agreement with two single questionnaire items: "Students in this class are unfriendly to me" and "I feel left out of class activities" and 3) observers' reports of the percentages of student-initiated interactions with teachers characterized by positive and negative student affect.

Significant differences were found among track levels on the ten variables and the canonical R of .66 indicates a strong association between tracking and differences in student relationships as measured here. The high track obtained the lower mean score on the function and the low track the higher mean score. The two tracks are quite distinct (Table 3).

We can interpret these statistics to mean that the student-peer relationships in high and low track classes were distinctly different in the following ways: 1) Low track students were considerably more likely to report that students in their classes were unfriendly to them and that they felt left out of class activities. 2) Low track students more often reported dissonance in their classrooms, including students fighting and arguing with each other. 3) Students in high track classes reported higher levels of peer esteem and student willingness to cooperate in classroom activities. 4) Students in high tracks reported lower levels of student apathy in their classes.

As in the previous analysis, the affective tone of observed interactions did not contribute markedly to track level separation. The differences in the positive or negative tenor of student initiated interactions with their teachers adds to the description of track differences only in that they tend toward the same direction as the other variables; more positive affect in the high track and more negative in the low. Neither student cliqueness—students levels of agreement with statements such as: some groups of students refuse to mix with the rest of the class—nor student competitiveness appeared to vary importantly with track level.

Table 3. Results of Discriminant Analysis of Tracked Classes on Student-Peer Relationship and Student Affect Variables*

	Correlations Between Canonical Discriminant Function and Discriminating Variables
Dependent Variables	Function
Student Apathy	.88
Students Are Unfriendly	.69
I Feel Left Out	.69
Classroom Dissonance	.68
Peer Esteem	−.47
Student Compliance	−.42
Student Positive Affect—Observed	−.28
Student Cliqueness	.19
Student Negative Affect—Observed	.17
Student Competitiveness	−.11
Discriminant Function Statistics	
Eigenvalue	.76
Relative Percentage	100%
Canonical Correlation	.66
Group Centroids	
High Track	−.79
Low Track	.94

* Significant differences were found among track levels on this set of variables—$\chi^2=67.500$, $p < .001$ (10 df).

Does the type of learning interactions (active or passive student involvement) vary with the track level of classes? In an attempt to determine whether students' involvement in classroom learning activities at different track levels may have contributed differentially to increasing alienation from or affiliation with the classroom experience, 13 discriminating variables were included in the multiple discriminant analysis of track levels and types of student involvement. Contained in the analysis

were the following variables: teacher, student and observer reports of the occurrence of both passive and active learning activities; the observed frequency with which students directed classroom activities; the observed frequency of the arrangement of students in cooperatively-led small, medium or large groups for learning activities; the extent of student decision-making in the classroom from both student and observer reports; the observed extent to which teachers asked open-ended questions of their students; observer reports of the average percentage of students who were actively participating at a high interest level in the prescribed classroom activity; and the percentage of students who, although assigned to a learning activity, were engaged in "off task" behavior (see Table 1).

Again, significant differences among track levels were found on this set of variables. Although, from the relatively weak canonical correlation (.43) between the discriminant function and the tracking variable, we can conclude that track level differences on this set of variables were not terribly strong. The pattern of group centroids on the function, however, is the familiar one and while the distance between them is not as great as in the previous analyses, the high and low tracks are clearly separated (Table 4).

We can infer from the correlations between the function and the discriminating variables that track levels differed primarily in that high track classes were characterized by the more frequent occurrence of instructional activities that required active student participation than were low track classes. Furthermore, high track classes had lower levels of observed "off-task" student behavior. High track classes, however, were also lower in observed and student reported occurrences of decision-making by students. Low track classes, on the other hand, were higher in off-task behavior, lower in the frequency of active instructional activities and, at the same time, higher in student decision-making.

It is important to note, however, that no marked differences occurred in the observed frequency of teachers asking open-ended questions, in the use of cooperative learning groups or in student direction of class activities. From other work, in fact, it is clear that the occurrence of any of active, cooperative or student participatory activities was extremely small at all track levels and that all groups tended to be passive (Oakes, 1981; Sirotnik, 1981). What the discriminant analysis shows is that within this dominantly passive classroom mode, students in high track classes were *slightly* more actively involved than were those in the low track group.

Table 4. Results of Discriminant Analysis of Tracked Classes on Student Involvement Variables*

	Correlations Between Canonical Discriminant Function and Discriminating Variables
Dependent Variables	Function
Off-Task Behavior	−.67
Student Interest Level	.27
Active Activities (Teacher)	.38
Active Activities (Observed)	.32
Open-Ended Questions	.24
Passive Activities (Student)	.14
Cooperative Learning Groups	−.05
Passive Activities (Observed)	.01
Student Decision-Making (Observed)	−.35
Student Decision-Making	−.39
Passive Activities (Teacher)	.13
Student Direction of Activity	.18
Active Activities (Student)	.17
Discriminant Function Statistics	
Eigenvalue	.23
Relative Percentage	100%
Canonical Correlation	.43
Group Centroids	
High Track	.44
Low Track	−.52

* Significant differences between track levels on this set of variables were found—$\times^2 = 25.569$, $p < .05$ (13 df).

If there are systematically different social relationships in classrooms, do these differences indicate that these groups of students may be led differentially to passivity and alienation from or to involvement and affiliation with institutions?

The findings support the notions of Bowles and Gintis in that relationships in classes where poor and minority students are most likely to be found—low track classes—were more characterized by alienation, distance and authority than were high track classes. The greater proportion of time teachers spent on discipline and student behavior, students' perceptions of their

teachers as more punitive and less concerned about them, the more negative feelings and behaviors students reported they exhibited toward one another, and the more negative student attitudes expressed toward classroom experiences that were found in low track classes certainly support this view. And, at the same time, the proportionately less time spent on behavior by teachers, students' perceptions of teachers as less punitive and more concerned about them, the lower levels of student hostility toward peers and apathy toward the classroom situation, and the less frequent student reports of feeling isolated found in high track classes all seem to provide support for Bowles and Gintis' assertions that those at the upper levels experience relationships which lead them to affiliation with the schooling experience.

Additionally, there is some support in the findings for the hypothesis that students from different groups have different types of involvement with their schooling experience as a result of the type of social relationships they experience. High track classes tended to be more characterized by a greater frequency of active learning activities and more on-task behavior in the classroom than were the low track groups. However, no differences were observed in the number of opportunities students had to direct classroom activity, to express opinion or to work cooperatively together. It seems clear that, in *all* types of classrooms, students were primarily passive participants. Indeed, there is little evidence in the data that the structure of learning activities was such in any track level that students participated in decision-making or in classroom or group leadership for any more than a small fraction of class time. However, high track students appear to have experienced more active involvement than others, even on this small scale.

Bowles and Gintis assert that it is through social relationships that the values and personality characteristics necessary for the maintenance of a capitalist society are produced in students. They posit that for students from the lower social strata—those seen as most likely to enter the manual labor force—school and classroom relationships are such that an acceptance of coercion and obedience to established authority are learned by students. On the other hand, for students from the upper social levels—those most expected to enter elite positions—relationships are such that students learn independence, internal control and affiliation with others.

It seems likely that the differences in relationships found in this study are such that they may contribute to the production of the differences in values and dispositions toward institutions posited by Bowles and Gintis. We cannot however, from this study, even begin to determine whether the difference in relationships found among track levels do "correspond" to those found at different occupational levels in the economic hierarchy. The findings here are merely consistent with the proposition that students from different socioeconomic positions appear to experience differences in their classroom relationships and type of involvement in learning activity. And, furthermore, these differences seem to be of the type that would lead students differentially either toward affiliation with an active involvement in social institutions or to alienation from and a more passive involvement with the institutions they encounter.

Do student self-concepts, aspirations and future plans, and attitudes toward the schooling experience vary with track level?

The multiple discriminant analysis performed on track level and student attitudes used ten discriminating variables in the analysis. Included were: three scales, each measuring a different aspect of students' self concept—general, academic and in relation to their peers; the mean class response to an item asking students what they will probably do in regard to education in the future and the mean class percentage of those who responded, "don't know" to this item about educational aspirations; items in which students' graded their schools, reported how much they liked the subject of their class and how important they perceived it to be; a scale measuring their general satisfaction with the class they were in; and an item in which students reported what they were learning as interesting or boring to them (see Table 1).

Significant differences were found among track levels on this set of variables as well. And the canonical R (.73) suggests a strong association between this set of variables and tracking. The correlations between the canonical discriminant function and the discriminating variables, shown in Table 5, indicate that the level of educational aspirations and academic and general self-concepts were those variables which appeared to contribute most to track level separation. Moreover, the following variables seemed of little importance in explaining track differences: students' general satisfaction with their class, their liking of the subject studied, their grading of the school, their perception of what they are learning as interesting or boring, their self-concepts in relationship to their peers, and their perception of the subject studied as important.

The group centroids obtained in the analysis

Table 5. Results of Discriminant Analysis of Tracked Classes on Student Attitude Variables*

Dependent Variables	Correlations Between Canonical Discriminant Function and Discriminating Variables: Function
Aspirations	.87
Academic Self-Concept	.63
General Self-Concept	.49
Peer Self-Concept	.25
Like subject	.23
Subject is Important	.22
Aspiration—Percent "Don't Know"	−.19
Grading of School	.18
Interesting/Boring	.16
Satisfaction Scale	.12
Discriminant Function Statistics	
Eigenvalue	1.16
Relative Percentage	100%
Canonical Correlation	.73
Group Centroids	
High Track	.98
Low Track	−1.16

* Significant differences between track levels on this set of variables were found—$\times^2 = 101.55$, $p < .001$ (10 df).

show considerable separation between track levels. The high track group had the higher mean score on the discriminant function and the low track group the lower. Substantively, we can infer from these scores on the discriminant functions that high track classes were more characterized by students with higher educational aspirations and more positive academic and general self-concepts than were the low. Specifically, it seems especially interesting to note the importance of track level differences in general self-concept. Not only did students report more positive self-perceptions in academic areas (e.g., I'm proud of my schoolwork and I'm good at math) but generally as well (e.g., I'm pretty sure of myself).[9]

Student satisfaction with their classes, subjects and schools did not vary systematically with track level. We can conclude then, that student attitudes clustered in high and low track levels in the following patterns: Students in high track classes had significantly more positive attitudes about *themselves* and had higher educational aspirations than did students in low track classes. However, students in the two track levels did not differ markedly in how much they liked English and mathematics or how important they believed these subjects to be. Neither did they differ significantly in the grades they gave their schools nor in the interest and satisfaction they expressed with the English and math classes that they were taking.

If there is a differential distribution of student attitudes, does it reflect the "legitimation of inequality" proposed by Bowles and Gintis?

The findings from this study show that student attitudes were distributed among track levels in ways that are consistent with the notion of the "legitimation of inequality." Classes in the high track group reported higher levels of educational aspirations. Consistent with these higher level educational plans were the more positive academic self-concepts reported by these high track students. Low track students, on the other hand, reported lower educational aspirations and more negative academic self-concepts. These differences attest to the existence of different expectations for their future roles in society among students in the two track levels. It is the patterns among the other variables, however, that are most consistent with the notion of legitimation. Importantly, students in low track classes expressed no less satisfaction with their schooling experiences than did high track students. They graded their schools as highly as students in the other track level. Generally, they said they liked their subjects as well and rated them at about the same level of importance as did high track students. Low track students were about as satisfied as the others with the classes they were in and regarded what they were learning to be as interesting as students in the high track. Nevertheless, low track students had more negative attitudes about themselves generally;

[9] The following items constituted the general self-concept scale:
At times I think I'm no good at all.
There are a lot of things about myself I'd change if I could.
Most people are better liked than I am.
I often feel like giving up when I can't do my schoolwork.
I'm pretty sure of myself.
Kids often pick on me.
I often wish I were someone else.
I get upset easily when I'm scolded.
Students responded to these items with the strength of their agreement or disagreement with each of the items on a four point scale. See Sirotnik (1979) for a full discussion of the development and psychometric analyses of this and other scales used in the study.

they were less likely than others to disagree that there were a lot of things about themselves they would change, that they were not as well liked as most people, and that at times they thought they were no good at all.

The juxtaposition of these three sets of attitudes among low track students points to a pattern of attitudes which would be likely to facilitate the legitimation of inequality. Students in low tracks had lower aspirations, felt more negative about themselves academically and expressed more feelings of general unworthiness than did students in higher classes. Yet, in judging their schools—imbued with hierarchical structures—and their classes—characterized by the more negative social relationships observed in this study—they reported the same levels of satisfaction as other students. We can only speculate, but it may be that low track students see themselves and their own inadequacies, not the hierarchical structure or differential treatment of the schools, as responsible for their current positions and future roles in the hierarchical structure. Furthermore, they appear to see the schools as acceptable as do students at the top, whose schooling experiences and attitudes about themselves and their futures are quite different.

Do the extent and direction of differences in student attitudes among track levels change with level of schooling?

Separate analyses were conducted for the 68 junior high and 71 senior high classes over the set of student attitude discriminating variables to determine whether track level difference differed at the two schooling levels. Additionally, the classification phase of the discriminant analysis was used in an attempt to discover any differences in the extent to which individual classes followed overall track level patterns at the two schooling levels.

Tables 6 and 7 include the results of the discriminant analyses at the two levels. Examining these tables, it is clear that while the substance of track level differences at the two levels were almost identical, the extent of the differences were considerably greater at the senior than at the junior high level. Both the size of the canonical correlations— .80 at the senior high and .74 at the junior high—and the separation of group centroids—greater at the senior high level—attest to the larger differences between track levels at the senior high schools.

Using the classification phase of the discriminant program, the range of differences among classes *within* track levels could be assessed. By reclassifying each class into a track level, based not on its known track level, but rather on its score on the discriminant function, it was determined what percentage of classes most closely followed the pattern indicated by the mean track level score (group centroid) on the function. The greater the percentage of classes reclassified correctly at each track level, the greater the consistency with which the dominant pattern was followed by individual classes. The results of the classification phase for high and low track classes on the student attitude variables at the two schooling levels are shown in Tables 8 and 9.

These results demonstrate that classes at the senior high school level conformed to the predominant track level patterns slightly more consistently than did classes at the junior high level. With 91.55 percent of the classes correctly reclassified at the high school level and 88.24 percent at the junior high level we can see this pattern across classes. This result is obtained, however, from the increased consistency among low track classes, with correct classification jumping from 84.4 percent at the junior high level to 96.8 percent at the senior

Table 6. Results of Discriminant Analysis of Tracked Senior High Classes on Student Attitude Variables*

	Correlations Between Canonical Discriminant Function and Discriminating Variables
Dependent Variables	Function
Aspirations	.86
Academic Self-Concept	.58
General Self-Concept	.51
Like Subject	.33
Subject is Important	.27
Peer Self-Concept	.26
Aspirations—Percent "Don't Know"	−.22
Grading of the School	.16
Interesting/Boring	.15
Satisfaction Scale	.09
Discriminant Function Statistics	
Eigenvalue	1.74
Relative Percentage	100%
Canonical Correlation	.80
Group Centroids	
High Track	1.14
Low Track	−1.47

* Significant differences between track levels on this set of variables were found—$\times^2 = 64.402$, $p < .001$ (10 df).

Table 7. Results of Discriminant Analysis of Tracked Junior High Classes on Student Attitude Variables*

Dependent Variables	Correlations Between Canonical Discriminant Function and Discriminating Variables Function
Aspirations	.70
Academic Self-Concept	.67
General Self-Concept	.43
Grading of School	.19
Peer Self-Concept	.15
Satisfaction Scale	.14
Interesting/Boring	.13
Subject is Important	.12
Aspiration—Percent "Don't Know"	−.11
Like Subject	.08
Discriminant Function Statistics	
Eigenvalue	1.19
Relative Percentage	100%
Canonical Correlation	.74
Group Centroids	
High Track	1.04
Low Track	−1.07

* Significant differences between track levels on this set of variables were found—$\times^2 = 47.860$, $p < .001$ (10 df).

high. It is clear that the pattern of student attitudes described by the discriminant function is quite consistent among classes at both levels. That this consistency increases at the senior high level indicates clearly that more low track students share these patterns of attitudes at this level than at the junior high level. Taken together with the discriminant function statistics we can speculate from these results that not only do low and high track classes, on the average, become more distinctly different on this student attitude dimension with years of schooling, but also that the dominant track patterns extend to more individuals as years of schooling increase.

Table 8. Classification by Discriminant Analysis of Tracked Junior High Classes on Student Attitude Dependent Variables

Actual Group	N of Classes	Predicted Track Membership: High	Low
High Track	35	32	3
		91.4%	8.6%
Low Track	33	5	28
		15.2%	84.8%

Percentage of classes correctly classified: 88.24%.

Table 9. Classification by Discriminant Analysis of Tracked Senior High Classes on Student Attitude Dependent Variables

Actual Group	N of Classes	Predicted Track Membership: High	Low
High Track	40	35	5
		87.5%	12.5%
Low Track	31	1	30
		3.2%	96.8%

Percentage of classes correctly classified: 91.55%.

If changes are evident, are the direction of these changes indicative of increased effects of differential socialization, i.e., the legitimation of inequality?

Th student attitude data, when analyzed separately for the two schooling levels, suggest that the differences high and low track students experience in their classes may contribute to the production of the differences in their attitudes. While it is likely that these attitude differences are reflective of class and status differences students bring with them from home, as Bowles and Gintis suggest, that these differences are greater and more consistently found at the senior high school level points to an active role of schools in formulating and reinforcing students' attitudes toward themselves, their future and toward schools. Of course, longitudinal data on individuals are necessary to confirm this apparent increase and causal models required for assessing the schools' contribution to the production of these greater differences. Nevertheless, the data presented here are strongly suggestive that schooling differences, i.e., classroom social relationships, result in a differential socialization of students having the effect of a "legitimation of inequality" posed by Bowles and Gintis. Further, this socialization process appears to intensify this legitimation with years of schooling.

CONCLUSIONS

The findings of this study clearly support the assertions concerning the kinds of differences that exist in the social relationships in different kinds of classes in schools posited by Bowles and Gintis and provide some empirical evidence for some of the effects of these differences. Additionally, both the similarities

and differences in attitudes reported by students in high and low track levels were those likely to exist if, indeed, the schooling differences they experience were seen by students as a consequence of their individual merit or lack of it and not resulting from any unfair practices on the part of schools. Further, that these attitude patterns are somewhat stronger and more consistently found at the senior high than the junior high levels, is consistent with the hypothesis that the differences in school experiences may be responsible, at least in part, for these student attitude differences.

If socioeconomic and racial groups were randomly distributed among track levels in schools, we might conclude, as it seems that most students must, that the school is essentially neutral, and one's position in it is dependent upon individual merit. However, both the literature in the field and the results of this study attest to the disproportionate distribution of societal groups into track levels. For this reason—and from the direction of differences evidenced here—we must suspect that school structures and processes contribute to societal inequities.

This paper began with the premise that, despite their well-developed hypothesis linking differences in school social relationships with socially important attitude outcome differences for students from various social classes, Bowles and Gintis present little evidence of actual classroom differences supporting their contention. The findings from the analysis of a comprehensive set of data collected for A Study of Schooling, presented in this paper, do, in fact, reveal differences in the social relations of classrooms that are consistent with the conditions Bowles and Gintis suggest would affect this differential socialization. The findings provided here are certainly necessary to argue that schools play a causal role in this socialization process. Yet largely due to the limitations of its design, this study cannot provide data sufficient to confirm this view. As such, and like most work, the findings are open to alternative interpretations. Nevertheless, these findings are important in that they provide a comprehensive description of conditions and outcomes Bowles and Gintis only suggest. To ignore them because they cannot confirm the causal hypothesis seems short-sighted. It is hoped that these findings and their interpretation will be provocative and that other studies using longitudinal data and causal modeling will follow in order to determine the extent of the role schools play in reinforcing and producing class related differences in students related to the hierarchical divisions of the political economy.

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THE EFFECTS OF TASK STRUCTURE ON BELIEFS ABOUT COMPETENCE AND PARTICIPATION IN SMALL GROUPS

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The effects of task structure on beliefs about competence and rates of participation in small groups is examined in this study. The Theory of Status Characteristics and Expectation States guided the design of the experiment. The theory predicts that information regarding one's ability relative to others on a given skill will generalize to novel situations and predict performance unless the irrelevance of the prior information is specifically acknowledged. The results confirm this theoretical prediction. In the control groups, knowledge of each other's relative reading ability generalized to performance on a task that did not require reading skill. In the treatment, groups skills were dissociated and participation rates did not reflect member's reading ability status. Higher participation rates by low ability readers did not adversely affect the quality of group decisions. The results suggest that one way to equalize participation among heterogeneous group members is through careful definition of the task.

Becoming a student and learning to live in a classroom involves mastering a complex set of skills. In his exploration of schooling as an agency of socialization, Dreeben (1968) points to the young student's need to: 1) learn to act alone, 2) perform against a standard of excellence, 3) acknowledge the rights of others, and 4) treat others as members of categories rather than as whole persons. These norms of independence, achievement, universalism, and specificity, he argues, are important additions to the child's repertoire not only because in learning them the school experience is negotiated more easily but because they are critical to success in technologically advanced societies. In an equally well-known examination, Jackson (1968) notes three features of schooling that even the youngest student must face: crowds, praise and power. Students spend more time in closer proximity to others in classrooms than in any other setting. Thus, while they are learning to act alone, they also must learn to do it in the unbroken presence of others. A second feature of the classroom is the constancy of evaluation. At almost any moment the student can become the target of praise or of reproach by others; thus, confronting constant and public scrutiny is unavoidable. The third aspect highlighted by Jackson focuses on the student's need to learn to accept the sharp distinction in authority between teachers and students.

Ethnographic studies of children in classrooms detail the complexities of school life further. In a study designed to discover the sources of school failure among Warm Springs Indian children, Philips (1972) observed qual-

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