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ABSTRACT

The focus of this inquiry is on the commitment students have to academic achievement. The model on which this analysis is based assumes that student effort in school is the product of several factors relating to parental influences, classroom structure, teacher behavior and peer norms and characteristics. In assessing the possibility of a linkage between school desegregation and achievement a set of student attitudes which reflect commitment to learning are measured and analyzed. The methodolcgy through which the data here are developed and organized was developed as part of a larger study of how children acquire attitudes and values that might have political consequences. The methodology has six components: a procedure for categorical observation of teacher-student interaction, a sociogram-type map of the classroom and student teacher relationships, a checklist type assessment by observers of various aspects of classroom structure or climate, an extensive student questionnaire, a teacher questionnaire, and content analysis of relevant learning materials. This paper relies most heavily on the questicnnaire data. Seventy-nine North Carolina fifth grade classrooms participated in the study. (Author/JM)

TEACHERS, CLASSROOMS, AND THE EFFECTS OF SCHOOL DESEGREGATION ON EFFORT IN SCHOOL: A "SECOND GENERATION" STUDY

by

WILLIS D. HAWLEY

Prepared for and with the assistance of the Desegregation Studies Unit of the National Institute of Education.

INSTITUTE OF POLICY SCIENCES AND PUBLIC AFFAIRS

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INTRODUCTION

In the generation since the Supreme Court outlawed public policies that separated black and white children in schools, the hopes of those seeking an end to social inequality caused by discrimination and interracial hostility seem to have faded. While public opinion polls show dramatic reductions in interracial hostility over the last 20 years, and while the so-called "mark of oppression" that allegedly damaged the psychological well-being of blacks cannot be found by researchers, it is not clear what the contributions of school desegregation have been to these developments. Though the evidence is mixed, it appears that children who go to school with substantial (but, perhaps, not overwhelming) numbers of children of a different race, have somewhat more sophisticated and more positive images of the other race than do children with minimal or no interracial contact. Similarly, those who have seen desegregation as

*The general research upon which this paper is based has been supported by a grant from the Spencer Foundation. This particular analysis was made possible by National Institute of Education. Neither the Spencer Foundation nor the N.I.E. is responsible for the substance of the conclusions reached by the author.

a source of improved educational attainment by minorities have found little solace in the available research.

To be sure, the research on the effects of school desegregation is by no means conclusive, but we now know enough to dismiss the notion that the simple mixing of the races in a school will bring an end to racial discrimination and its consequences. Concern has moved, therefore, from school desegregation to "true integration" where students are mixed at the classroom level, opportunity for interracial interaction is maximized, discrimination against students on the basis of race is eliminated and the strengths and weakness of individual students are dealt by teachers without regard to skin color. We are, then, into a "second generation" of awareness that what actually happens in the schools and -- perhaps most importantly -- in classrooms, determines whether the schools can play a more significant role in ending the racial bases of social inequality.

Despite considerable agreement among educators and social scientists that schools and teacher shape the values and attitudes children have, there is almost no satisfactory empirical research on these matters. And what little evidence we do have is not very definitive.

This paper seeks to shed some light on how the character of children's classroom experiences affect the interest given and investment made by children to academic performance in desegregated schools. It is a "first cut" at a substantial body of data much of which allows one to address some important issues that have not previously been subjected to empirical research. Subsequent analyses will examine in more detail than present objectives and space permits such questions as the effects of classroom experiences on the acquisition of values related to tolerance of social

and political differences and, in general, the development of commitment to various aspects of the "democratic creed."

SCHOOL DESEGREGATION AND STUDENT ACHIEVEMENT: HYPOTHESES AND THE ANALYTICAL MODEL

As I have argued elsewhere, the theoretical basis for the notion that school desegregation will contribute to improved academic achievement among minorities is not well developed in the literature.* From extensive reading of the research and speculation, however, one might derive three general hypotheses which seem to have some basis in theory or evidence.

First, racial desegregation brings students with relatively low commitment to learning and low academic aspirations into contact with peers with higher aspirations and greater interest in doing well in school. The latter act as models and/or establish peer - group norms that motivate low achievers to higher attainment.

Second, teachers in desegregated schools will hold higher aspirations for minority students either because they are more likely to avoid stereotypes and discriminatory behavior or because they establish or reinforce classroom norms of high achievement in response to the perceived model capacity of white or middle-class students to achieve. This hypothesis is, in effect, a variant of the so-called pygmalion theory: i.e. that teacher expectations influence student performance, and holds that such expectations are usually higher in desegregated schools.

A third hypothesis concerning the possible link between school desegregation and academic achievement sees improved race relations as the source of achievement. The dominant version of this perspective holds that desegregation reduces the hostility minorities experience and the stigma

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*Willis D. Hawley and Ray C. Rist, "On the Future Implementation of School Desegregation: Some Consideration", Law and Contemporary Problems 39 (Spring 1975) 412-426.

they perceive which, in turn, increases their aspirations and self-confidence which, in turn, lead to more positive attitudes toward school.

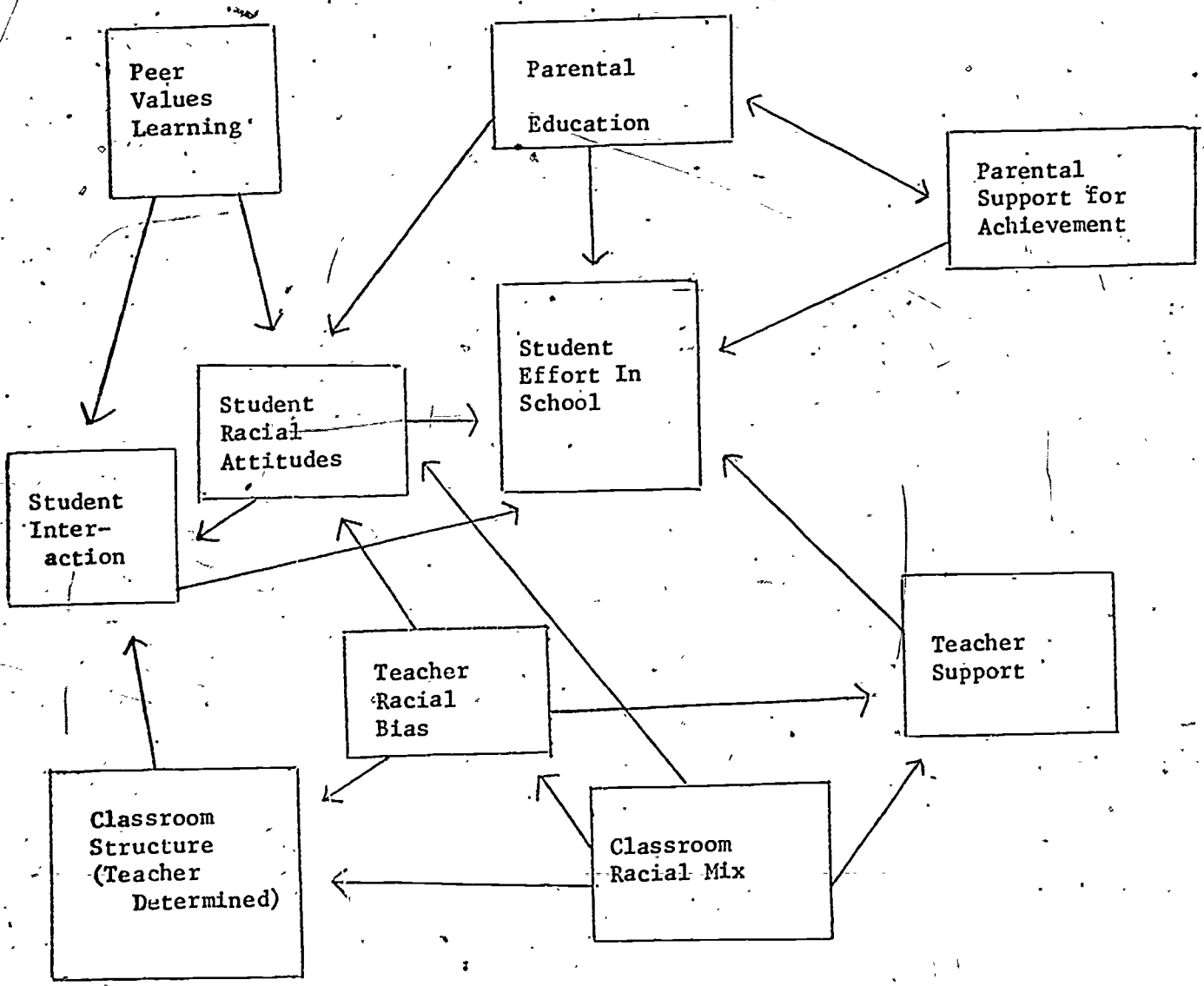
The focus of this inquiry, then, is the commitment students have to academic achievement and as it proceeds, each of these three general hypotheses on the consequences of desegregation will be addressed. The model upon which this analysis is based assumes that student effort in school is the product of several factors relating to parental influences, classroom structure, teacher behavior and peer norms and characteristics. It incorporates various aspects of the following factors:

- Parental Support of School
- Parents' Education
- Racial Mix of the Classroom
- Classmates' Achievement Norms
- Student Interaction
- Degree of Teacher Support
- Extent of Racial Discrimination by Teachers
- Classmates' Racial Attitudes

The interrelationships to be examined are summarized in Diagram I.

Diagram I.

Analytical Model for Assessing the Effects of School Desegregation on Student Academic Effort



This model and its assumptions are elaborated as the data are engaged.

Obviously, the model postulated here is complex and does not lend itself to simple analysis. The evidence from this study will allow some simplification but much of the justification for this research is that it seeks to bring attention to the complicated relationships between several processes and conditions whose interactive and cumulative effects must be understood if classrooms are to be places in which social objectives are to be attained. No single study, and certainly not this one, will resolve the several issues and questions implicit in that imperative.

Student Effort in School: The Dependent Variable

In assessing the possibility of a linkage between school desegregation and achievement, I will be looking not at test scores or other direct measures of achievement but at a set of student attitudes which reflect commitment to learning. As I've implied, any theoretical explanation of a relationship between school desegregation and achievement depends on the effects the former has on affective rather than cognitive aspects of the learning process. If desegregation increases the achievement of minorities it is because minority students in desegregated schools develop more positive attitudes toward learning.

Indeed, it seems reasonable to assume that when standardized tests are used to assess student progress, the measured effects of desegregation on achievement are influenced by the intellectual ability of students. And, since this factor is difficult to measure, previous studies may have understated the importance of desegregation on achievement.

Student commitment to learning is measured by a five item scale which includes likert-type responses (a five point range of response) to such questions as "Do you do your best in school?" and, "Even though I

don't like some subjects, I still work hard to make a good grade"*

The black and white students participating in the study do differ in their commitment to working hard in school. Student scores on the school effort scale could range from 5 to 25 and the lower the scale the greater the effort in school. The overall average score was 9.60. The mean score for blacks, who comprise about 25 percent of the sample, was 10.13 and the mean score for whites was 9.39. The likelihood that a difference of this magnitude would occur by chance is less than five in 1000. In any case, student effort in school varies substantially over the 2142 students in the sample and from classroom to classroom. It is these variations rather than the differences among all blacks and all whites that will be of concern here.

*The scale items were developed by the North Carolina State Department of Public Instruction in consulcation with the Research Triangle Institute. It is reproduced in Appendix D. The scale's reliability in this present study is high (.68 measured by Cronbach's alpha coefficient).

Data and Methodology

The central methodological shortcomings of existing research on the role of teachers in shaping political values and attitudes toward learning have to do with the neglect or inadequate treatment of key independent variables, to wit: teacher behavior and classroom environments. The methodology through which the data here are developed and organized was developed as part of a larger study of how children acquire attitudes and values that might have political consequences.

I call this methodology the Assessment of Classroom Political Environments (ACPE).* (I propose to describe it at some length here because it is unique. The reader may wish to skip ahead to page 14 where the sample and data are described.) The system has six components all of which serve to reinforce each other in parts: (1) a procedure for "categorical observation" of teacher-student interaction (2) a sociogram-type map of the classroom and student-teacher relationships (3) a check list-type assessment by observers of various aspects of classroom structure or climate (4) an extensive student questionnaire read to students in the absence of teachers or other school personnel (5) a teacher questionnaire and (6) content analysis of relevant learning materials (texts, etc.). This paper draws on some aspects of each element of the ACPE system, but relies most heavily on the questionnaire data. Subsequent reports will more fully exploit the full range of data the system yields.

Student Teacher Interaction Measure. Part of the recent progress in research relating to teaching effectiveness has been due to developments in the techniques for analyzing classroom interaction. There are now more than 100 instruments for assessing teacher-student

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* iam Cunningham provided substantial assistance in the development of techniques and supervised the field work through which the data were gathered.

behavior in classrooms and most were developed for research concerned with the direct effects of teacher behavior on pupil learning. The scheme for recording student-teacher interaction used in this study is a modification of the widely used classroom observation system developed by Ned Flanders* and is called the "Politically Revelant Interactions Measure" (PRIM).

Any classification scheme must focus on certain dimensions of behavior and ignore others. PRIM concentrates less on formal teaching than on behaviors that reflect the authority structure and general sociopolitical climate of the classroom. To implement the system, a carefully trained observer classifies the predominant teaching-learning behavior that is occurring at any given time in the classroom as being most accurately described by one of fourteen possible types of activity. Observers tally the coded behavior in a column, preserving their sequence at the rate of twenty tallies per minute. (While this seems difficult at first consideration, after their training period the observers found no difficulty in recording at this rate. The categories became almost as familiar to them as colors). These numbers can then be entered into a matrix which will provide summary information about the type, sequence and amount of verbal behavior which has been recorded. Specific types of behavior described by this procedure relevant to this paper are outlined in the analytical sections below.

Three observers, all trained elementary school teachers, observed each classroom on three separate occasions over a two month period. Each observer worked in the same classroom on all three assessments and administered the student and teacher questionnaire on a fourth visit.

*Cf. Ned A. Flanders, Analyzing Teacher Behavior (Readings, Mass: Addison-Wesley Publishing Co., 1970)

The PRIM system seems characterized by a high degree of reliability among the three observers describing the same classroom and for the same observer describing the same classroom environment at three different points in time.* This instrument seems to focus on characteristics of the classroom environment which remain relatively stable over time. Attention was given to assure that the lessons observed dealt with social studies or a closely related topic (such as literature) to minimize variability in teacher behavior due to different topics being taught. Presumably some teachers would teach math differently than social studies and it seems very likely that the constancy of the interaction patterns we perceived from observation to observation does not chacterize the classroom environment all of the time. More observations are desirable and it would be interesting to know what factors account for variations in the dominant interaction pattern. The limited time we spent in each classroom is, nevertheless, the most extensive systematic record of teacher behavior and classroom structure employed in a large-scale study of political socialization.**

Sociogram. In order to better describe the complexity of interaction, a classroom sociogram was developed as the second component in the ACPE system. The sociogram focuses on the physical layout of the class, the degree to which members are physically and/or verbally isolated from the dominant interaction pattern, the degree of sexual and racial integration within the class, the major direction of both teachers' and pupils' direct verbal interaction, teachers' discipline attempts, and the nature of physical movement.

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*See Appendix A for a description of the procedures and criteria used for establishing reliability.

**See Appendix B for a more detailed description of the PRIM instrument.

To my knowledge, this procedure is unique. It requires the observer to draw a physical map of the classroom coding the race and sex of the students. Interaction patterns between particular subgroups or between teachers and particular students or groups are shown by arrows. Recurrent interaction in the same path is shown by marking the arrow accordingly and the content of the interaction is distinguished if it involves a disciplinary action or not. In addition seating patterns, special facilities, displays, etc., are noted on the classroom map. (A more detailed description is provided in Appendix C.)

Observer's Record A third element of the ACPE system is a checklist completed by observers which seeks to provide a description of dominant classroom characteristics. This device is seen as supplementary to the others, a way of resolving ambiguities and of providing information regarding the degree to which certain activities, features or conditions are present. Like the other instruments, some of the phenomena measured can be conceptualized as either independent or dependent variables depending on the specific concern of the researchers. It is completed after the observer has been in the classroom for at least one hour and is utilized on at least three separate occasions. Among the matters covered by the instrument are: teacher attention to individuals vs. the class as a whole; interaction among students of different sexes and races; politically relevant displays or symbols; degree and character of student interaction and movement; teacher style or mood; dominant student style or mood; physical character of classroom; opportunities for student directed inquiry and learning (materials, student movement; learning centers, child to child teaching, etc.). In addition, the observer records such information as the texts and related social studies materials used, and non-conventional arrangements such as whether the classroom is multi-aged, team teaching is used, or teacher aides are present.

The Student Questionnaire The measures of politically relevant student-teacher interaction and classroom climates are augmented and complemented by student perceptions of teacher behavior and classroom structure. Of course, it is what students see and internalize rather than objective reality that affects learning. At the same time, it is possible that student perceptions of such teacher traits as openness, responsiveness, and fairness are likely to be influenced by students' prior levels of cynacism, trust of authority, and similar predispositions. Similarly, students with high levels of efficacy -- political or otherwise -- may well be more likely to see classrooms as providing opportunities for open discussion or the presentations of divergent views. Our observers' characterizations of student-teacher interaction and the classroom environment provide the type of evidence one would need to sort out the direction of influence. (As noted above, subsequent reports on this research will engage such issues in considerable detail.)

Some of the items utilized in this study were developed by the author. Others were taken from a study of some 12,000 North Carolina sixth graders conducted as part of the state's assessment of its educational programs. A number of questions, including many of those which play a central role in this study, were developed by Judith Torney and her associates as part of the recent multinational study conducted under the auspices of the International Education Association.*

Content Analysis of Learning Materials Each of the texts and supplementary publications utilized regularly in the classroom studied were examined to determine if they treated racial issues differently. Since North Carolina has state-approved textbooks and curriculum guidelines there was not much

*We are grateful to the IEA for permission to utilize several scales from its questionnaires.

variation in the materials utilized. Our analysis indicated that the quantity and quality (character) of race related matters dealt with does not vary significantly from classroom to classroom. This conclusion is admittedly subjective since no formal quantification was undertaken.

Teacher Questionnaire

Teachers were asked to complete a questionnaire while the students completed theirs, but in another room. One hundred percent of the teachers responded. Many questions on the instrument were developed by the authors to match many those in the student questionnaire and some items were taken from the International Education Association's study of political socialization.

The Sample

We observed and administered questionnaires in 79 North Carolina fifth grade classrooms. We utilized a random sampling procedure stratified by race, family income, and "urbanness" of residence. Resource constraints limited this inquiry to North Carolina schools but to facilitate its utility to policy makers and scholars elsewhere the coastal and mountain regions of the state --- both of which have destinctive cultural traditions and somewhat unique socioeconomic characteristics --- were excluded from the study. Two cities -- Chapel Hill and Raleigh -- were consciously excluded.* Only one school to which we sought entry denied us access. There are 2,142 students in the sample. Questionnaires were read aloud, with the teacher absent, and were administered by observers who had been in that classroom at least three previous times.

The fifth grade was selected because other research suggests that ages

*Chapel Hill is the home of one of the country's most prestigious state universities and Raleigh is not only heavily populated by state employees, but is the site of a number of colleges and universities.

10-12 is an important period in the development of political attitudes and because most students have relatively intensive contact with only one teacher through the sixth grade. (The questionnaires have been administered to the sample and their teachers as they completed the sixth grade, but those data are not employed here.) Once children enter junior high school, they may have seven to twelve different teachers in a given year and tracing the linkages between teacher behavior and student attitudes and beliefs becomes very difficult indeed. As I noted, we studied "open classrooms', multi-aging and other variations on the self-contained classroom but in every case students spent the bulk of their day with one professional teacher who they would identify as their teacher.

All the school systems studied profess to pursuing the goal of desegregation. There are no all black classrooms - though there are two all white classrooms in the study - and we were advised that children were assigned to classrooms without regard to their intellectual capacity or socioeconomic status. Many classrooms were internally organized by ability at least for some subjects. I do not, however, treat ability grouping as a potential explanatory variable because it proved so difficult to capture. Some teachers who used ability grouping did so for only one subject, some who used it for more than one subject took account of the fact that student abilities differ from subject to subject, and in some classrooms where the teachers allowed students considerable freedom, students seemed to group themselves by ability. Moreover, we had no objective measure of student ability and taking the teacher's word for her or his practice appeared unwarrented in some cases.

PARENTAL SUPPORT FOR ACHIEVEMENT: THE ANTECEDENT VARIABLE

Students bring with them to school many of the values their parents hold. In order to understand the impact that schools, and desegregation in particular, might have on student motivation to achieve, we need first to establish the extent to which parents encourage and support achievement and whether such encouragement predicts student effort. I measure such parental influence by assessing each student's perception of the extent to which their parents care about how well they do and assist them in bettering their achievement. Thus, students were asked a series of questions which I will call the Parental Support of Schoolwork Scale. This scale is comprised of eight items and has reasonably good reliability (.59 as measured by Cronbach's alpha coefficient). The scale includes questions like: "Do your parents ask you about how well you did on your assignments?" and, "How often do your parents help you with your school assignments?" The entire scale is described in Appendix D as Student Scale Eight.

There are, of course, ways other than assessments of parental support for school work to measure parental impact on achievement. These include parents' educational level or socioeconomic status. It is not clear, however, what these "objective" measures mean. Most often, researchers suggest that they reflect the emphasis on and support for student achievement by parents. If so, it seems better to measure such emphasis and support more directly. For the students in this study, the relationship between parental education and parental support for achievement in school is very weak ($r = .11$).

Educational level <u>may</u> say something about the <u>ability</u> of parents to help their children though the importance of differences of this sort for achievement is probably more important at junior and senior high schools than it is for the fifth graders in this study. As noted, I cannot measure

achievement directly but it seems worth noting that once parental support for student effort is taken into account, parental educational background contributes nothing to our capacity to explain (predict) student scores on the school effort scale.* Differences in income levels of the family may be related to differences in the time parents have to spend with children and to participate in school activities. It is by no means clear that this not uncommon assumption is supported by good evidence. In any case, the parental support scale includes student perceptions of the time parents spend with the student that is school related as well as items dealing with parental interest in the school itself. In this study, black and white students, even though black parents are generally less well educated than white parents, do not differ substantially in their response to specific questions like, "How often do your parents help you with school assignments", and "Do your parents visit the school for PTA or Parents day." **

Parental support for schoolwork is correlated positively with student effort in school but the relationship is surprisingly weak. The product moment correlation between these two variables is .31. Thus, parental support for school, at least as I've measured it, accounts for just under 10 percent of the variance in students' reported interest in achievement. It appears, then, that a number of other factors must influence student motivation in school. The question is: are any of these related to racial integration?

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*The measure of educational attainment of parents utilized here is the students report on each parent from among five categories of choices of educational level. This is a weak measure. Students were given a chance to say they did not know. About 28 percent chose this option. How representative those who responded are of this sample is not known.

**White parents are most likely to visit the school often though more whites than blacks say their parents almost never do. There is little difference in the proportion of blacks and whites receiving frequent assistance with schoolwork though more blacks than whites are likely to experience almost no parental support.

RACIAL COMPOSITION OF THE CLASSROOM AND STUDENT EFFORT IN SCHOOL

Much of the research on the effects of desegregation on achievement has treated the proportion of whites in the school or classroom as the potential determinant of increased school achievement. While I can see no theoretical reason why racial mix in itself would directly influence school achievement, the issue must be addressed.

Looking first at the simple relationship between student effort in school and the proportion of whites in the classroom one sees an insignificant product moment correlation (r) -.04. When such correlations are developed for black and white students separately, the coefficients are similarly insignificant. In short, the racial composition of a student's classroom does not appear to be directly associated with that individual's motivation to achieve.* But, perhaps the effects of racial mix are not linear. And since it was found that parental support is related to student effort, before dismissing the notion that the racial composition of the classroom, taken by itself, influences student effort in school, it is appropropriate to extend the analysis so as to control for parental influence. As Table I shows, even when this consideration is taken into account, knowing the proportion of whites tells us little about student effort. There is a pattern to the data that suggests black students are more motivated in classrooms that are 75 - 50 percent white rather than predominately white or majority black settings. But these inferences are problematic given the small size of the differences in student reports of effort in school.

*One more piece of evidence on this is that the introduction (not shown here) of racial composition of the student's classroom to the multiple regression equation described in Table II below reduces none of the unexplained variance in student effort.

Table I

Effects of Racial Composition of Classroom
and Parental Support on Student Effort in School
As measured by comparison of means (Low Score = Greatest Effort)

Level of Parental Support	High (top third)		Medium		Low (Low third)	
Student Race	Black	White	Black	White	Black	White
Percent <50	7.84	7.88	9.78	9.31	11.44	9.71
White 75-50	7.73	8.60	9.75	8.50	10.83	10.00
in Class >75	8.44	8.17	10.05	9.21	11.27	10.25

None of the column differences are statistically significant.

Table II looks at the relationship between the racial mix of a classroom and student effort controlling for parental support and student race through multiple regression procedures. Again, no relationship is found.

Table II

Effects of Racial Composition of Classroom and
Parental Support on Student Effort in School
As Measured by Multiple Regression Analysis

	Multiple R	R^2 Change	B (Standard Error)
Parental Support	.3120	.0973	.1489 (.0136)
Proportion Whites in classroom	.3133	.0008	.0065 (.0042)

Before leaving the data in Table I, however, three potentially interesting phenomena might be noted. First, when high levels of parental support exist, the level of effort among black students may be lowest in overwhelmingly white classrooms. Second, at high levels of parental support the black level of effort in school -- which is about 95 percent of the white student effort overall -- is actually higher than that of whites.

Given the small number of black students receiving the highest level of parental support and the relatively small differences between the cells, it would be inappropriate to make too much of these observations. But, taken together they may suggest (among other things) that strategies for increasing black parental support of their children's school effort might have real payoffs whether or not school desegregation is possible.

A third speculation that one might make looking at Table I is that whites with low levels of parental support actually seem to manifest more effort the more blacks there are in their classrooms. Again the differences are small but there is a suggestion here that whites with lower parental support benefit from school desegregation. If this is so, perhaps it is because white teachers (90% of the teachers are white) are more sympathetic to low achieving whites in such settings or because white students with low parental support feel less competitive in the presence of black peers than in the presence of whites. The latter case may be an example of how racial stereotypes function to benefit the majority.

The data thus far do not provide a basis for dismissing the possibility that desegregation will positively influence student effort in school. They do suggest that simply putting children of different races in the same classroom will not affect their interest in learning. The data give support to those who argue that we need to be concerned about what goes on in classrooms in order to understand whether the alleged benefits of desegregation can be realized.

THE INFLUENCE OF CLASSROOM ACHIEVEMENT NORMS

I suggested earlier that if the racial composition of a classroom affects attitudes toward achievement of blacks, one likely reason is because white children bring with them to the classroom parental values which, presumably, they transmit to blacks. This possibility can be tested more directly by examining the impact on individuals of the dispositions of their classmates.

Each student is given a score for peer effort in school based on the mean score on the student effort scale for his or her class. Such a score is also derived for the student's black and white classmates respectively. Of course, most students probably take cues from some but not all of their classmates. The group norms that are most powerful in shaping behavior are those of peers with whom one enjoys regular and friendly contact and not all of one's classmates fit this description. The procedure used here for assessing peer effort is, therefore, likely to result in understating peer influence. The data in Table III indicate that peer environment has a pronounced affect on the effort of individuals when both parental support and racial mix are controlled.

Table III

Combined Effects of Parental Support, Racial Mix and Peer Motivation on Student Effort in School -- All Students

	Multiple R	R Square Change	Regression Coefficient
Parental Support	.3120	.0973	.2117 (.0144)
White Percentage in Class	.3133	.0008	.0056 (.0041)
Peer Environment	.4299	.0867	.9204 (.0627)

Table IV

Combined Effects of Parental Support, Racial Mix and Peer Motivation on Student Effort -- By Race

	Race of Student	Multiple R	R^2 Change	Regression Coefficient
Parental Support	Black	.3632	.1319	.1698 (.0245)
	White	.2799	.0783	.1897 (.0168)
White Percentage in Class	Black	.3645	.0010	.0061 (.0070)
	White	.2804	.0003	.0105 (.0059)
Peer Environment	Black	.5045	.1216	.9712 (.1023)
	White	.3897	.0720	.8968 (.0800)

If separate regression analyses are run for blacks and whites it is clear, as Table IV indicates, that peer environment plays a significantly greater role in influencing the school effort of blacks than of whites. It is not clear why this is so but it is suggestive. To the extent that racial integration increases the level of peer motivation to which blacks are exposed in a given school system, it will lower the mean level of peer effort which whites experience. But blacks are more dependent on peer group environment. Perhaps this is one reason why there is so little evidence that the achievement of whites -- at least as long as they stay in the majority -- is adversely affected by racial desegregation.*

Let me extend this analysis still further by examining the impact of racial peers within the same classroom on the motivation of individuals. As Table V shows, for black students, the "quality" of the motivation of their black peers is a substantially greater contributor to their own dispositions toward academic achievement than is the motivation of their white classmates. This is not surprising. The classmates one is most likely to model one's behavior on are those one identified and associates with. Blacks are more likely to have friendships with other blacks than with whites and, we might assume, find it more appropriate to emulate other blacks rather than their white classmates. This is true, of course, for whites as well. (To say this is not to imply that either group of students is intolerant or racist).

*Meyer Weinberg, "The Relationship Between School Desegregation and Academic Achievement: A Renew of the Research," Law and Contemporary Problems 39 (Spring 1975) pp. 240-270; and Nancy St. Johns, School Desegregation Outcomes for Children (New York: John Wiley, 1975).

TABLE V

Regression Coefficients Indicating Effects of The Values of Racial Peers on Student Effort Once Parental Support is taken into Account

	Black Students (N=569)	White Students (N=1522)
Parental Support	.2325 (.0249)	.1874 (.0164)
Mean Effort of Black Classmates	.8821 (.0690)	.0261 (.0332)
Mean Effort of White Classmates	.4627 (.0989)	.9570 (.0767)
Variance in Effort Explained by Black Classmates' Effort After Parental Support	Change in R^2 = .1927	Change in R^2 = .0004
Variance in Effort Explained by White Classmates' Effort After Parental Support	Change in R^2 = .0320	Change in R^2 = .0854

Table V again confirms the relatively greater importance to the motivation of blacks as compared to whites, of peer group effort in school. It is interesting to note that motivation of their white peers does apparently influence the amount of school effort blacks report but that the reverse is not true. This may be because whites dismiss blacks as referents or because in particular classrooms blacks collectively seldom exceed the average motivation level of whites. The data do not lend themselves to testing these alternatives.

Since the racial mix in the classroom has little relationship in itself to student motivation to learn -- a point confirmed again by Tables III and IV -- the question remains: does school desegregation have consequences for the effects of peer group environments?

There are two ways to answer that question. The first concerns the correlation between students' dispositions toward working hard in school and their race. To the extent that desegregation gives minority children (black or white) greater exposure to students with greater motivation to achieve, desegregation will increase the effort such minority children expend. In this sample of children, the relationship between the percent white in a classroom and the average peer group effort is inconsequential.* But this relationship in other settings may be more substantial. There is no reason to believe that a person's skin color determines their interest in school. Such motivation derives from the cultural traditions of given families, parental education or socioeconomic conditions. There is absolutely no evidence that blacks, for example, place less value on academic achievement than do whites of similar social background. In short, the effects of racial desegregation on the effort children give to learning seem to depend on

*The product moment correlation between the proportion of one's classmates that is white and one's level of effort in school is .16. And, while the students in classrooms that are 60 percent or more black report less effort than students in other classes, students in predominately white classes report less effort than those whose classmates are between 40 - 60 percent white.

the values classmates have, not their race. The recognition that students are more likely to be influenced by values held by classmates of their own race has potential consequence for pupil assignment policies and suggests that strict racial "balance" quotas for each school may be inappropriate and that criteria other than race need to be considered in racial desegregation plans -- at least if increasing student effort in school is one of the objectives desegregation seeks to attain.

A second response to the question of whether school desegregation can have consequences for the effects of peer environment on learning is that it depends on what is done once children with lower motivation are placed in the same schools and classrooms with students with higher motivation. Which brings us to the next step in this analysis, namely, whether classroom structure and milieu affect the impact peers have on student effort.

Patterns of Classroom Interaction

We would expect classroom achievement norms to have greatest effect where students interact most with each other. Not only are students in more interactive settings more likely to know what their cohorts believe (and thus the norms are more likely to be understood) but social sanctions for noncompliance with these norms are both more possible to invoke and more costly to the noncomplying individual.

Effects of Racial Composition on Student Interaction

Some critics of desegregation have argued that desegregation complicates the job of the teacher and that in order to "manage" their classroom teachers often respond by constraining student initiatives and interaction. The data from this study, however, show no relationship between the racial composition of the classroom and students' perceptions of the opportunities to work with others (see scale seven in Appendix D) or the student's sense that they can make decisions about how to spend their time and raise questions about what is going on in class (see scale ten in Appendix D). This absence of a relationship between the likelihood of student interaction and the racial mix in the classroom holds when the correlations between these variables are examined for black and white students separately.

Similarly, direct observations of teacher behavior by the research team show no relationship between teacher efforts to control the classroom and the racial composition of the classroom.

Finally, teachers' own reports of the extent to which they allow and encourage student interaction (see Teacher Scale 8, Appendix D) seem unrelated to the racial mix in the classroom though there may be a slight tendency on the part of teachers to allow or encourage more interaction in predominately black classrooms.

The one type of student interaction we would expect to be correlated with the racial mix of the classroom is interracial contact. Students were asked to select from a five point measure how often black and white students in their class (1) "play together at recess" and (2) "work together on projects the teacher gives us". The "score" for these two questions, the answers to which are highly correlated, were summed to establish a measure of racial contact. Note that this measure does not tell us about the proportion of students involved in interracial contact. Instead it deals with the issue of whether members of one race have contact with at least some members of the other.

Table VI demonstrates that interracial contact seems not to be systematically related to the proportion of blacks in the classroom. Even though the greatest probability of such contact exists for classrooms that are 41-60 percent black, students in these classrooms have slightly less contact then those in classes with less even mixes of blacks and whites. The differences in the cells of the table are small but it is interesting to speculate on why interracial contact seems greatest where the proportion of whites is smallest (though only one classroom in the 0-40 percent weight category is less than 20 percent white. We will see that blacks are no more tolerant of whites than whites are of blacks. Perhaps blacks feel freer when in the majority to seek out white playmates and persons with which to work.

Table VI

Percent White in Classroom and Frequency of Interracial Contact (Low Scores = High Contact)

	Percent Whites in Classroom			
Frequency of Interracial Contact	0 - 40	41 - 60	61 - 80	81 - 100
	3.39 (192)	3.76 (314)	3.67 (855)	4.07 (760)

The measure of interracial contact utilized here is not a particularly strong one, and it would be inappropriate to draw too much from this finding.

In summary, regardless of the way student interaction is measured or whether it is assessed by teachers, students or observers, the volume of interaction is not affected by the proportion of whites and blacks in a classroom. This does not mean that another group of teachers will react the same way to racial integration* or that the degree of interaction students experience cannot be manipulated by teachers. Let me turn, then, to the question of whether interaction of various types enhances the impact of group norms on a student's motivation to do well in school.

Effects of Classroom Interaction on Student Effort

Even though the amount of student interaction is not shaped by racial mix, classrooms do vary substantially in the extent of interpersonal contact the students in them have. I have hypothesized that the effects of the peer environment will vary with the amount of student interaction. If the hypothesis is borne out, it would have significant policy implications for those who want to maximize the liklihood that desegregation will benefit blacks.

When measures of student interaction based on data provided by teachers or collected by classroom observers are correlated with student effort in school is examined, no significant increase or decrease in the effects of peer environment on student effort is found.

*Almost none of the classrooms in the sample were experiencing school integration for the first time. It may be that in the initial period of desegregation students and teachers experience anxiety and tension to which they respond by constraining, formally or informally, student interaction.

For example, in administering the Politically Relevant Interaction Measure, observers could describe the character of classroom events in fourteen different ways. Six of these involve teacher dominance of classroom events (lecturing, asking factual questions, insisting on authority etc.). The amount of time spent in these six modes of interaction can be summed to create a score for each classroom reflecting the constraint on student interaction. While classrooms do vary in the extent to which they are constrained, this variation, as Table VII indicates, is not related to variations in student effort at different levels of peer group effort in school.

Table VII

Effects of the Degree to Which Classrooms are "Constrained" On Student Effort in Classrooms Controlling for Peer Group Support

		Classroom Constraint		
		Lo	Med.	High
Peer Group Support for Effort	Hi	8.42 (292)	8.44 (249)	8.51 (131)
	Med.	9.53 (255)	9.69 (164)	9.56 (239)
	Lo	10.67 (941)	11.37 (225)	10.61 (221)

Further, the regression coefficient for the classroom constraint variable is not statistically significant.

Turning from these measures of student interaction to student perceptions of interactions with peers, a different picture emerges and the hypotheses being tested tends to be confirmed. First, consider students' reports of their "opportunity to work with others". Students were asked five questions such as, "Are there times your teacher lets you work in small groups?" and, "Does your teacher have you help each other in class." The responses to these questions create an interaction score for each student (see Scale 7 in Appendix D).

Table VIII shows the relationship between different levels of opportunity to work with others and student effort in school.

Table VIII

Effects of Opportunity to Work With Others on Black and White Student Effort at Different Levels of Peer Motivation (Low Score = Great Effort)

Opportunity to work with others		Peer group Effort in School: Hi	Med	Low
Hi	Black	8.18 (109)	10.02 (46)	11.86 (36)
	White	7.90 (290)	8.49 (126)	9.77 (77)
Med	Black	9.08 (89)	10.39 (41)	11.39 (36)
	White	8.54 (228)	10.20 (100)	10.40 (86)
Low	Black	9.83 (76)	10.95 (40)	12.63 (62)
	White	9.60 (235)	10.67 (113)	11.84 (124)

As the data show, children in classrooms where more student interaction takes place work hardest in school regardless of the level of peer motivation. This is true for both black and white students but blacks seem to benefit especially from such interaction. Interestingly, the effects of interaction for whites seems to be greatest at the lowest level of peer group support for effort. But Table VIII does not support the hypothesis that interaction increases the impact of peer environments. Interaction seems to foster effort regardless of the peer environment. In other words, the difference between the effort levels at high and low levels of interaction remain

constant from one level of peer motivation to another. If the hypothesis was correct we would expect, in the clearest case, students in classrooms with low effort peer environments to do better than students in low interaction situations than in situations where high contact is experienced.

In any case, the implications for those who seek to maximize the effects of school integration are clear: create classroom environments in which student interaction is encouraged. Strictly speaking, the benefits of such interaction seems to have nothing to do with integration but the consequences are the same nonetheless.

If student interaction in general increases student effort, does the amount of interracial contact have any impact? For purposes here let me rely again on student assessments of such contact as my measure. As noted earlier, students were asked to indicate how often children of different races worked together on class projects and played together at recess (see the items in Scale 1, Appendix D). The levels of interracial contact among students in a given class.

As TableIX shows, the greater the interracial interaction, the greater the academic motivation students report.

Table IX

Relationship Between Interracial Contact and Student Effort In School, By Race, Controlling for Peer Group Environment

(Low Score Means Greatest Effort)

			Average Level of Classmate's Effort in School		
		Student Race	HI	MEDIUM	LOW
Interracial Contact	HI	Black	8.61 (172)	9.93 (67)	11.17 (144)
		White	8.14 (443)	9.19 (235)	10.25 (292)
	Lo	Black	9.83 (30)	10.73 (26)	12.43 (68)
		White	9.24 (127)	9.85 (107)	11.06 (156)

While the differences between the cells are relatively small, the pattern is clear. At higher levels of interaction, students work harder in school regardless of the classroom environment. Thus, as was true for student interaction in general, interracial interaction seems to increase effort in school independent of peer values. Why this is so, is not clear.

A careful examination of Table IX suggests one other interesting "potential finding". The differences between the effort levels of black and white students are consistently lower in high interracial contact classrooms than in low contact classrooms. The differences are quite small and are not statistically significant but the pattern exists. If further research were to sustain this inference, it would mean that the encouragement of interracial interaction in school might well lead to greater interracial equality in school performance. As might be expected, student opportunity to work together and interracial contact are somewhat related ($r = .29$). This is important in itself because many of the effects of school desegregation

depend, in theory, on interracial interaction. Teachers that afford opportunities for interaction in general will promote racial integration -- at least that is what these data imply.

While opportunities to work together and interracial contact are often found in the same classrooms, do they each have an independent effect on student achievement? As Table X shows, a step-wise regression analysis partialling out the effects of parent and peer support for school effort leaves statistically significant regression coefficients for the effects of interracial interaction on individual effort.

Table X

Effects of Interaction and Interracial Contact for Black and White Students After the Effects of Parents, Peers, and Direct Teacher Support for Effort are Accounted For

	Interracial Contact		Opportunity for Interaction	
	B	Standard Error	B	Standard Error
Black	.1501	(.0747)	.0923	(.0385)
White	.0978	(.0439)	.0978	(.0439)

As can be seen, both interracial interaction and interaction in general have a positive though not dramatic impact on student effort. It is also apparent that interracial interaction has a substantially greater effect for blacks than whites.

Summary

As we have seen, teacher and observer assessments of conditions fostering student interaction do not seem related to student effort in school. On the other hand, students' own assessments of the degree of interaction they have with their peers and of interracial interaction are correlated with higher achievement and high interaction would seem to enhance the effects of peer environment on student effort. Which measures of student interaction are to be believed? It seems sensible to discount teacher reports of the extent to which they encourage student interaction in favor of the students' own reports. But what about the objective assessment procedures used by the observers? These are new ways of monitoring classroom events and I cannot attest to their validity. Various attempts to refine these measures are underway. It is possible, of course, that students in the same classroom perceive different levels of student interaction and this will be explored. For the moment, given the clarity of the data and the fit of the data to the theory, it seems reasonable to conclude that levels of student interaction do enhance the impact of peer group environment on student effort. Indeed, these data suggest that teachers can foster interaction regardless of the "quality" of the peer environment without concern that such interaction will diminish motivation. It may be that interaction with other students gives children more positive attitudes toward school which in turn motivates efforts to achieve academically.

The Impact of Peer Group Racism

Of course, when student interaction occurs in racially hostile environments we would not expect interaction to facilitate the transmission of values of achievement. Peer achievement values could, however, raise a student's interest in learning in racially hostile settings if teachers responded to group norms and encouraged effort or, especially if interaction were low, students still emulated high achievers. In any case, we can identify peer group attitudes toward persons of other races and examine the impact of these attitudes on effort in school. One might hypothesize that the influence on black children of peer norms to achieve in school is reduced in classrooms where white students are less open to blacks. This dimunition of peer group influences would, one could surmise, be most pronounced in classrooms with considerable student interaction.

In this study, racial antipathy is measured in two different ways. First, there is a four item scale developed by the International Education Association which measures explicit interracial antipathy. This scale asks the student's views on such things as access to public facilities and public accommodations, equal employment opportunity, and the attainment of political power by other races (see scale 15 in Appendix D). A second measure is the willingness of students to sit in class next to a person of a different color. Students selecting responses, "I would like it" or "I wouldn't mind it" are considered racially unbiased; those who say "it depends," or "I would rather not" or "I wouldn't like it," are considered equivocial or biased.[9]

The first thing the data tell us is that overall black and white students do not differ significantly in the extent to which they are willing to

acknowledge racial intolerance, though blacks in this sample are slightly more intolerant. There are, however, significant differences within racial groups with students whose parents have graduated from high school or had some collegiate education being more tolerant. When educational level of parents is controlled, the small difference in the levels of interracial antipathy between black and white students is eliminated.

Table XI examines the relationship between racial antipathy and the racial composition of the classroom. Only in classrooms that are more than 80 percent white does there appear to be any association. In such predominately white classrooms, both black and white students are more toleran though this probably reflects the fact that the students in these classrooms are members of better educated families rather than any dynamics of the classroom context itself. Where the chances for interracial contact is greatest, the relationships students have are at least as intolerant as those in classrooms that are more dominantly of one race.

Table XI

Relationship Between the Racial Composition of the Classroom and Racial Antipathy

Racism Scale Hi Score = Hi Racism	40 n = 192	41 - 60 n = 314	61 - 80 n = 858	80 n = 767
	6.02	6.04	6.14	5.47
Willingness to Sit With Other Race* Hi Score = Lo Racism	.59	.58	.56	.53

*Percentage here equals the proportion giving answers reflecting tolerance to a single question.

But whether the proportion of whites in a classroom is associated with racial attitudes turns out to be irrelevant to the purposes of this paper. This is because the racial attitudes that characterize one's classmates appear to be unrelated to students' effort in school. Using both cross-tabulations and regression coefficients, controlling for parental education and support, and testing the possible interactive effects of peer environment and racial attitudes all yield null findings.

One possible reason why we do not get very substantial findings from this inquiry is that black children in the schools studied do not experience much racism from their peers. The proportion of white students who subscribe to the more clearly racist positions was quite small -- in the order of ten percent. Or, perhaps the measures of anti-black feelings utilized here are not very sensitive. There were, indeed, a substantial number of fence sitters among white students in response to the question about their likely reaction to sitting next to a black in class. Almost 40 percent of the students indicated "It depends on the person," when asked their feelings about sitting next to a person of another race. I have interpreted this response an an equivocation when compared with the option of, "I wouldn't mind it." But it is difficult to know. And, of course, sitting next to someone may not be very threatening and thus may not test very well one's racial antipathy. Finally, as any

*In a review of more than 20 studies of the correlates of racial prejudice, W. N. Stephens and C. S. Long found a consistent relationship between levels of education and level of prejudice: the higher the education the lower the prejudice. They conclude however that the evidence is weakened by the strong possibility that, ". . . better educated respondents were more likely to think that the unprejudiced responses was the proper expected one, and that this, rather than less real prejudice, accounts for (the findings)." Cf. William N. Stephens and C. Stephen Long, "Education and Political Behavior", in James A. Robinson, ed., Political Science Annual-II (Indianapolis: Bobbs. Merrill, 1970), pp. 3-33.

casual observer knows, interracial hostility is much more likely to manifest itself in junior and senior high school than in the fifth grade. For all these reasons, then, the consequences of peer group racial attitudes on the academic efforts blacks in interracial classrooms and the conditions under which that is most likely to be found should remain open. It is a potentially important question with which educational policy makers could grapple. These data suggest that to the extent I have measured interracial antipathy, such antipathy does not affect student motivation to achieve academically.

EFFECTS OF TEACHERS ON STUDENT EFFORT IN SCHOOL

Thus far, I have discussed the impact of parents and peers on academic achievement. And, insofar as teachers influence student interaction -- which they obviously do -- I have begun to explore ways that teachers' behavior affects student effort in school. This section pursues the matter further.

Despite the recent controversies over the impact of schools on academic achievement, there is reason to believe that what teachers do makes a difference for children.* There is also considerable agreement among those who do research on such matters that most large-scale studies have probably understated the impact of what goes on in classrooms because the measures used capture neither the range of experiences students have nor the full variation in those events or interactions that are recorded.**

The data from this study show significant and potentially important relationships between several aspects of teacher behavior and classroom environments on the one hand, and the amount of effort students expend in school on the other. And, as was noted earlier, teachers can significantly determine the rate of interaction students experience. Attention here is focused on three types of considerations: teacher race, discriminatory behavior, and the empathy and support teachers give to students. With respect to these last two, I will look first at whether the racial mix of the classroom affects teacher behavior and, secondly, whether differences in teacher behavior have a differential effect on children.

*Alexander Mood, ed., Do Teachers Make a Difference? (Washington, D.C., U.S. Governemtn Printing Office, 1971).

**Alice Rivlin and P. Michael Timpane, eds., Planned Variation in Education (Washington, D.C., The Brookings Institute, 1976); and Harvey Averch, et al. How Effective is Schooling (Santa Monica: The Rand Corporation, 1972)

Effects of Teacher Race

Nancy St. John, in a 1971 review of the research on school desegregation, observed that despite its "obvious character", the impact of teacher's race on student achievement was not much studied or understood.* For various reasons, including discrimination or uneasiness of white teachers when dealing with minorities, greater empathy or higher aspirations for minority students on the part of minority teachers, or because minority children respond more readily to minority teachers, there is some consensus among researchers that minority teachers are more effective with minority youngsters than are white teachers.** However, this consensus is based on less than definitive data and the question, especially as it relates to younger children, is very much open.*** If the evidence clearly indicated that black students worked harder when taught by blacks, the argument for stressing the integration of teaching staffs when desegregation is implemented would be strengthened. At the same time, if teacher race is of considerable importance to the scholastic success of minority children, then desegregation -- to the extent that it increases the number of white teachers black students experience -- may actually work to reduce black academic achievement.

The number of black teachers in this sample is only seven and nine percent of the students surveyed are in their classrooms. Thus, the results

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*Nancy St. John, "Thirty-six teachers: Their characteristics and Outcomes for Black and White Pupils," American Educational Research Journal 8(November 1971) pp.635-648.

**James S. Coleman, et al. Equality of Educational Opportunity. Washington, D.C.: U.S.Govt. Printing Office, 1966);D. Gottlieb. "Teaching and students: the views of Negro and White teachers.", Sociology of Education 37 (Summer 1964) 345-353; P. Rubovits and M. Maehr. "Pygmalion black and white." Journal of Personality and Social Psychology 25 (February 1973) 210-218; D. Entwisle and M. Webster, Jr. "Expectations in mixed racial groups." Sociology of Education 47 (Summer 1974):301-318; W. Spady. "The impact of school resources on students." In F.N. Kerlinger (ed.), Review of Research in Education -- I. (Itasca, Ill.: F.E. Peacock, 1973). pp.135-177;

***Gordon C. Darkenwald, Sociology of Education 48 (Fall 1975), pp. 420-431.

of this research can add only marginally to answering the question.

In simply comparing the motivation of blacks and white students with the race of their teacher, it appears that black students with black teachers are likely to make a somewhat greater effort in school than those with white teachers. The academic effort of white children, on the other hand, seems unaffected by the race of their teacher.

However, when, through multiple regression analysis, the level of parental support black students experience is controlled and the relationship between their teachers' race and their effort in school is examined, the effects of teacher race washes out, i.e., teacher race has no significant effects.

The data in this study indicate, then, that the interest students have in academic achievement is neither strengthened or weakened by the fact that their teachers are either black or white. And, they suggest that the same is true for both blacks and whites. But, given the small number of black teachers in this sample, these conclusions ought not to be given much weight.

Identifying Discriminatory Behavior by Teachers

One assumption upon which this study is based is that teachers are important referents for students. If this is true, it follows that student effort in school should be influenced significantly by teacher behavior that is racially biased. The first problem in exploring this possibility is the difficulty of identifying racial bias among teachers. Teacher questionnaires will not do it, the "right" answers are too well known.

One can measure discriminatory behavior by observing it or by asking those who might be affected by it to report it. I sought to do both. In the Assessment of Classroom Political Environments system for monitoring teacher behavior, the sociogram might allow the observation of discrimination by describing whether teachers direct a disproportionate number of communications to one race and whether such communications are, in turn, disproportionately disciplinary in character.

Preliminary analysis of the sociogram data suggest that, generally speaking, such imbalance is relatively small and well within the variation that might be explained by variations in students' needs for teacher attention. Further analysis of student characteristics and the interrelationship of the different approaches to capturing teacher behavior may increase the utility of the sociogram for identifying any discrimination that does exist. For the moment, I will have to conclude that the sociograms indicate that the teachers studied do not discriminate against blacks and that this is so regardless of the racial mix of the classroom.

Let me turn to the student questionnaire for evidence of racial bias by teachers. Rather than ask students directly whether their teachers discriminate against them, I've compared black and white perceptions within each classroom of teacher behavior that might affect performance. Thus, a classroom is labelled as a biased environment if black and white students in that class report significantly different treatment by teachers.

The average score received by blacks is substracted from the average score received by whites and the resulting number (plus or minus) is the index of discrimination -- the extent to which teachers are differentiating between black and white students -- for each classroom.

In this way, measures of discrimination were derived for three types of teacher behavior (1) the teachers' willingness to listen to student problems and initiatives -- which I call "teacher openness" (see scale six, Appendix D), (2) teacher concern for the individual's achievement -- "teacher support for effort," (see scale nine, Appendix D), and (3) "teacher fairness" in administering rules, assignments and personal attention (see scale five in Appendix D.)

It appears that the teachers in this study do not discriminate on the basis of race in the extent to which they encourage students to do their best in school. There is some overall racial bias with respect to teacher fairness and openness, i.e., blacks are more likely to view their teachers as being unfair and less open to them than are whites. There are also substantial differences among classrooms in the extent of the racial bias and in some cases the racial bias in a classroom is in "favor" of blacks. For example, consider the matter of teacher fairness. Of the sixty five classrooms in which there apparently are significant differences in the perception of teacher fairness by black and white students, teachers are biased in <u>favor</u> of blacks in 11.* However, the degree of the bias is much greater on the average in those classrooms where teachers seem to be unfair to blacks. For example, the largest bias in a "pro-black" class is 3.5 points, in "pro-white" classrooms there are 26 classrooms where the spread is more than 3.5 and 16 classrooms where it exceeds five points. It is interesting that black teachers generally seem to be perceived by black students as significantly <u>less</u> fair (and less "open" too) than white teachers.

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*A significant difference is defined here as one in which there is more than one point difference in the mean scores of black and white students on the teacher fairness scale.

teachers. Moreover, there is some suggestion -- though again there are only seven black teachers in the sample -- that this discrimination by black teachers against black students is most likely in predominately white classrooms. (It should be noted that all black teachers have at least a majority of whites in their classes). Perhaps black teachers feel an obligation to "bear down" on black students in order to encourage them to make an extra effort to achieve or to compete with their white classmates. As noted earlier, black and white students in the same classrooms do not report importantly different levels of teacher support for effort regardless of the race of their teachers.

Impact of Racial Mix on Discrimination by Teachers

The simple product moment correlation between the fairness and support for effort aspects of discriminatory behavior respectively and the proportion of whites in the classroom is insignificant. An examination of cross tabulations of these variables and of their regression coefficients similarly shows no relationships. At least so far as the dimensions of teacher-student interaction noted above - including the behavior assessed by the sociogram - are concerned, the racial mix of students in their classrooms does not appear no influence teacher behavior.

Teacher openness or responsiveness to students, on the other hand, is related to racial composition ($r = .24$). As Table XII indicates almost all of the discrimination against blacks occurs in classrooms that are 80 percent or more white. Perhaps the reason for this finding is that blacks in predominately white classrooms feel less willing to assert themselves in ways teachers will respond to in an open manner. Negative responses by black students to questions on the openness scale may reflect the students' lack of assertiveness which could feed teacher expectations that black students will not make very great demands on them.

Table XII

Proportion of Whites in the Classroom and Extent of Discrimination by Teachers With Respect to "Openness"

Proportion of Whites	0-40%	41-60%	60-80%	80%
Degree of Discrimination	.65 (171)	.78 (315)	.76 (858)	2.12 (771)

Effects of Racial Discrimination by Teachers on Student Effort

Surprisingly, discriminatory behavior by teachers toward black students does not seem to affect black student effort in school. The regression coefficients for teacher discrimination with respect to openness and fairness are not significant. There is some indication, as Table XIII suggests, that discrimination with respect to openness at its highest levels is associated with reduced student effort though the numbers of students in each cell is relatively small.

This apparent invulnerability of black student effort in school to discrimination by teachers is difficult to explain. I noted earlier that teachers do not seem to discriminate racially with respect to the encouragement they give to students to do their best in school. Perhaps teachers who otherwise discriminate against blacks have sufficient professional self-consciousness to eschew racial bias when their central function is involved -- namely, teaching students academic topics. Students may be able to set aside inequities of treatment on other matters when they perceive no differences in the levels of encouragement blacks and whites receive

Table XIII

Effects of Anti-Black Discrimination Regarding Openness on Effort in School on the Part of Black Students Controlling for Parental Support (Low Score = High Effort)

Parental Support for Effort in School	Discrimination Against Blacks: None	Low	High
Hi	8.37 (63)	8.03 (69)	9.00 (25)
Med	10.14 (73)	9.47 (77)	10.75 (48)
Low	11.31 (70)	11.24 (75)	12.22 (68)

Or, perhaps black students are so used to discrimination that they either accept it as a part of life and do not allow it to affect their behavior, or they do not perceive it when it exists.*

Discriminatory behavior on the part of teachers, even if it has no direct impact on student effort, may teach lessons to students about the appropriateness of racial bias. Even if the degree of racism in a classroom does not directly influence performance -- though it is difficult, frankly, to believe that it would not -- it would obviously be important to eliminate sources of racial intolerance.

Teacher Empathy and Support

Measuring Teacher Empathy and Support

Teacher empathy and support are measured here in three ways. First, the Politically Relevant Interaction Measure yields an index of the proportion of a teacher's responses to students that are accepting, supportive, encouraging or otherwise positive as compared to responses that are disapproving or negatively evaluative. I will call this "teacher responsiveness." Second, I utilize the teacher openness scale discussed in the previous section. Students scoring high on this scale ("high" scores are actually low numbers) are indicating that their teachers respect their opinions, listen to their problem, or gives them the opportunity to explore things that interest them. (see Scale 6, Appendix D) Third, I will look at the teacher's positive support for doing well in school (see Scale 9 in Appendix D). For convenience let me refer to the first two of these as measures of empathy and treat the third as "support."

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*Recall that the measure of discrimination does not require individual students to label teacher behavior as discriminatory.

Effects of Racial Mix on Teacher Empathy and Support

As I've implied earlier in this paper, the racial mix of a classroom does not appear to affect teacher support for student effort in important ways. The simple product moment correlation between teacher support and the proportion of whites in a classroom is an insignificant .015. Table XIV also manifests this finding.

Table XIV

Relationship Between Racial Mix and Student Perceptions of Teacher Support
(Low Scores = Most Support)

	Student Race	Proportion of Whites in Classroom			
		0 - 40	41 - 60	61 - 80	81 - 100
Teacher Support	Black	7.73	7.55	7.62	7.63
	White	7.64	8.01	7.85	7.95
	All Students	7.67 (192)	7.82 (314)	7.80 (858)	7.93 (767)

The difference between all the cells are neither systematic nor statistically significant.

As Table XV shows, there is little relation between racial composition and teacher openness. One may "push" the data and note that there is a slight tendency for teachers to be less open to students as the proportion of black students in a classroom begins to exceed 40 percent. These differences, while supportive of the conventional wisdom, are not statistically significant.

Table XV

Relationship Between Racial Mix and Student Perceptions of Teacher Openness
(Low Scores = Most Openness)

	Student Race	Proportion of Whites in Classroom*			
		0 - 40	41 - 60	61 - 80	81 - 100
Teacher Openness	Black	26.58 (131)	26.12 (138)	25.05 (226)	26.72 (75)
	White	25.66 (59)	25.02 (167)	24.18 (616)	24.62 (684)
	All Students	26.82 (192)	25.48 (315)	24.40 (858)	24.81 (771)

* Only one classroom has less than 20 percent white students. This class is grouped with those in which 20-40 percent of the students are white.

Similarly, correlation analysis shows no signicant relationships between the racial composition of the classroom and student perceptions of teacher openness (r= -.06).

Finally, as Table XVI shows, teacher responsiveness as measured by the classroom observers is not clearly related to the racial composition of the class. The product moment correlation between teacher responsiveness and racial composition of the classroom is also insignificant.

Table XVI

Relationship Between Observer's Record of Teacher Responsiveness and Racial Composition of the Classroom (High Score = Most Open)

White Proportion			
0 - 39	40 - 59	60 - 79	80 - 100
8.38 (193)	10.38 (315)	8.43 (858)	10.80 (771)

*Note that for this table, unlike most of those in this paper, classrooms are the unit of analysis and high scores mean high responsiveness.

Teacher Support for Student Effort

Of all the popular beliefs about teacher effectiveness, one that almost everyone agrees with is that teacher expectations and encouragement of high achievement, at least within the bounds of the student's capacity, contribute importantly to learning. Not surprisingly, the data in this study support this proposition. TableXVII shows this relationship measuring teacher support through a four item scale from the student questionnaires, (See Scale 9 in Appendix D) which includes such statements as: (1) How often does your teacher honestly praise you for the work you do well? (2) Does your teacher really want you to learn?

TABLE XVII

Regression Coefficients Showing the Relationship Between Teacher Support and Student Effort in School After Accounting for Parental Support (Low Scores = High Effort)

	Black Students	White Students	All Students
Parental Support	.1776 (.0258) R^2 = .183	.1338 (.0166) R^2 = .096	.1616 (.0139) R^2 = .124
Teacher Support	.2088 (.0560) R^2 = .094	.4398 (.0301) R^2 = .181	.3896 (.0256) R^2 = .146

It is interesting that whites seem to be influenced by their teachers substantially more than blacks. Together, parental and teacher support account for about 20 percent of the variance in reported student effort. Of course, direct encouragement is only one way teachers influence educational motivation.

Effects of Teacher Empathy on Student Effort

As one might expect, student reports of teacher openness and teacher support for student effort in school are related. But they are not the same thing ($r = .57$ for white students and .51 for blacks). One teacher may be aloof, demand deference and allow students little initiative and another may allow students considerable intimacy and be very responsive to student requests for self-direction while both may be equally supportive of student efforts to achieve academically. In other words, teachers may be demanding of students and expect much of them but may do so in different ways.

Both measures of teacher empathy referred to above are positively related to student effort. Moreover, the effects of empathy persist even when teacher support for effort is taken into account.*

As Table XVIII shows, the regression coefficient for teacher openness is clearly statistically significant for both blacks and whites but the size of the effect is small. Of course, my measure of student support for effort is picking up some of the "open" behavior of teachers and reversing the order in which the empathy and support variables are entered in the step-wise regression increases the both the size of the openness coefficient and the amount of the variance it explains though teacher support for effort remains the more dominant of the two variables. In any case, teacher openness is likely to increase the effort students give to school.

Table XVIII represents the regression coefficients and the variance explained by teacher openness (as seen by students) when other factors

*While I do not present the analysis here, roughly the same conclusion can be derived if teacher empathy is measured by teacher support for the individuality and discretion of students (see Scale 10, Appendix D).

already found to be important to student effort are taken into account.

TABLE XVIII

Effects of Teacher Openness on Student Effort in School When the Effects of Parental Support, Peer Values and Direct Teacher Support are Accounted For

	Whites		Blacks	
	B	R^2 Change	B	R^2 Change
Parental Support	.1191 (.0164)	.0796	.1570 (.0245)	.1340
Peer Effort	.6618 (.0766)	.0683	.8340 (.0997)	.1197
Teacher Support	.2876 (0349)	.0846	.1540 (.0532)	.0283
Teacher Openness	.0879 (.0161)	.0148	.07561 (.0255)	.0110

Let me return to the possibility that the racial mix of the classroom might be related to student effort. It appears from Table XIX that the degree of openness has a significantly greater consequence for student effort in classrooms that are predominately black. This is of interest because students in such classrooms do not differ substantially from students in classrooms that are 50-75 percent white in the amount of teacher and parental support they experience. In otherwords, teacher openness seems to increase student effort at all levels of racial desegregation but it may be most important to students in settings we would consider not desegregated in most communities.

Table XIX

Relationship of Teacher Openness and Racial Mix to Student Effort
(Low Scores = High Effort)

		Hi Openness		Lo Openness	
		Black	White	Black	White
White Percentage in Classroom	1 - 49	8.39	7.50	11.51	10.79
	50 - 74	9.16	8.19	10.46	10.53
	75 - 100	8.8.	8.49	11.04	10.24

It also seems from Table XIX, that in classrooms where teachers are more open whites do best when there are sizable numbers of blacks in the classroom.

If we put these findings about the sanquine effects of teacher openness together with previous data on the relation between the racial composition of classrooms it can be seen that racial desegregation which involves placing whites in classes where 40 percent or more of students are black may result in less openness by teachers. Less openness by teachers could have a small negative effect on student effort. This is all very speculative and time series data are required to test it. The data do argue for encouraging more open behavior among teachers and for paying some attention to the possibility that some teachers may have trouble behaving in an open way when they have large numbers of blacks in their classes.

Finally, let me look at the effects of teacher responsiveness (assessed by the classroom observers) on student effort. As Table XX indicates, it appears that teacher responsiveness influences student performance only in predominately black classrooms but there the effect is very substantial.

Table XX

Effects of Teacher Responsiveness on Student Effort in School at Different Levels of Racial Mix

Teacher Responsiveness	Classroom Racial Composition		
	50	50 - 75	75
Low	10.95 (173)	9.63 (424)	9.41 (531)
High	8.66 (112)	9.41 (348)	9.71 (495)

Summary

The racial composition of a teacher's classroom does not seem to affect the degree of encouragement she gives students to do their best. Teachers, overall, tend to discriminate against blacks but the effects on student effort is not apparent. It seems that student effort is significantly affected by teacher support for achievement and responsiveness and openness seem to contribute, at least marginally, to student motivation.

CONCLUSION

When all is said and done, this analysis can be read to argue that simply mixing students of different races together in the same classroom will have little effect on the energy students invest in school. If, however, peer group values are distributed in such a way that desegregation would increase the liklihood that black children will, through integration, attend schools in which their peers place a higher value on achievement than they do , desegregation should lead to greater student effort.

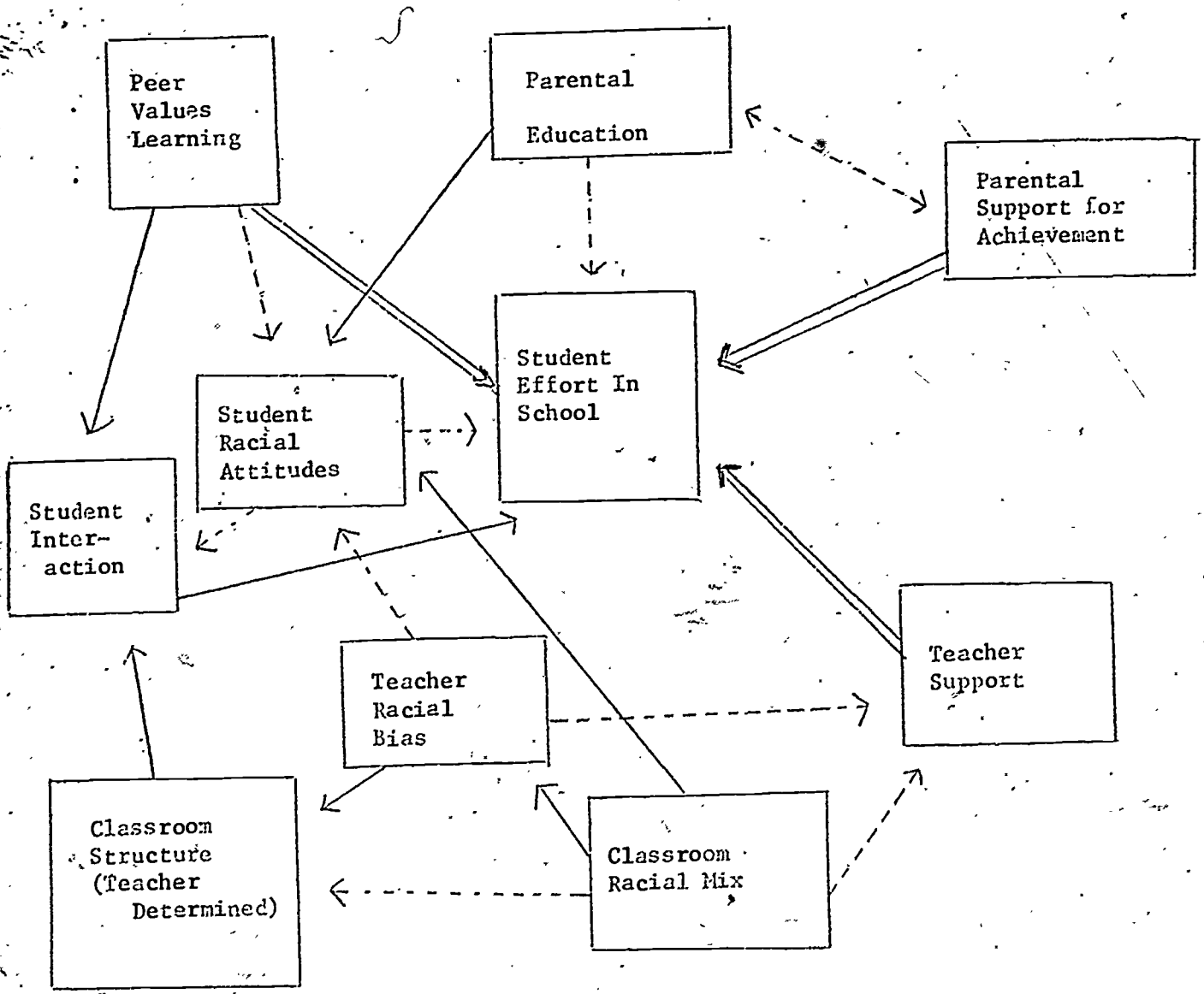
These data also suggest that what teachers do is important in shaping student motivation both directly through contact with individuals and indirectly through the structuring of classroom environments and the contributions made to the motivation of the individual's classmates.

One way to provide an overview of the findings of this study is to reformulate the model (diagrammed on page six) upon which the analysis is based. The data allow us to simplify the model and, at the same time, to get some idea of the relative strength of the factors that influence school effort. To keep this revised model (see Diagram II) from becoming too complicated, I will differentiate the strength of relationships into two classes -- major and minor--indicating the former with double lines and the weaker links with a single line. Hypothesized relationships this research suggests do not hold are shown by dotted lines.

This shorthand way of describing the results of this study masks a number of issues that I think the paper has illuminated. Moreover, as has been shown, somewhat different pictures would be drawn if effects were differentiated by race. The analysis herein explains about 26 percent of the variance

Diagram II

Revised Model for Assessing the Effects of School Desegregation on Student Academic Effort



in the white students' professed effort in school and close to 40 percent of the effort of blacks. At the same time, while the relative importance of different factors in shaping student motivation may vary by race it is significant that the things that foster greater effort among blacks are similar to those that also motivate white students. Indeed, this study suggests what seems altogether obvious but is seldom discussed, desegregation has its best chances of contributing to student achievement in schools that have teachers who expect much of students, are responsive to their needs and encourage some measure of interaction and self-direction. It follows then, that efforts to make a success of desegregation will improve the schools for all students. At least this is the immplication of these data on the experiences and dispositions of fifth graders.

It would be inappropriate to claim that this analysis has resolved a number of questions. Research of this sort is useful for questioning assumptions, suggesting hypothesis and confirming conventional wisdom. And, though it seems hackneyed to say so, research such as this suggests the direction in which future research might go.

One of the major purposes of this study has been to suggest some ways of thinking about the conditions which might enhance the effectiveness of school desegregation efforts.

Throughout the paper I've tried to suggest some policy implications of many of the findings. This is not to say that policy should be made on the basis of this evidence alone. This analysis does provide support to those who argue that school desegregation plans need to avoid rigid racial quotas and to employ criteria for pupil assignment other than racial ones -- at least if increasing student motivation to achieve academically is a primary objective. And, school desegregation strategies that fail to recognize the importance of teacher behavior will be less successful than they might be.

As I noted at the outset, improving the academic achievement of minorities is not the only reason one might favor school desegregation. This paper does not speak to these other goals, but the available research suggests that with respect to these considerations too, flexibility and complexity might well characterize more effective desegregation strategies.*

*This argument is made by Willis D. Hawley and Ray C. Rist, Op. cit.

APPENDIX A

RELIABILITY OF THE POLITICALLY RELEVANT INTERACTION MEASURE (PRIM)

Reliability coefficients were prepared using both videotape recordings of classroom interaction and practice in live classroom settings. The training sessions reduced the percentage of disagreement between observers from 43.4 percent to 14 percent. Scott's (1955) reliability coefficient was used to determine the reliability between observers. Scott's method is unaffected by low frequencies, can be adapted to percent figures, and is more sensitive at higher levels of reliability. The training sessions improved the reliability coefficient from .26 to .78. Chi-square analysis showed that there were not significant differences between the way these observers described the same classroom interaction. The results indicated a consistently high degree of reliability for all major categories of analysis.

As noted, each observer observed the same classroom all three times. A comparison was made to see if there were significant differences between the way the observers described the classrooms in their first, second and third visits. This was done by establishing a 95% confidence interval for the differences in each category. If the actual differences between two observations was outside this confidence interval, the difference between the two observations were considered significant.

There were 51 significant differences between observations 1 and 2, 37 between observations 2 and 3, and 51 between observations 1 and 3. It was expected that there would be greater differences between observation 1 and either of

the other two observations and that we could weight each session accordingly in developing our aggregate scores. When the significant differences were taken as a percentage of the total number of possible differences, 4.6 percent of the time there are significant differences between observations 1 and 2, and 1 and 3; and 3.2 percent of the time there are significant differences between observations 2 and 3.

Coefficients were calculated for the correlations between observations 1, 2 and 3 for each of the 14 categories of the categorical observation system. Again, the correlations between observation 2 and 3 were the highest.

APPENDIX B

POLITICALLY RELEVANT INTERACTION MEASURE

The analysis of politically relevant interaction between students and teachers is based on a shorthand form of notation to describe various types of teacher-student, and student-student interactions. An observer classifies the interactions that are occurring in the classroom as being most accurately described by one of fourteen possible categories of behavior.

Observers are not evaluating teachers; observers are describing teacher behavior. The categories are concerned primarily with verbal behavior since verbal interacting can be observed with higher reliability than nonverbal interaction. The assumption is that verbal behavior is an adequate sample of the characteristics of the dominant interaction patterns within the classroom.

The classroom teacher is responsible for establishing and maintaining interpersonal relations with students so that the objectives of the educational program may be most successfully realized. Thus, the acts of teaching leads to reciprocal contacts between the teacher and the pupil, and the interchange itself is called teaching. This instrument is concerned with describing the nature of that interchange.

In addition to describing the types of verbal interactions that are occurring in the classroom, the "Politically Relevant Interaction Measure" (PRIM) also allows one to recreate the sequence or chain of events that have occurred in the classroom. By recording classroom behavior on a three second interval one can determine what preceeded and what followed each behavior. Such information should allow one to explain differences in educational outcomes, since the general outcomes of teaching must be affected by the sequence of events that preceded the outcome. Thus, PRIM system

allows one to describe general characteristics of the classroom environment along with the sequence of classroom events.

The PRIM Categories

The classroom interactions are categorized as being best described by one of fourteen categories. A category is tallied every time a behavior changes and every three seconds in any behavior that lasts longer than three seconds. The tallies are written in a column, preserving their sequence, at the rate of approximately twenty tallies per minute. These numbers can then be entered into a matrix which will provide summary information about the type, sequence, and amount of verbal behavior which has been recorded.

The fourteen categories used to describe classroom interactions are:

A. Teacher Response:

1. Teacher accepts student response - Teacher indicates by word or gesture that a student has made a worthwhile contribution or a correct response. Includes approaching a student initiated topic as well as clarification, elaboration or repetition of child's idea, statement, or contribution. The teacher praises or encourages student response or behavior: "I see what you mean"; "Yes;" "Right;" "Good;" "Go on;" "That's a good idea;" "Now you are thinking." etc. Non-verbal acceptance such as nodding head or touching child.

2. Teacher designates student response unacceptable - Teacher avoids student initiated topic or designates student response or performance unacceptable; indicates that a student's contribution is

not worthwhile or gives student a negative feeling about himself. Criticizing and discouraging student response or behavior. Sarcasm and rejection or denial of student's dealings. Includes shaking head. "No", as well as saying, "that is incorrect" or ignoring a student.

3. Teacher Expression of opinion or judgment - A value statement or expression of feeling, opinion; involves a personal element; includes statements that cannot be objectively documented from text or other authority. If teacher is presenting ideas or opinions of others, it should be considered lecturing. Supports or disagrees with current event or national issue. Takes a stand on an issue being discussed in class. These are statements which are personal in nature.

B. Teacher Initiation:

4. Teacher asks a factual question - Question requiring a factual response or a right or wrong answer. Drill type questions are an example. A signal to a student to provide a factual response; i.e. calling their names or giving brief cues such as "next". Asks a question to which the teacher expects an answer from the pupils. Questions for which there seem to be obviously a right and a wrong answer. "What is the capital of France." "Who knows the answer to question three." "John, what subject matter are we studying today."

5. Teacher asks question requiring judgment or opinion - Asks a question requiring the expression of opinion, idea, suggestion, or feeling; questions which seem to be phrased such that the answer could not be classified as right or wrong; this includes open-ended questions. "What are some of the things the author might

have told us about America." "What do you think are the most important characteristics which might be used to describe a society?"

6. Teacher Lectures - Gives facts about content or procedures; an expression of the ideas or opinions of people other than teacher or students; a rhetorical question included in the context of the lecture; teacher giving directions for an instructional purpose or giving directions or commands which a student is expected to obey. Explaining, discussing, giving facts or information.

C. Classroom Management

7. Expression of authority - Expression of need for students to comply to a rule or to teacher's authority; designating behavior as incorrect or inappropriate. Includes non-verbal expression, tapping of pencil, firm grasp on shoulder, etc. Statements of extreme self-reference or those in which the teacher is ordering the student to do something because of the teacher's position to make such a request. A question like, "What are you doing out of your seat?"

8. Teacher expression of need for citizenship - Expression of student responsibility to protect other students' rights, to consider the views of others. Statements referring to practicing good citizenship; any statement meant to protect the rights of others in the classroom; pointing out to a child the consequences of his action to others and his own responsibility for it.

D. Pupil Response

9. Pupil responds to teacher - Conforms to teacher direction/ answers questions. Student contributions follow some pre-established

line of thinking. When the student responds verbally to a direction the teacher has given. Initiation by teacher is the cue to the student response - limited freedom to express own ideas. Teacher initiates the contact or solicits pupil statement or structures the situation. Freedom to express own ideas limited. Appropriate behaviors range from fact giving and simple recall to following long and perhaps complicated (but clearly pre-established) processes in solving problems.

10. Pupil challenges - Student challenges teacher, classroom procedure class rules, position of presented material, authority or other student. Expresses disagreement or contrary opinion to that of text material or the teacher. The student brings in a viewpoint that is contrary to the one being discussed in class. The student quotes a fact which runs contrary to the one discussed. The student questions why it is necessary to follow a procedure or to learn about a given subject matter. A student questions why another student was given a special privilege or why he cannot be granted a special privilege.

E. Pupil Initiatives

11. Pupil-to-Pupil talk - This can be a statement, a question or a reply. It can be about the subject matter of the class or about something totally unrelated. When there is a conversation between pupils. Any discussion which is directed by one pupil to another.

12. Pupil initiates talk to teacher - The student asks a question or makes a statement when he has not been prompted to do so by the teacher; includes opinions, inferences and personal experiences. A pupil initiates a conversation with the teacher. A statement that

does not seem to have been cued by the teacher, and that goes beyond the pre-established structure.

F. Other Behavior

13. Observes actively - Any period of silence when there is no conversation of teacher or pupils; includes seatwork, silent reading, use of chalkboard or audio-visual materials when no verbal interchange is taking place; pauses or short periods of silence or periods of silence intended for thinking; when class is quietly changing seats, etc.

14. Confusion - Irrelevent or disruptive behavior. When noise level is so high that person speaking cannot be understood; when there is considerable noise and disruption of planned activity; periods of confusion.

Procedures for Observation

The observer enters the classroom as quietly as possible and takes a seat somewhere toward the back of the classroom but in a position to hear and see the participants. In some environments the observer must move about the classroom in close proximity with the teacher. The observer decides which category bests represents the communication event just completed, and while writing down the category number, simultaneously assesses the continuing communication. Observations are tallied at the rate of approximately one every three seconds keeping the tempo as steady as possible.

The number of the category which best describes the interaction that occurred in the three second interval is recorded in columns on the talley sheet. At the end of a recording period, the observer will have several columns of sequential numbers. It is important to preserve the sequence of numbers that have been recorded.

Ground Rules

Because of the complexities faced by the observer when trying to categorize behavior, several ground rules have been established as an aid in developing consistency among observers. These rules are:-

1. When not sure which of two categories a verbal interaction belongs always choose the category which has occurred least often..

2. When two activities are going on at the same time always focus on the activity which directly involves the teacher and then on the activity which has occurred least often.

3. Watch very carefully not to increase tempo during interesting or active periods of interaction and to decrease or slow tempo during uninteresting or slower periods of interaction.

4. If any interaction is extended for a period of greater than three seconds continue to record that activity under the same category on a three second interval.

5. Code a student's response or answer to a teacher's question as a category 9, but after the third student has responded to the same cue, code all additional responses under category 12.

6. Watch very carefully for any forms of a student challenge (category 10).

7. Block off and describe on the talley sheet the times when something unusual is happening -- such as student giving report, debate, student --

in the role of teacher, or small group projects.

8. In a class situation where a student has taken on the role of the teacher such as - leading a class discussion; asking the class questions; directing a class activity - a quiz, a T.V. interview, or game - category 11 is used to indicate the student's talk.

9. When the students are responding to a student directed discussion, question, or activity, that response is designated as a 9 until the student responds with more than an expected answer and begins expressing his own ideas or opinions which would then be designated by category 12.

10. When a student is giving a report requested by the teacher, category 9 is used until the student is expressing his own ideas and opinions or is obviously expanding ideas based on his research at which time category 12 is used.

11. When the students in the class ask questions and direct statements to a student who has given a report, category 11 and 12 are used to indicate not only student to student talk but also the initiative involved in such discussions.

12. Take special care to distinguish between pupil response (category 9) and pupil initiation (category 12). Record these categories of behavior as you perceive the behavior of the student.

Tabulating Data in a Matrix

Tabulating consists of entering the sequence of numbers from the talley sheet into a 14-row by 14-column table, which is called a matrix. All data from the talley sheet is entered into the matrix using pairs of numbers. The preceding behavior designates the appropriate row and the behavior following designates the appropriate column, the talley is then entered in the cell of the matrix which is created by the intersection of

the row and column. This is continued for each pair of behaviors.

Pairs of behaviors from a sequence are as follows:

6
1st pair 6
6 2nd pair
3rd pair 4
9 4th pair
5th pair 1
1

Notice that each pair of numbers overlaps with the previous pair, and each number, except for the first and the last is used twice. The first number of any pair designates the matrix row and the second number designates the matrix column.

Comments

There is nothing inviolate about the categories one uses in the PRIM System. Different types of behavior with different specifications could be incorporated in the categories depending on the theoretical or policy questions which interest the researcher. The basic system, as I noted in the text, has been developed by others, most notably perhaps, Ned Flanders. Twelve to fourteen categories of pupil teacher interaction, however, probably defines the upper limit of distinct behaviors observers can record.

APPENDIX C

CLASSROOM SOCIOGRAM

The social forces at work in a classroom are so complex that they cannot be adequately portrayed by examining the dominant interaction patterns that exist there. The basic structure of the classroom has an effect on the role that each individual plays in the classroom setting and the experience of each pupil is not identical. Classroom structure consists of the pattern of relationships that exists among the various members within the class, including the teacher. The dominant interaction pattern describes the relationships between the members of the class who participate most actively in the classroom. It tends to obscure, however, the degree to which different individuals and subgroups interact with each other and with the teacher.

The Classroom Sociogram was developed to better describe the structure of the classroom. The Sociogram provides a physical description of the room, along with the physical location of each of the members, their race, sex, direction of verbal interaction, and the direction of their physical movement. Such information allows one to determine the physical layout of the class, the degree to which members are physically, and/or verbally, isolated from the dominant interaction pattern, the degree of sexual and racial integration within the class, and the identity and distribution of verbal exchanges between teachers and pupils and among students. It also provides information relating to the amount and direction of movement within the classroom. It is believed that this information provides an excellent supplement to the description of the substance of the dominant teacher-pupil and pupil-pupil interactions that are discovered through use of interaction analyses procedures we call PRIM that are described in Appendix B.

The Coding System

The observer uses a blank sheet of paper with two carbons for the initial development of the Classroom Sociogram. The observer enters the classroom as quietly as possible and takes a seat somewhere toward the back of the room but in position to hear and see the participants. A freehand drawing is then made of the classroom showing the location of desks, chairs, blackboards, work centers, book shelves, games, audio-visual equipment, and any other outstanding features of the classroom. The carbon paper is then removed and the location of each student along with the teacher is placed on the sociogram. Each member of the class is designated as being male or female and black or white.

The interactions between the members of the classroom are then designated by arrows from the individual talking to the individual being talked to. All interactions directed toward the entire class are not designated with arrows but are tallied in a special tally block. Interactions are recorded at the rate of approximately one every five seconds. These arrows should show both pupil-pupil and teacher-pupil interactions, thus showing major communication patterns between all individuals within the room. Physical movements of class members are designated by an arrow crossed by a line at right angles. An arrow whose stem is marked by a "D" indicates a communication in regard to discipline. Teachers' remarks to the class, class responses, and students' reports or reading aloud to the class, are all tallied in the special tally block.

The following are the symbols used in the coding system:


White male teacher


White female teacher


Black male teacher


Black female teacher


White male student

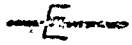

White female student

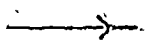

Black male student

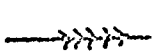

Black female student

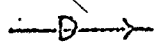
Students desk

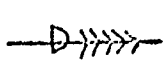

Direction student facing

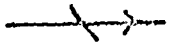

Unoccupied seat


Direction of communication

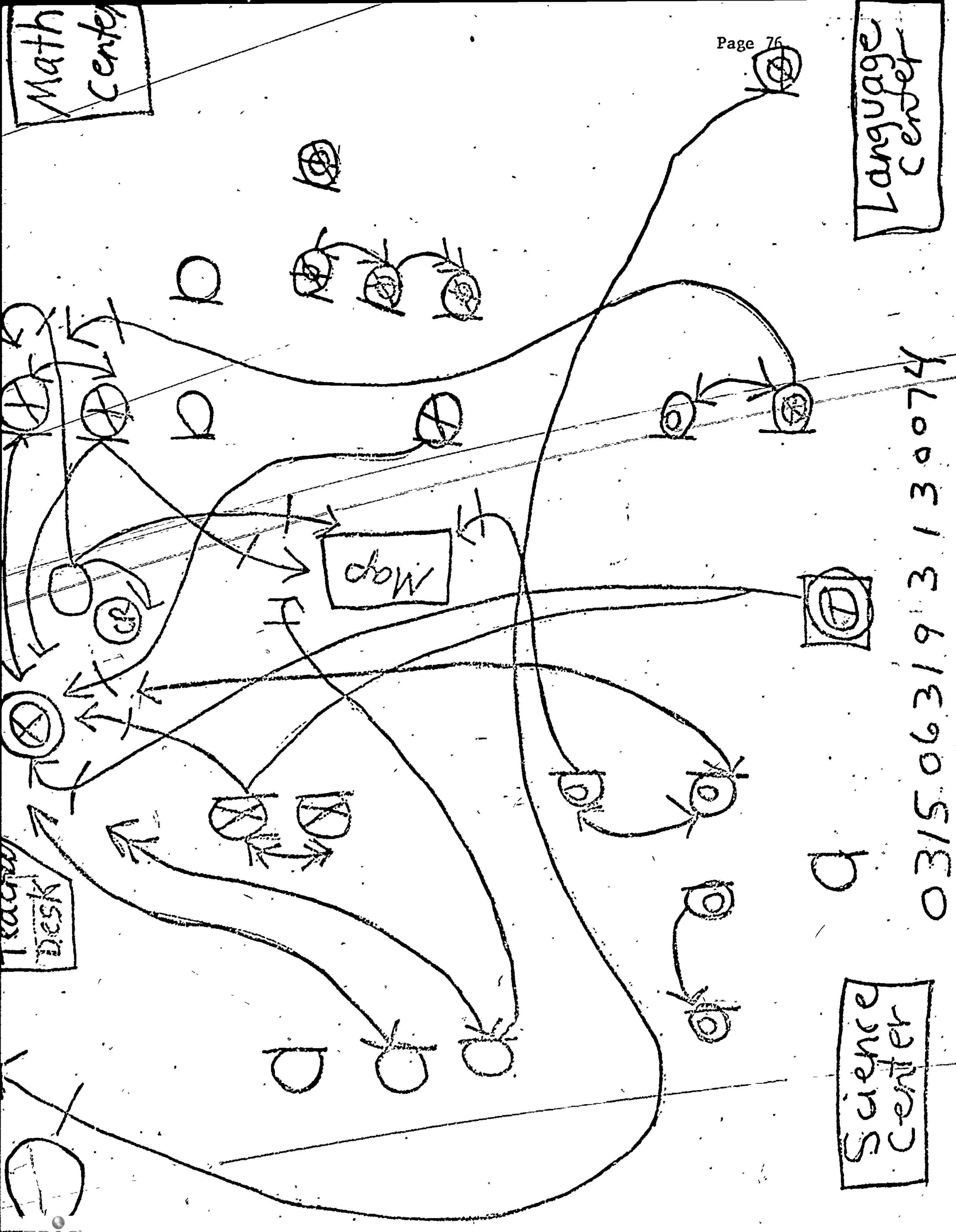

Tallies on communication arrow indicate number of communications to same individual


Direction of communication in regard to discipline


Tallies on discipline arrow indicate number of communications to same individual


Physical movement from one place to another

The physical description of the room is to be drawn as accurately as possible including the actual shapes of all desks and tables other than the student's desks. Attachment A is an example of the Classroom Sociogram after one seven minute observation session.


Math center
Language center
Map
Desk
Science center

APPENDIX D

SCALES FROM STUDENT AND TEACHER QUESTIONNAIRES

STUDENT SCALES

1. Racial Contact in Classroom

   1. How often do the black and white students in this class play together at recess?

   2. How often do the black and white students in this class work together on the projects the teachers give us?

   Reliability = .54 (Cronbach's alpha coefficient)

3. Student Effort in School

   1. Do you finish your school assignments when they are not interesting to you?

   2. Do you do your best in school?

   3. Are you proud of your schoolwork?

   4. When you make mistakes on a paper, do you go back and try to figure out what you did wrong?

   5. Even though I don't like some subjects, I still work hard to make a good grade.

   Reliability = .68 (Cronbach's alpha coefficient)

4. Teacher Support of Individuality

   1. Our teacher respects our opinions and encourages us to express them.

   2. Does your teacher let you express an opinion different from hers?

   3. How often does your teacher let you explore your ideas and try out new ways of doing things?

4. My teacher is interested in my ideas.

5. My teacher gives me things to do that really make me think rather than things just to copy or look at.

Reliability = .64 (Cronbach's alpha coefficient)

5. Teacher Fairness

1. Does your teacher try to settle things by hearing both sides?

2. Is your teacher fair to you in her enforcement of the school rules?

3. Do you understand the reasons for any punishment you may receive from your teacher?

4. My teacher always gives into the wishes of the same group.

5. My teacher has "pets" or favorites who can get away with things that I cannot.

6. Do your principal and teachers run this school in a way that is fair?

7. My teacher grades me fairly.

8. If I get a grade on an assignment or my report card that I think is not fair, I can talk with the teacher about it and she will listen carefully.

Reliability = .70 (Cronbach's alpha coefficient)

6. Teacher Openness

1. Our teacher respects our opinions and encourages us to express them.

2. How often does your teacher let you ask questions?

3. Does your teacher let you express an opinion different from hers?

4. How often does your teacher let you explore your ideas and try out new ways of doing things?

5. When something at home or school upsets you, do you know that your teacher will listen to your problem and help you?

6. How often do you get a chance to help decide what you will do in class?

7. How often does your teacher let you choose an assignment which is interesting to you?

8. Does your teacher give you a chance to ask questions when you need help?

9. If I don't like something the teacher tells us to do, I can tell her my feelings and she won't be upset.

10. If I get a grade on an assignment or my report card that I think is not fair, I can talk with the teacher about it and she will listen carefully.

Reliability = .74 (Cronbach's alpha coefficient)

7. Opportunity to Work With Others

1. Are there times when your teacher lets you work in small groups?

2. How often do different students get to be class or group leaders?

3. Does your teacher let you talk quietly in small groups?

4. How often do you have time during which you can move about in your classroom?

5. Does your teacher have you help each other in class?

Reliability = .53 (Cronbach's alpha coefficient)

8. Parental Support of Schoolwork

1. Do your parents talk with you about what you are doing in school?

2. Do your parents ask you about how well you did on your assignments?

3. How often do your parents help you with your school assignments?

4. My parents have talked with me about how important it is to finish high school.

5. When I was younger, my parents wanted me to read aloud to them.

6. Most of the adults in my family (parents, aunts, uncles, grandparents) think that education is very important.

7. Do your parents visit the school for PTA meetings or Parent's Day?

8. My parents don't care about how well I do as long as I pass.

Reliability = .59 (Cronbach's alpha coefficient)

9. Teacher Support for Effort

1. How often does your teacher honestly praise you for the work you do well?

2. Does your teacher really want you to learn?

3. My teacher knows what kind of work I can do and she helps me when I need help.

4. When you start new work, does your teacher explain why this work is important to you?

Reliability = .60 (Cronbach's alpha coefficient)

15. Racism

1. No matter what a man's color, religion, or nationality, if he is qualified for a job he should get it.

2. Swimming pools should admit people of all races and nationalities to swim together in the same pool.

3. Hotels are right in refusing to admit people of certain races or nationalities.

4. People of certain races or religions should be kept out of important positions in our nation.

Reliability = .49 (Cronbach's alpha coefficient)

TEACHERS SCALE

8. Encourage Student Interaction

1. Students have to get permission from the teacher to talk to another student.

2. Should a teacher let students talk quietly in small groups?

3. How often should students have time during which they can move about in their classroom?

4. A teacher should encourage students to help each other in class.

Reliability = .69 (Cronbach's alpha coefficient)

Response Alternatives for Items in Most Student Scales and Teacher Scales are, depending on which is most grammatically correct, as follows:

1. Almost Always
2. Often
3. Sometimes
4. Seldom
5. Almost Never

or

1. I strongly agree
2. I agree
3. I am not certain
4. I disagree
5. I strongly disagree

Response Alternative for Student Scale 11 are:

1. Less than eighth grade
2. More than eight grade but did not graduate from high school
3. Finished high school
4. Attended college
5. Don't know