

SOUTHERN SCHOOLS
An Evaluation of the Effects of
The Emergency School Assistance Program
and of School Desegregation

Volume I

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AN OVERVIEW OF THE RESEARCH FINDINGS

In the 1971-72 school year, the Emergency School Assistance Program (ESAP) provided \$64 million in aid to desegregated schools, almost entirely in the South. The aid was limited only to the extent that it was for activities "designed to achieve successful desegregation." At the same time, the Office of Planning, Budgeting, and Evaluation of the Office of Education obligated some \$700,000 for this ESAP evaluation--ESAP-II, as the 1971-72 program was called.

The evaluation is interesting for three reasons: first, because the results of the evaluation show some positive gains in achievement for black male high school students as the result of ESAP-II; second, because the evaluation provided an opportunity to pursue some general questions about quality of education; and third, because this is the first large-scale federally funded evaluation in the area of education which used a genuine experimental design.

This final report of the evaluation is divided into two volumes. Volume I contains the body of the report, which has four chapters: an introduction, a discussion of the effects of ESAP and of school characteristics on student attitudes toward integration, an analysis of the effects of ESAP and school characteristics on tests of achievement, and a set of recommendations; these are followed by a series of technical appendices. Volume II of the report consists of a group of working papers that analyze some important issues related more generally to school desegregation, and includes copies of the questionnaires.

The Methodology of the Study

The evaluation began when the Office of Planning, Budgeting, and Evaluation sampled 150 pairs of schools (50 pairs of high schools and 100 pairs of elementary schools) that were eligible for ESAP funds and randomly

designated one school from each pair as a control school for an experiment. These 150 control schools received no ESAP funds; they were studied in order to compare them to the 150 similar schools which did receive funds.¹ In each pair, the school that received funds is different from the one that did not only because a flip of the coin chose one and not the other. Consequently, when we studied the schools a few months later, we could be almost certain that any difference between the ESAP-funded schools and the control schools was the result of ESAP. There is, of course, the possibility that the experimental schools were generally superior to the control schools when the study began; but this possibility would depend on the coin flip choosing the better of the two schools repeatedly, and is no more likely than the chance that a gambler could flip a fair coin and have it come up heads 35 times in 50 tosses.

It is difficult to overstate the importance of the experimental design. Had there not been an experiment, we would have had to compare schools that were deemed worthy of ESAP funds to those that were not; no matter what statistical tricks we attempted to make the two groups comparable, the question of whether or not the differences we believed to be the result of ESAP were due to some other differences between the two schools would have always remained open.

An experimental design is politically difficult; this experiment involved saying no to 150 school principals. For this reason it is important to report that the experiment was administratively a success. Most school superintendents were willing to cooperate; to our knowledge, there was little adverse community reaction as a result of the experiment.

In addition to the experimental design, a more conventional cross-sectional analysis was conducted in which the 214 experimental and control schools were combined with an additional 341 schools (making a total of 194 high schools and 361 elementary schools) and an analysis, along the lines of the well-known Equality of Educational Opportunity study,² was

¹In the final analysis, after various pairs were deleted for methodological reasons, there were 39 pairs of high schools and 68 pairs of elementary schools.

²James S. Coleman et al., Equality of Educational Opportunity (Washington: U.S. Government Printing Office, 1966).

carried out. Data were collected by interviewing ESAP Program Directors and school principals, administering questionnaires to teachers, administering achievement tests and questionnaires to students, conducting telephone interviews with community leaders, and collecting observational data from interviewers.

The Effects of ESAP

The principal finding of the study is that black male students in the high schools that were designated as experimental schools and received ESAP funds had achievement test scores that were approximately one-half grade level higher than black male students in the matched control schools that received no ESAP funds. As we noted earlier, this result might occur because the "coin flipping" procedure used to select experimental and control schools systematically selected schools with higher achievement as experimental schools. Since statistical procedures determining the probability of this happening indicate that there is one chance in a hundred that ESAP did not cause a gain in achievement, we feel confident in attributing this result to the presence of ESAP in the schools.

By the same token, we can conclude that there is no evidence in this study to indicate that ESAP raised the achievement of elementary school students, white students, or black high school females.

The experimental design also permits us to determine relatively precisely what the experimental schools did with their ESAP funds. Each school received an average of less than \$10,000. Elementary schools used the money for teacher's aides, counseling, in-service education for teachers, and remedial programs. High schools did some of the same things, but also spent ESAP funds trying to improve the quality of race relations in the schools through strengthening extracurricular activities, conducting in-service educational programs for faculty, and conducting and organizing programs in intergroup relations for students.

Thus, the big difference between high schools, where ESAP raised achievement, and elementary schools, where it did not, is that high schools spent funds attempting to change the way in which schools handled the racial

issue. Some of the evidence points to the likelihood that ESAP succeeded because a change in school race relations resulting from ESAP changed the motivation of black students. It is important to note the difference in the levels of confidence we have in the two statements we have made: we are fairly certain that ESAP raised achievement test scores of black male high school students; we are confident, but by no means certain, that this was because of improvements in the schools' racial climate affecting the motivation of these students.

The Effects of School Characteristics on Students

The cross-sectional analysis provided an opportunity for further research that both illuminated some new issues and gave meaning to the experimental design results. Only two student characteristics were analyzed in detail: student attitudes toward integration, and student achievement test scores.

Student Attitudes toward Integration

It is commonly assumed that Southern schools experienced desegregation as a painful overturning of traditional ways of race relations, and our data bear this out. While elementary school race relations seem surprisingly good (in these desegregated schools, two-fifths of the white students and one-half of the black students in fifth grade claimed that one of their three best friends is of the other race), high schools are experiencing some serious problems. In general, high school students are uncomfortable in the presence of large numbers of students of the other race, but there are things a school can do to help the transition. Our most important finding is that schools whose principals and teachers take liberal positions on racial issues had students who were more favorable to integration. We also found that urban schools that developed programs to improve intergroup relations succeeded in helping white students in particular to accept desegregation.

A statistical procedure, factor analysis, was used to divide the schools into different types. We found that some schools emphasized

innovative programs in curriculum organization and emphasized human relations activities, other schools emphasized a cluster of activities all related to guidance, counseling, and social work, and a third group of schools emphasized basic instructional services. The data indicate that schools that stressed curriculum organization and intergroup relations activities had students who were noticeably more favorable to integration than those that emphasized guidance and counseling or basic instructional services.

There has been considerable discussion of the danger that supposedly desegregated schools will in fact segregate black and white students into different classrooms as a result of achievement grouping. These data provide the first empirical analysis of that issue, and the results are complex. We found that there was a moderate amount of segregation of classrooms in elementary schools and that, as might be expected, the more segregated the school's classrooms, the more unfavorable were the attitudes of students toward integration. We also found that ability-grouped elementary schools had students with more unfavorable attitudes toward integration even if the ability grouping was conducted in such a way as to minimize classroom segregation. Thus we conclude that both achievement grouping and classroom segregation have unfortunate effects on the racial attitudes of elementary school students.

At the high school level we do not find such a pattern. There is no evidence that schools with high levels of ability grouping or high levels of classroom segregation had students with more unfavorable attitudes toward integration. The only high schools where classroom segregation and grouping had negative effects on student attitudes were schools that were both rural and conservative in their approach to race relations; otherwise, there were no negative effects. We hypothesize that achievement grouping is not harmful to racial attitudes for high school students in part because grouping insures that students with somewhat similar abilities and interests will associate with each other. We also found that very few schools use ability grouping to segregate students in non-academic activities.

Achievement Test Scores

As we expected, student characteristics had the greatest effect on achievement test scores, and the addition of special educational programs had little effect. This is not to say that "schools do not make a difference." We did find that characteristics of teachers and principals made a difference, and that some factors that might affect the motivation or morale of students made a difference.

Although the kinds of programs that are usually thought of as innovations aimed at improving the quality of education were on the whole unsuccessful, we did find one exception to this pattern. One-tenth of the high schools studied had a staff person designated as an audio-visual specialist, and these schools had high white and black achievement, even after careful statistical controls were implemented to match these schools to others in terms of factors such as social background of students and region of country. These 20 high schools were contacted by telephone and more careful information regarding their audio-visual activities was solicited. While the results cannot be interpreted as a firm recommendation, the data strongly suggest that a heavy use of audio-visual equipment in order to individualize instruction has a definite positive impact upon achievement.

Recommendations

In summary, this evaluation study makes six major recommendations for federal policy. Briefly, they are as follows:

1. Programs similar to ESAP should be maintained.
2. It seems quite likely that widespread use of media and tools for individualized instruction will be quite effective; additional evaluative research should be done in anticipation of increased funding in this area.
3. Elementary schools that choose to do achievement grouping should modify their methods of doing so; federal pressure to eliminate classroom segregation should be maintained.

4. Federal policy regarding achievement grouping in high schools should be more flexible.
5. There is a definite possibility that adoption of new innovations in the area of ungraded classrooms, team teaching, individualized instruction, open classrooms, and the like, and increased use of human relations activities, will have positive effects on the motivation and racial attitudes of urban elementary school students; such programs should be evaluated with a new experiment, and if the evaluation is positive, such programs should be incorporated in future federal legislation.
6. There is a definite possibility that federal pressures on local school districts for reform in the area of race relations are effective in improving the quality of education. These efforts should be evaluated, and if the evaluation is positive, they should be intensified.

The first recommendation follows directly from the fact that ESAP had positive impact on schools, and presumes that programs similar to it will have similar positive effects. The second recommendation calls for further experimental research dealing with the usage of audio-visual equipment as the next step toward establishing a federal program for increased funding in this area. The third and fourth recommendations are drawn from the cross-sectional analysis of the impact of achievement grouping and classroom segregation on student attitudes toward integration.

The fifth recommendation is based on our study of programs not funded by ESAP. We found that human relations activity and classroom reorganization to incorporate new innovations in curriculum are effective in improving attitudes toward integration in urban elementary schools. We found, however, that ESAP did not fund these activities in elementary schools, as they did in high schools, and therefore we recommend that experiments be done to determine need for human relations programs in elementary schools. The sixth recommendation is based on the study's finding that schools with more liberal racial policies had higher student motivation and more favorable student attitudes toward integration, and assumes that federal pressure, in requirements for such activities as biracial advisory commissions, has helped bring this about.

These six recommendations are described in considerably more detail in Chapter 4 of the report. In addition, that chapter contains a recommendation that federal evaluation programs use experimental designs wherever possible, and makes a series of specific technical recommendations regarding their methodology.

CHAPTER 1

INTRODUCTION

A Description of the Emergency School Assistance Program

The Emergency School Assistance Program (ESAP) was a small, temporary program of federal aid intended to help schools make the difficult transition from racial segregation to integration. The program was created and funded under the provisions of six existing legislative authorities, for school years 1970-71 (called "ESAP-I") and 1971-72 (called "ESAP-II"), in order to provide immediate assistance to desegregating school districts until the Emergency School Aid Act was passed by Congress. In school year 1971-72, \$64 million was granted to 452 school districts under ESAP-II; the great majority of these were in the South.¹ All were desegregated, and many were under court order to desegregate further during 1971-72. This report is an evaluation of ESAP-II, although the term "ESAP" is used in the report for brevity. Although the larger Emergency School Aid Act (ESAA) has now replaced ESAP, this evaluation remains relevant because the

¹Three priority groups were established for funding under ESAP-II. Priority I districts were those required to take new or additional steps respecting desegregation pursuant to a court order or order under Title VI of the Civil Rights Act of 1964 issued or modified on or after April 20, 1971 (the date of the United States Supreme Court decision in the case of Swann v. Charlotte-Mecklenburg Board of Education). Priority II districts were those required to take new or additional steps in 1971-72 although the Title IV plan or court order was issued prior to April 20, 1971. Priority III districts were those which had received ESAP grants the previous school year. The effect of these funding priorities was that the vast majority of grants were made to school districts in the South and Southwest, where the school systems had undergone the most litigation and experienced the most pressure to desegregate.

large Basic Grants program of ESAA authorizes activities very similar to those funded by ESAP.

The ESAP regulations permitted school districts to spend ESAP funds on a wide range of activities related to desegregation. In the wording of the ESAP regulations, funds were awarded for activities "designed to achieve successful desegregation and the elimination of all forms of discrimination." The regulations listed 27 examples of such activities, ranging from projects "promoting understanding among students, school staffs, parent and community groups" to "minor remodeling of existing facilities." The regulations specifically mentioned intergroup relations, community relations, school staff in-service education, employment of teacher's aides, remedial projects, counseling, and innovations in curriculum and school organization. Thus the program was specific only in its target--improving desegregated schools--but not in its means; the program suggested that any of a wide variety of tactics might succeed.

The schools in our sample received an average of \$10,000 each; they could (and did) spend that money on any of a wide variety of school activities. Some used the money to provide remedial services for under-achievers; others to provide in-service education for their staff preparatory to desegregation; still others used the funds to hire teacher's aides or guidance counselors. Since ESAP had defined its goal very broadly ("to contribute to achieving and maintaining desegregated school systems"), all these activities clearly fit within the intention of the program. The primary purpose of this research project is to evaluate the contribution that ESAP made. In order to make this evaluation, 100 high schools and 200 elementary schools were randomly selected in experimental-control pairs of schools so that a genuine experimental design was available. An additional 100 high schools and 200 elementary schools were studied to provide a cross-sectional study of 600 schools.

We have found, through this analysis, that ESAP funds did make a difference in the kinds of projects schools undertook. Elementary schools that received ESAP funds had more teacher's aides, more counseling, more in-service education for teachers, and more remedial programs. High schools

purchased instructional equipment, employed teacher's aides, and tried to adapt the school to new needs resulting from desegregation by modifying the curriculum, strengthening extracurricular activities, and conducting in-service educational programs for faculty. There is an important difference between high schools and elementary schools: high schools spent ESAP funds to change the way in which the school dealt with racial issues, but elementary schools did not.

The Organization of the Report

This study is aimed at answering two major questions. First, did ESAP make a difference? Second, and perhaps more important, what kinds of things were done (or could have been done) with ESAP money to improve schools? Answering these questions means looking at individual activities and trying to decide which ones work.

This, the first volume of the final report, presents the findings of our study of the effects of ESAP activities and other projects on improving the racial climate of schools as well as on raising academic achievement. The second volume is a more general study, examining the effects of desegregation and the way in which school characteristics affect school quality.

Volume I consists of four chapters and seven appendices. This chapter has two main purposes: (1) to describe the study, in terms of the experimental design, sampling, data collection, analysis method, and the overall logic of the analysis, and (2) to determine how ESAP funds were translated into activities undertaken by each school. The kinds of projects now in the schools, both those developed with ESAP funds and those funded by other federal, state, or local sources, are discussed.

Chapters 2 and 3 report the results of the evaluation. Chapter 2 studies ESAP's impact on students' attitudes toward integration, and Chapter 3 examines ESAP's effect on students' achievement. The reader who wishes a brief overview may read the introductions of those two chapters. Chapter 4 briefly states the conclusions of the study and their implications for policy recommendations. The first three appendices present additional analyses: Appendix A is a discussion of the experimental design

and its analysis; Appendix B presents in detail the regression analysis which evaluates the impact of programs on achievement; and Appendix C presents the regression of program impact on attitudes toward integration. Appendix D is a methodological analysis of the achievement test. Appendix E describes the scales constructed for the analysis. Appendix F describes the sample. Appendix G presents the intercorrelations among the program variables, and a factor analysis of programs.

The Experimental Design

The method of the study is a combination of an experiment and a cross-sectional analysis. The fact that this evaluation is based on a genuine experiment--the random allocation of ESAP funds to some schools while keeping others as controls--cannot be stressed too strongly. Now that our analysis is over, it seems clear that we would have great difficulty evaluating ESAP without the experiment. This is not to say that the more traditional cross-sectional approach is useless; there are many things we can do in that form of analysis that cannot be done by experiment. Consequently, we have used that form of analysis as well. The important difference between an experiment and a cross-sectional analysis of "natural" data has to do with establishing causal direction.

It is common knowledge that an experimental design is preferable to a nonexperimental study. The situation is not quite this simple--a conventional multivariate analysis is a useful adjunct to an experiment--but it is certainly true that in evaluating ESAP, an experiment is almost the only technique that will work.

It is important to observe that experimental and nonexperimental research have much in common. In all research, we wish to show that a "cause" variable affects some "result" variable. Ideally, we do this by locating two subjects identical in all respects, save that the cause variable is present for one subject and is not for the other. If at a later time the two subjects are found to differ on the result variable, we can conclude that the only possible explanation is that the cause variable did make the difference in the result. We then replicate our finding by

performing the same study on additional pairs of subjects. This logic of research is most easily met by experimental research.

It is rarely possible, however, to conduct experiments in human behavior, because we cannot simply administer the cause factor to subjects as if it were an injectable drug. In many cases, we cannot do so because we don't know how. We cannot, for example, study the effects of high achievement motivation on future income, because we do not know how to manipulate motivation. In other cases, we cannot administer a treatment without infringing upon the rights of subjects. For example, we cannot assess the impact of educational attainment on income by randomly prohibiting a control group from attending school. In still other cases, we cannot treat some subjects and not others because the sponsoring agency is unwilling to irritate the "deprived" group. There are other factors that make experimental treatments rare, but in part experimental treatments are uncommon because they are a new idea, which is only now becoming popular in evaluation.

In the absence of an experimental design, we would have had to locate subjects that did and did not possess the cause variable, to see if those that had the cause factor were more likely to also have the result. These "cause-present" and "cause-absent" subjects might differ in a variety of other ways; to overcome this problem, a great deal of statistical research has gone into developing multivariate analysis routines. These routines are designed to estimate statistically what would have happened if the subjects that differed on the cause factor had been matched on other characteristics. There are a host of procedures, ranging from cross-tabulation and standardization, to analysis of covariance, partial correlation, and multiple correlation, which all work to match the group of people for which the cause factor is present to another group for which it is not. Some procedures consist of dividing the cause-present and cause-absent groups into subgroups that are matched on other relevant characteristics (the "control variables"), and comparing the cause-present and cause-absent halves of each subgroup. Other procedures attempt to adjust the scores of each subject on the result variable to discount the

effects of those variables on which the cause-present and cause-absent groups are mismatched. No multivariate method, however, can overcome three critical problems:

1. The two groups are matched only on known, measurable variables. If the two groups differ in some unanticipated way, or differ on a characteristic that cannot be measured, the technique fails.
2. The multivariate method is weakened by the measurement error on the control variables.
3. Interpretation of the analysis requires that the researcher specify in detail the time-ordering of the cause, result, and control variables. This is frequently impossible to do; sometimes statistical analysis can help us choose between alternate time-order models, but usually it cannot.

The last problem, the time-ordering problem, can be partly solved by the use of a longitudinal design comparing measurements of causal variables at one time with changes in the result variable in the next time period. It is unfortunate that longitudinal designs, like experiments, are rare in policy research.

The problems mentioned above are sufficiently difficult to make an evaluation of ESAP impossible without an experiment. If we were simply to compare ESAP-funded schools with schools that did not receive ESAP funds, we would have great difficulty selecting the control variables for the analysis, and even more difficulty convincing ourselves that we had not omitted the most important ones. This would not be important if the ESAP effect were quite large; we could argue that the unmeasured mismatch between ESAP and non-ESAP schools could not be large enough to produce such a great difference between the two kinds of schools. It is almost inconceivable, however, that ESAP's effects would be this large. The same argument applies to the problems of measurement error. Even more difficult is the problem of causal direction. Suppose we found that ESAP-funded schools had worse race relations than non-ESAP schools. A reasonable explanation would be that school districts allocated funds to schools with the most serious problems, and that the poor quality of race relations

caused the presence of ESAP funds, rather than the other way around. Because of problems such as these, it would probably be impossible to evaluate ESAP.

An experiment neatly avoids such problems. If a group of subjects (in our case, schools) are randomly divided into two groups, and the cause variable is administered to one, then, within the constraints of sampling theory, the two groups must be similar on all other characteristics (known and unknown). This means that a multivariate analysis is unnecessary, and that it is unnecessary to administer a pretest to the two groups in order to verify their similarity. (Either a pretest or a multivariate analysis can be added to reduce error, hence making a smaller sample size acceptable.)

The basic design of this study is a "post-test-only control group design."² Campbell and Stanley observe that pretesting of the experimental and control groups is often done, but is not necessary:

For psychological reasons, it is difficult to give up "knowing for sure" that the experimental and control groups were "equal" before the differential experimental treatment. Nonetheless, the most adequate all-purpose assurance of lack of initial biases between groups is randomization. Within the limits of confidence stated by the tests of significance, randomization can suffice without the pretest. Actually, almost all of the agricultural experiments in the Fisher tradition are without pretest.³

Experimental designs, however, also have their limitations. First, an experiment can only test a small number of variables, as only a small number of treatments are usually administered. In our case, the experiment can tell us only whether ESAP made a difference, since the simple existence of ESAP funds is the only treatment. Since remedial reading was not a randomly assigned treatment, we must fall back on a cross-sectional analysis

²Donald T. Campbell and Julian C. Stanley, Experimental and Quasi-Experimental Designs for Research (Chicago: Rand McNally and Co., 1966), p. 25.

³Ibid.

to determine whether or not remedial reading is more effective than human relations activities. Second, experiments require that a period of time elapse between the administration of the treatment and the measurement of the effect. In this sense, they are like panel studies, which require a lapse of time between two measurements. This means that our experiment can only measure the short-run impact of ESAP; to assess the long-term impact of some school programs, we must use cross-sectional analysis.

The Logic of the Evaluation

There are serious problems in evaluating ESAP. The ESAP projects that were evaluated by the experimental design had been in existence only about six months. ESAP grants were for one year, and the 1971-72 grants were not received in most schools until after the school year began; our data were collected before the year was over. Thus, the programs that were evaluated were of very short duration. Furthermore, ESAP was a relatively small program, representing an investment of considerably less than 5 per cent of the total school budget. This amount was, in many cases, dwarfed by other federal programs, particularly Title I. ESAP was also a diffuse program; the analysis of it required the evaluation of teacher's aides in one school district, guidance counselors in another, and so forth. Even the intent of the program varied in important ways from one school to another. In some cases, ESAP was merely incorporated into the overall educational curriculum of the school, in others it represented an opportunity for innovation. In some school districts, a large fraction of the ESAP budget was devoted to activities intended to increase cognitive skills, in others it was used to work on problems of race relations.

Thus, for a variety of reasons, we defined our study more broadly than we would the usual evaluation. The primary purpose of the ESAP evaluation was to determine which activities were most successful and which least, in order to make a recommendation about how future funding could be directed to areas of the highest potential payoff. It is unlikely, however, that an activity funded by ESAP would be drastically different in style or results from a similar activity funded by Title I. We therefore

assumed that, once ESAP funds were spent to acquire additional staff or facilities for a particular school, neither the teachers nor the principal of that school would continue to be aware of the funding source. Consequently, we decided to carry out an evaluation of all activities occurring within the schools, regardless of the funding source. Thus, this study is nearly as much an evaluation of Title I as it is of ESAP. We also felt that in order to understand why particular activities had an impact on students, or why desegregation had certain effects, it would be necessary to understand the workings of the school as a whole. As a result, considerable effort was devoted to measuring characteristics of the principal and teaching staff, and to describing the intangible aspects of the school. Finally, we chose to divide the evaluation equally between achievement test results and changes in attitudes toward integration.

The analysis can be separated into four questions, as shown in Figure 1. Each question is represented graphically by a directed line; the two solid lines represent an analysis of the experiment, and the two dotted lines refer to the multivariate cross-sectional analysis. The first question concerns whether or not ESAP affected the operation of the school. Were ESAP funds used to increase such projects as remedial reading programs, guidance activities, and human relations efforts? Here the experimental design is important. Without it, we would virtually be forced to take the school administrator's word that the program funds made a difference. The second question is, did ESAP affect achievement and attitudes toward integration? This question can also be answered by the experiment. While the issue seems simple--are the scores higher in the experimental schools?--we have done the analysis in a somewhat more sophisticated fashion than necessary in order to get the most accurate estimates of the ESAP effect.

The third question concerns the impact of all sorts of activities, regardless of the funding source. If ESAP had no effect, is this because all school programs are valueless, or did ESAP fund the wrong activities? Or did they, perhaps, fund the right activities with too little money or for too short a period of time? If ESAP did have an effect, can we

determine which of the many activities ESAP provided explain ESAP's success? To answer these questions, we must embark on a multivariate cross-sectional analysis, using a larger sample.

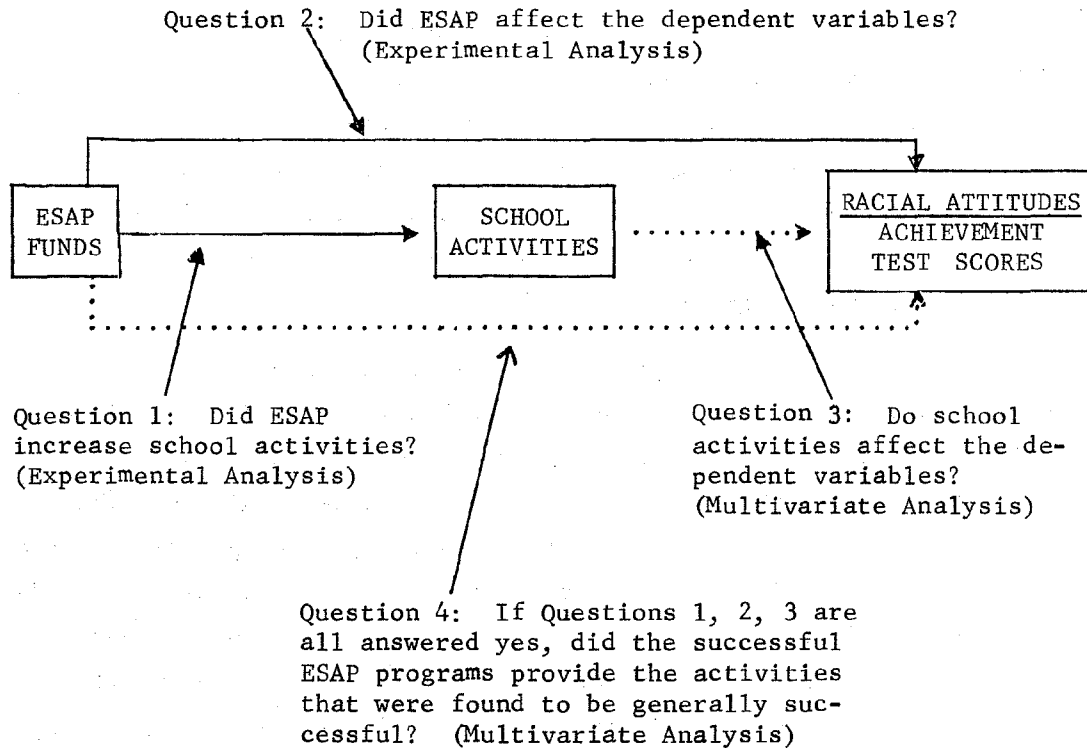


Figure 1.--The Three-Step Evaluation Design

Finally, there is a fourth question. We did find that ESAP provided a measurable increase in school activities, and that ESAP had an

effect on school achievement. Also, the analysis of school activities did show that certain activities aided achievement. The final question is essentially a consistency check on this positive evaluation of ESAP: Do the ESAP projects that led to achievement gains turn out to be the kinds of activities that the multivariate analysis found to be successful? This cross-sectional analysis, in which each unit is a matched pair of schools from the experimental design, is the most complex analysis, but it serves to validate the assumptions of the preceding analysis. It will verify that the experimental results are not mere sampling error, and that the assumptions underlying the multivariate analysis are sound.

The Sample

The sample consists of 598 schools, selected from 103 Southern school districts that received ESAP funds.

The sampling procedure is described in detail in Appendix F. Briefly, it is as follows: As school districts were awarded funds by ESAP, they were sampled, and the selected districts were notified by the Office of Planning, Budgeting, and Evaluation that they would be required to participate in the evaluation. Larger school districts were oversampled at this stage.

School districts were requested to send a list of the individual schools that they thought should receive ESAP funds. They were asked to group these schools into pairs, based on similarity of pupil characteristics. The Office of Education then randomly selected 100 pairs of elementary schools and 50 pairs of high schools, and randomly designated one school in each pair as a control. To increase the sample for the regression analysis, an additional 200 elementary schools and 100 high schools were randomly selected from the same districts. In the selection of this supplementary group, schools in the first year of desegregation were oversampled.

An analysis of possible sample biases revealed one serious problem. Eighteen school districts withdrew from the evaluation after they

were notified which schools had been selected as controls. It seems quite possible that the districts that withdrew from the sample were those in which the control was a school with serious racial or academic problems. The superintendents in these areas might have felt that they could not deprive these schools of federal funds. Conversely, a superintendent might have reconsidered withdrawing from the study when the control school turned out to be one which did not "need" funds as badly as other schools in his district. The Office of Education was clearly authorized to refuse funds to school districts that refused to participate in the evaluation, but the authorization was less than clear regarding the issue of control schools. A number of school superintendents must have suspected (correctly) that they could refuse to cooperate and still be funded. Thus there is a possible bias in the design toward the experimental school being more "needy."

Several efforts were made to determine whether such a bias existed, with mixed results. An analysis of covariance, which can correct for certain kinds of bias, was performed on the experimental design. The results of that analysis suggest that it did indeed correct for a bias. On the other hand, a reading of the correspondence with the 18 lost districts (summarized in Appendix F) shows little evidence of bias. Our interpretation of the data is that a bias does exist, but that it is not very large, and was partly corrected in the analysis of covariance.⁴

In summary, the execution of the experimental design was reasonably successful, and yielded a sample which, while not strictly representative of all Southern school districts, is sufficiently diverse. The sample seems to differ from a representative sample of schools in only two ways. First, larger school districts were oversampled, so that schools in large and

⁴It should be noted that the remaining uncorrected bias has the effect of slightly understating ESAP's effect. If "needy" schools were more likely to get funds, then ESAP schools should show lower achievement and worse racial attitudes; thus the effect of the bias is to make our analysis more conservative.

medium size cities were approximately twice as likely to fall in the sample than if it had been drawn in a strictly random fashion. Second, because of the way in which ESAP funds were awarded, and the manner in which the sampling was conducted, almost all the schools under study are biracial and are therefore likely to be newly desegregated. Hence, there is a distinct possibility that the analysis would not hold true for totally segregated black or white schools, for schools with a long history of desegregation, or for Northern schools. The reader should exercise caution in interpreting the descriptive statistics of the sample, since they are not representative of all Southern schools.

The Data Collection

The data used in this report were gathered from the following sources; sampling procedures are described in Appendix F.

In each school:

Questionnaires and achievement tests filled out by three randomly sampled classes of students (usually three fifth grade classes in elementary schools, or three tenth grade English classes in high schools). An average of 55 students completed the questionnaires in each school.

Questionnaires completed by 10 teachers in each school.

A personal interview with the school principal.

In each school district:

An interview with the administrator in charge of the expenditure of ESAP funds.

Four community leaders (by telephone interview).

Taken together, the questionnaires that were used in each school described the way in which ESAP funds were used, the school's special programs and supplementary personnel, the social background of the students, the quality of race relations, some aspects of the school's "social climate," and the performance, attitudes, and aspirations of the students.

The interview with the school district ESAP director was used to determine how ESAP funds were allocated, both in the district and in each school. The four community leader interviews were designed to give us a description of community factors (such as the level of civil rights activity) that might affect the schools. In almost all cases, the four community leaders were two blacks and two whites active in the community, but with no professional connection to the school system.

The school principal was asked to describe the programs and staffing of the school, and to give some statistical data, such as the dropout rate and the number of guidance counselors. We also asked attitudinal questions dealing with racial prejudice, perception of the quality of the teachers, and the like.

The ten teachers were selected so as to maximize the possibility that the students studied would have been taught by those teachers. The teachers' questionnaire focused on the teachers' attitudes toward their students, and on their perceptions of the quality of race relations and of the classroom climate. Measures of racial prejudice and attitudes toward teaching in general were also taken.

The questionnaire administered to the students dealt with their perceptions of their school and teachers, and their participation in various remedial programs. They were also asked a series of attitudinal questions related to motivation, happiness, and orientation toward school. After the questionnaire was administered by the interviewer, the students took a one hour achievement test. We used a short version of the Educational Testing Services' STEP battery. Ten to fifteen items were selected from each of five subtests of the fourth and ninth grade STEP batteries. The subtests were reading comprehension, language, mathematical concepts, mathematical computation, and science. If we had been interested in individual achievement, the standard five hour version of the test would, of course, have been preferable. But for our purpose--the analysis of

the mean achievement--the reliability range of the one hour test (.84 to .91) was quite satisfactory.⁵ We had excellent results from the tenth grade questionnaire and achievement test, and the fifth grade white student data are of good quality. However, an apparently large response error in the attitude questionnaire greatly hampers our ability to interpret the fifth grade black data. This problem is discussed in detail in Appendix D.

The Analysis Method

After the data were coded and edited for internal consistency, they were aggregated to the school level. For each school, a file was built containing the data from the interview with the principal, the percentage of teachers in the school giving particular responses to the various questions, and the percentage of students of each race who gave particular answers on the various attitudinal questions and on the achievement test. In addition, the data gathered at the school district level, from the interviews with the community leaders and the ESAP director, were disaggregated, and included in the file of every school in the school district. Thus, the final data base consisted of approximately 700 variables for the sample of 400 elementary schools and 200 high schools.

The experimental design results were evaluated by a multivariate analysis of covariance (see Appendix A). Beyond this, the analysis was conducted by a team of social scientists, and each analysis differs somewhat from every other, according to the personal style of the analyst. On the whole, we think this has provided a useful check on the analysis.

Much of the analysis is done by using stepwise multiple regression. The reader should be warned that any multivariate analysis procedure can only be interpreted with proper concern for the methodological problems inherent in the technique. We have made a considerable effort to avoid presenting the reader with uninterpretable regression equations. Because

⁵Reliability was measured by the Kuder-Richardson formula 20. See Appendix D.

of multicollinearity, we have been very cautious about adding variables to an equation when they were already partially represented. We have avoided using long equations, and have found in most cases that the sign of the zero-order correlation is not reversed when the variable is entered in the appropriate regression equation. We are relatively optimistic that our regression analyses are sound, but one can never be completely optimistic about this method.

In the regression analysis, and in other analyses in which the dependent variable is a student characteristic, each case (i.e., school) is weighted to reduce sampling error that might occur because of the small number of students sampled in each school. If n is the number of students of a particular race interviewed, the weight assigned to that school is $\frac{n}{n+k}$, where k is the ratio of the within-school variance to the between-school variance (usually approximately equal to three). The actual within-school/between-school variance ratio for achievement for each race and grade was used as the weight. (For a discussion of this, see Appendix B.)

Tests of significance are not given major consideration in this report, and we often interpret results that fall below traditional levels of statistical significance. We do this only under two conditions. First, when prior theory leads us to the strong expectation that the relationship shown is in fact reasonably close to the truth. Second, and more important, we usually have at least four independent observations, since, when we separate by race and grade, we have four different groups of students. Often, we separate them further into rural and urban schools. In some cases, therefore, we have as many as eight comparisons. A relationship that holds for several subgroups is persuasive even when one or more of the observations is not statistically significant.

We close this discussion by pointing out the two most important characteristics of this type of analysis. First, it is an analysis of schools. We are not concerned with determining which students have favorable attitudes toward integration, but rather which schools have students who are, on the average, more favorable to desegregation. Our report is

fundamentally intended to help make policy, and it is these between-school differences that are most likely to be of interest to policy-makers. By aggregating the results to the school level, we greatly simplify some of the horrendous problems that accompany analysis of schools. For example, we greatly reduce the effect of response error at the individual level. While this is true for the achievement test, it is even more true for the attitude variables.

Second, our analysis is conducted separately for each race. This simplifies the statistical problems of the analysis. For example, if the races were combined, a very large fraction of the reported level of racial attitudes of students would be "explained" by the racial composition of the school; black students are much more sympathetic to integration than are white students. This finding is not a school effect at all, and hence is not relevant to this study. By separating whites and blacks, we also greatly reduce the apparent impact of social class. Within each race, social class, as we have measured it, explains only 50 per cent or less of the total between-school variance in achievement. Had we combined both groups, we would find SES "explaining" a much larger fraction of between-school variance.

In addition, we are assuming throughout this report, that white and black students are affected in different ways by school variables. For example, we would assume that the race of the principal, if it has any effect, would have a stronger effect on students of one race than on those of the other.

How ESAP Funds Were Used

As we have said earlier in this report, ESAP funds were added to total school budgets, and there is no difference in practice between an activity that ESAP funded and an identical activity funded by Title I, or by state and local taxes. We cannot, therefore, say precisely what percentage of a given activity was bought with ESAP money, nor can we say which activities were created because ESAP could be used for one activity, thereby freeing funds for another. We can say, however, which activities are in

operation, and with the experimental design, we can compare the experimental and control schools. If an activity is found proportionately more often in ESAP-funded schools than in the matched controls, we can surmise that ESAP money was used directly or indirectly for this purpose. Thus, the first function of the experimental design is to give us good information about the way in which ESAP funds were used, although even this will not tell us the precise magnitude of the activity or the percentage of the total of ESAP funds that were spent on the project. Table 1.1 presents the percentage of experimental and control schools that have various activities for either the fifth or tenth grade.

The data are taken from the interviews obtained from the administrator responsible for ESAP and the principal of each school. For example, the ESAP director was asked, for each school in our sample, how many remedial reading specialists were paid from ESAP funds during the 1971-72 school year. This question was used to count 20 other kinds of specialists and 12 different types of supplies or equipment. Other questions inquired about teacher in-service education projects, and activities and personnel that were provided at the district level from which the sample schools might benefit.

The principal was not asked any questions about ESAP. Instead, he was asked questions such as, "How many full-time and part-time remedial reading teachers are currently working at this school?"⁶ The principal was then asked to select from a checklist the activities present in the school--such as remedial reading--and asked, "Considering the size, composition, and needs of your student body, tell me if the program is large enough or too small," "Did your school have remedial reading last year (1970-71)?" and "Is this program available to fifth graders (tenth graders)?" The principal was also asked seven questions about receipt of funds for supplies and physical plant improvements. In all, the principal's questionnaire defines 43 variables, some with more than one coding procedure.

⁶Wordings of questions asked of the principal are given in Appendix E.

This means that we are able to search through 60 activity variables for effects.

TABLE 1.1

ESAP'S IMPACT ON THE SCHOOL DISTRICT: PERCENTAGE OF SCHOOLS IN DISTRICTS WHERE ESAP FUNDS WERE USED FOR SPECIFIC ACTIVITIES

ESAP-Funded Activity	Per Cent
Teacher in-service education	84
Non-ethnic classes, materials	73
Other materials	66
Personal community activities	64
Teacher's aides	61
Administration	54
Non-personal community relations	44
Remedial programs	37
Student-to-student activities	31
Counseling support	31
Counseling	31
Ethnic classes, materials	28
Remedial personnel	27
Comprehensive planning	10
Facilities	07
Busing	01
Other	18

In Tables 1.1 and 1.2, the schools are weighted to make the sample representative of ESAP-funded Southern schools. (These are the only tables in the report weighted in this way.) A few of the percentages in Table 1.2 are obtained from other sources and are not weighted; they are indicated by an asterisk.

Table 1.1 presents an overview of the data. Two skilled coders read all of the ESAP administrators' questionnaires and determined whether any ESAP funds were spent in particular school districts for each of 17 different activities.⁷

The table indicates that ESAP funds were indeed spent in a variety of ways. Teacher in-service education appears in districts that include 84 per cent of all the schools. Most districts also spent funds to supplement their curriculums generally: 73 per cent on general coursework (exclusive of ethnic-oriented courses such as black studies) and 66 per cent on "other" miscellaneous materials. Sixty-four per cent of the schools are in districts that spent funds to develop personal contact with the community, increasing the acceptance of desegregation (personal community activities).

Sixty-one per cent of the schools were in districts that employed teacher's aides. Skipping down the table, we see that 31 per cent of the districts used ESAP for counseling, and 31 per cent for counseling support. Many, but not all, districts used ESAP funds for remedial work; 37 per cent for remedial programs, 27 per cent for remedial personnel. Thirty-one per cent of the districts used ESAP to develop extracurricular activities and other projects that would bring students together (student-to-student activities). Ethnic studies classes were instituted or expanded in 28 per cent of the districts. The small percentage of schools using funds for school buses reflects federal policy of low priority for transportation expenditures.⁸

⁷The categories are those used by Resource Management Corporation in their evaluation of ESAP-I, although the coding procedure is probably not identical. See RMC, Evaluation of the Emergency School Assistance Program, report #UR-163 (Resource Management, Bethesda, 1971).

⁸One should not assume that this restriction actually reduced the amount of busing in these districts. If districts were under court orders that required busing, this restriction only meant that non-ESAP funds were used.

In summary, Table 1.1 indicates a diffuse pattern of ESAP expenditures with heavy emphasis on teacher in-service training, community relations, and teacher's aides, and moderate emphasis on remedial education and counseling activities.

Table 1.2 presents a great deal of data, from several different sources, regarding the activities funded by ESAP in the schools in our sample. The table is divided by topic. Under each topic, the first entry (or entries) are data reported by the director of the ESAP program in the district; these data indicate the percentage of experimental schools that received a certain kind of aid. These figures, in the upper part of each section, are sometimes very hard to interpret, and they are likely to exaggerate the impact of ESAP funds. If a single community relations worker is employed in a large school district, it would be technically correct, but misleading, to say that ESAP provided community relations services for every school in the district. For this reason, the data in the lower part of each section of Table 1.2 are more useful. These data are taken from principals' reports of the presence of activities or personnel, regardless of the funding source, in the experimental and control schools. If the ESAP directors report that funds were spent on a certain activity, it follows that the experimental schools should have more of this activity than the control schools. If this is not the case, ESAP's contribution in this area must be negligible.

Remedial Programs

The data indicate that ESAP was used to develop new remedial projects, or to strengthen existing ones, in a small number of elementary schools. The ESAP administrators reported that 6 per cent of the elementary schools received funding for a remedial reading project, and that 9 per cent received a remedial reading specialist. Eight per cent received funds for tutoring, and 1 per cent for remedial math. The school differences are consistent with this: 10 per cent more of the experimental elementary school principals report having a remedial reading specialist, 16 per cent more report a remedial reading project, and 8 per cent more report tutoring.

TABLE 1.2

SCHOOLS RECEIVING ESAP FUNDS FOR SPECIFIED ACTIVITIES
AND SCHOOLS HAVING SPECIFIED ACTIVITIES

(Per Cent, except where indicated)

Activity	Schools Receiving ESAP Funds		Elementary Schools with Various Activities			High Schools with Various Activities		
	Elementary Schools	High Schools	Experimental	Control	Difference	Experimental	Control	Difference
<u>Remedial Programs</u>								
ESAP purchased:								
Reading program in school (EREADY)	6	6						
Math program in school (ERMATY)	1	4						
Remedial reading specialist (ERR72X)	9	4						
Tutoring (ETUTRY)	8	5						
School Differences:								
Remedial reading specialist (RR729X)			55	45	10	44	57	-13
Remedial reading program (READSY)			62	46	16	61	53	8
Remedial math specialist (RM729X)			14	13	1	26	32	- 6
Speech therapist (SP729X)			56	65	- 9	16	24	- 8
Tutoring program (TUTRSY)			46	38	8	32	29	3
Remedial scale:* (READSY + teacher reports learning about remedial + teacher reports extra reading time for poor readers)			38	35	3	-	-	-

*Variable not weighted.

-Data not applicable or not computed.

TABLE 1.2--Continued

Activity	Schools Receiving ESAP Funds		Elementary Schools with Various Activities			High Schools with Various Activities		
	Elemen- tary Schools	High Schools	Experi- mental	Control	Differ- ence	Experi- mental	Control	Differ- ence
<u>Teacher's Aides</u>								
ESAP purchased:								
Aides in school (ETE72X)	35	17						
School Differences:								
Aides program (AIDESY)			64	58	6	49	41	8
Aides in school (TE729X)			84	73	11	54	42	12
Median number of aides (in school with aides only) (TE729X)			2.3	2.6	- .3	2.7	1.9	- .8
Aides scale:* (teachers report having aide + report aide works with students + teachers report having time to be alone during day)			22	12	10	29	26	3
<u>Counseling Activities</u>								
ESAP purchased:								
Counselors (EGU72X)		6						
Counselor's aides (EC072X)		3						
School Differences:								
Counseling program (GUIDSY)			30	18	12	87	86	1
Counselors (mean) (GU729X)			.27	.17	.10	2.26	2.30	- .04
Counselor's aides (CO729X)			-	-	-	20	13	7

TABLE 1.2--Continued

Activity	Schools Receiving ESAP Funds		Elementary Schools with Various Activities			High Schools with Various Activities		
	Elementary Schools	High Schools	Experimental	Control	Difference	Experimental	Control	Difference
Teacher In-Service Education and Human Relations Programs								
ESAP purchased:								
In-service education (TRAINE)	61	50						
Specific to desegregation (TDESEE)	40	24						
Specific to remedial (TREMEE)	7	7						
In-service program in this school (TRAINE)	4	1						
Minority history course (EMHISY)	-	9						
Parent-school relations activity (EPAREY)	15	19						
Student relations activity (ESRELY)	10	11						
Community relations personnel in this school (ECR72X)	-	5						
Human relations literature (ELITRZ)	25	23						
School Differences:								
Teacher in-service education			93	83	10	84	81	3
Mean per cent of teachers reporting participating in in-service education			70	67	3	65	57	8

TABLE 1.2--Continued

Activity	Schools Receiving ESAP Funds		Elementary Schools with Various Activities			High Schools with Various Activities		
	Elementary Schools	High Schools	Experimental	Control	Difference	Experimental	Control	Difference
Mean per cent of teachers reporting:								
Over 1 week in-service education (TTIMET)			40	38	2	28	28	0
In-service education was valuable (TEVALT)			58	55	3	48	55	- 7
In-service education changed their teaching techniques (TCHANT)			47	52	- 5	43	46	- 3
Learned about teaching reading this year (LNREDT)			48	50	- 2	20	14	6
Learned about discipline this year (LNDIST)			51	55	- 4	41	50	- 9
Learned about intergroup relations this year (LNRELT)			50	58	- 8	51	56	- 5
Learned to be less afraid of other ethnic groups this year (LNCONT)			48	53	- 5	48	52	- 4
Learned about minority history this year (LNHIST)			35	30	5	34	28	6
Learned to handle heterogeneous classes this year (LNHANT)			55	60	- 5	52	52	0

TABLE 1.2--Continued

Activity	Schools Receiving ESAP Funds		Elementary Schools with Various Activities			High Schools with Various Activities		
	Elementary Schools	High Schools	Experimental	Control	Difference	Experimental	Control	Difference
Parent-school relations activity (PARESY)			63	63	0	61	41	20
Student relations activity (SRELSY)			51	56	- 5	70	57	13
Teacher relations activity (TRELSY)			50	54	- 4	64	40	24
Minority history course (MHISSY)						29	31	- 2
Biracial student committee (COMMSY)						78	69	9
Multiethnic curriculum scale:*(CREVSY + minority history + multiethnic texts + teachers report learning new materials + teachers report learning about minority groups)			28	24	4	55	45	10
<u>Extracurricular activities</u>								
School Differences:								
Extracurricular activities geared toward minority students (XACTSY)						19	8	11
Late school bus for after-school activities (XBUSSY)						26	13	13
Extracurricular scale:*(XACTSY + BI,W students report high participation + teacher reports of increased participation + principal's report on athletic teams)						55	55	0

TABLE 1.2--Continued

Activity	Schools Receiving ESAP Funds		Elementary Schools with Various Activities			High Schools with Various Activities		
	Elemen- tary Schools	High Schools	Experi- mental	Control	Differ- ence	Experi- mental	Control	Differ- ence
<u>Curriculum Revision, Classroom Organization</u>								
ESAP purchased:								
Curriculum revision (ECREVV)	7	10						
Demonstration classroom (EDEMNY)	2	-						
School Differences:								
Curriculum revision (CREVSY)			44	44	0	70	47	23
Demonstration classrooms (DEMNSY)			18	12	6	-	-	
Ungraded classrooms (UNGRSY)			16	35	-19	-	-	
Team teaching (TEAMSY)			33	32	1	-	-	
Special classes for underachievers (UACHSY)			33	27	6	65	50	15
Achievement grouping of classes (GRRMSY)			27	39	-12	75	75	0
Achievement grouping within classrooms (GRCLSY)			80	84	- 4	-	-	
Classroom organization scale:*								
(DEMNSY, UNGRSY, UACHSY, GRRMSY, GRCLSY + teachers report un- graded classes + teachers report learning new methods or discipline techniques or techniques for handling heterogeneous classes)			16	35	-19	39	45	- 6

TABLE 1.2--Continued

Activity	Schools Receiving ESAP Funds		Elementary Schools with Various Activities			High Schools with Various Activities		
	Elementary Schools	High Schools	Experimental	Control	Difference	Experimental	Control	Difference
Scale: Team teaching + teachers report team teaching			53	60	- 7			
<u>Vocational programs</u>								
ESAP purchased:								
Vocational programs (EVOCSY)		2						
School Differences:								
Vocational programs (VOCTSY)						95	85	10
Vocational education specialist (V0729X)						86	95	- 9
Scale: (VOCTSY + V0729X)						23	36	-13
<u>Other Specialists</u>								
School Differences:								
Social work programs (SOCWSY)			60	60	0	50	50	0
Social worker (S0729X)			18	26	- 8	18	8	10
Psychologist (PS729X)			26	17	9	15	10	5
Truant officer/home visitor (TR729X)			46	49	- 3	22	33	-11
Music teacher (MU729X)			60	72	-12	76	97	-20
Drama/speech teacher (DR729X)			11	15	- 4	40	56	-16
Gym teacher (GY729X)			63	63	0	93	96	- 3
Nurse (NU729X)			48	60	-12	52	46	6
Librarian (LI729X)			81	85	- 4	96	98	- 2

TABLE 1.2--Continued

Activity	Schools Receiving ESAP Funds		Elementary Schools with Various Activities			High Schools with Various Activities		
	Elementary Schools	High Schools	Experi- mental	Control	Differ- ence	Experi- mental	Control	Differ- ence
<u>Equipment</u>								
ESAP purchased:								
Instructional equipment (EMACHZ)	14	13						
Audio-visual supplies (EAVUSZ)	27	15						
School Differences:								
Audio-visual specialists (AU729X)						11	14	- 3
<u>Supplies</u>								
ESAP purchased:								
Textbooks (ETEXTZ)	5	16						
Teaching materials (ETMATZ)	52	44						
Testing materials (ETESTZ)	11	14						
Recreational materials (ERECRZ)	4	3						
School Differences:								
New textbooks (TEX12Z)			37	34	3	24	24	0
New testing materials (TST12Z)			37	38	- 1	26	26	0

Only one difference is negative: fewer experimental schools have speech therapists. The experimental-control differences, however, do not mean that these are highly developed programs; when we look at teachers' reports of the amount of remedial work in the schools (the remedial scale) we see only negligible gains.

In high schools, we see little evidence that ESAP strengthened the remedial projects. ESAP directors report that they provided remedial reading projects in 6 per cent of the schools, but employed remedial reading specialists in only 4 per cent. ESAP did provide a few remedial math programs (in 4 per cent of the schools). When we compare the experimental high schools to their controls, we see that experimental schools are more likely to have remedial reading programs and tutoring. These differences are not large, however, and the experimental schools are less likely to have remedial reading or math personnel, or speech therapists.

Teacher's Aides

The major use of ESAP funds for personnel seems to be for teacher's aides. The ESAP directors report that one-third of their elementary schools and one-sixth of their high schools received aides as a result of ESAP funding. In elementary schools, the impact shows, not in the number of aides per school (there is no difference between the experimental and control schools), but in the higher percentage of schools that have aides. In high school, ESAP apparently resulted in both an increase in the number of schools with aides, as well as an increase in the number of aides per school.

Guidance Programs

ESAP funds were used to employ a few additional high school counselors. However, results from the principal's questionnaire indicate that ESAP funds were often spent on elementary school counseling. The experimental elementary schools are much more likely to have counseling programs than the control schools. Apparently, the counseling programs were usually small; therefore, a relatively low level of ESAP funding

had a very noticeable impact. In the control schools there is one counselor for every six schools, while in the experimental schools there is slightly over one counselor for every four schools. In high schools, there is little difference between the experimental and control schools, indicating that ESAP funds were not spent on counseling in those grades.

Teacher In-Service Education and Human Relations Activity

We saw in Table 1.1 that 84 per cent of the districts invested some funds in in-service education. While these districts did not develop in-service educational opportunities for teachers in every school, they must have done so in a great many, since 61 per cent of the elementary schools and 50 per cent of the high schools had ESAP-funded teacher-education activities. In some cases the training was designed to prepare staff for desegregation; in other cases it was intended merely to implement other ESAP-funded programs. Remedial work was a focus of in-service education in only 7 per cent of the schools. In nearly every case, the in-service education program was set up to serve a number of schools simultaneously; only 4 per cent of the elementary schools and 1 per cent of the high schools report teacher education specifically for their school. This data would lead us to expect large experimental-control differences in the amount of teacher education. In fact, however, we see only small differences between the experimental and control schools in both the amount of education reported by the principal, and in the number of teachers who report receiving any training. Furthermore, neither elementary nor high school teachers in the experimental schools are at all more likely to report that they learned anything related to educational or racial issues in the school. The elementary and high school teachers in the experimental schools show only one consistently positive difference over those in control schools; they know more minority group history. But this could easily be the result of other ESAP activities, not teacher in-service education. For most of the items, there are slight negative differences between experimental and control schools, probably due to sampling error.

In conclusion, it appears that the funds expended for teacher in-service education did not result in any difference between experimental and control schools. We can see three possible explanations for this, with no way to determine whether any of them are correct:

1. ESAP spent little money on teacher in-service education, at least relative to the amount of funds from other sources. The high percentage of teachers in the control schools who spent over a week in in-service education indicates that even without ESAP, this type of project is a major expense. Since our evaluation of ESAP makes no attempt to assign costs to various activities, we don't know whether ESAP contributed small or large amounts of money to in-service education.

2. ESAP-funded in-service education was ineffective. This would explain why teachers in experimental schools were not more likely to report learning new things. Unfortunately, our data do not permit us to construct an argument either for or against this hypothesis. It is also dangerous to assume that teachers' reports of learning new things is highly correlated with what they in fact have learned.

3. ESAP funds for in-service education were spent on teachers in the control schools. It should be noted that almost all of these activities took place in centralized locations, with teachers from many schools participating. Proper administration of the experimental design would require that teachers in the control school be prohibited from attending ESAP-funded sessions. While we have no data on this, it seems plausible, a priori, that some administrators would ignore the experimental design.⁹

⁹The issue gets even more complicated if multiple sources of funds were used, since teachers in control schools should have been permitted to attend only that portion of the in-service education sessions funded by non-ESAP monies.

In elementary schools, ESAP provided only a small amount of human relations activity, with no discernible impact on the schools. For example, 15 per cent of the elementary schools were supposedly affected by parent-school relations programs, but the experimental schools do not report having these programs more often than the control schools. In high schools, however, we see a very sharp difference between the experimental and control schools in human relations activity, indicating that ESAP's greatest impact was in this area. Experimental high schools report having programs to improve intergroup relations among teachers in 64 per cent of the schools. It seems likely that ESAP directors classified these teacher relations programs as in-service education in some cases. This would explain why, for high schools, ESAP directors reported more teacher education and less human relations, while high school principals reported more human relations and less teacher education.

Extracurricular Activities

A few districts used ESAP funds to support extracurricular activities in high schools. Other funds were apparently not used in this area, so that the experimental-control differences are quite sharp. Principals in experimental high schools are twice as likely as those in the control schools (19 per cent to 8 per cent) to report that they have made a systematic effort to involve minority students in extracurricular activities. These principals are also twice as likely to report scheduling a bus to take students home after after-school activities. There is no evidence, however, that these efforts have actually succeeded in involving more students in extracurricular activities. Students in experimental schools are not more likely to say they are involved in extracurricular activities, and when this and other items are combined in a scale, no experimental-control difference appears. It appears that ESAP funds for extracurricular activities were aimed, not at developing more extracurricular activities of a general nature, but at developing black-oriented activities for a small number of students.

Curriculum Reorganization

The data indicate that ESAP funds were used to reorganize the curriculum in high schools but not in elementary schools. There is a sharp experimental-control difference in high schools (70 per cent of the experimental high schools reorganized their curriculum, compared to 47 per cent of the control schools). This reorganization was apparently not the result of instruction from the ESAP administrator's office, since that office reports ESAP-funded curriculum revision in only 10 per cent of the high schools and in none of the elementary schools.

Curriculum reform in elementary schools is highly fashionable now, with considerable national discussion of open classrooms and individualized instruction. The movement is focused around maximizing student freedom. ESAP funds are apparently not being used for this type of curriculum reform. Indeed, the control schools are more likely to have ungraded classrooms. While this is probably a mere sampling error, there are some rather unplausible hypotheses as to why the presence of ESAP funds would hinder the development of ungraded classrooms.

Vocational Programs, Other Specialists, Equipment and Supplies

The last part of Table 1.2 indicates a series of areas either where ESAP funds were not used, or where ESAP funds, relative to other sources of funding, made only a negligible contribution. For example, we see no evidence of ESAP expenditures for vocational education in high schools. In addition, we see that experimental schools do not differ from control schools in the presence of various types of school supporting staff people, from social workers to librarians. In nearly every case, the experimental schools have fewer specialists per pupil than do the control schools. (This may be sampling error; if there is a selection bias in the experimental design, as mentioned earlier, that bias might cause these differences. We consider that unlikely, however, since it is hard to imagine why "music teachers-per-student" is the best

measure of that bias.) Finally, we see that ESAP funds were used to provide some audio-visual equipment and teaching materials. A comparison of the experimental and control schools, however, suggests that ESAP monies played only a minor role, since the percentage of experimental and control schools receiving materials does not differ. Thus, the evidence is unclear; we do know that many districts spent ESAP funds for teaching materials, but we do not have evidence about how much money they spent.

It is difficult to summarize Table 1.2, in part because there are simply too many activities. Therefore, we will first attempt to reduce the number of variables in Table 1.2 through a factor analysis.

Clusters of Activities: A Factor Analysis

In order to gain an understanding of the relationships among the school projects, all activities questions from the questionnaire administered to the principals were factor-analyzed. The results are shown in Appendix G, along with a correlation matrix for the projects. The results are summarized in Tables 1.3 (for the fifth grade) and 1.4 (for the tenth grade).

In the factor analysis, 43 items were used: 19 giving counts of types of personnel, 18 on the presence or absence of certain activities, and 6 dealing with the provision of supplies and improvements in the physical plant. Since we are not dealing with questions of the use of ESAP funds, our analysis includes the entire sample of schools.

Because the program variables are identified using three different question formats, there is a noticeable tendency for both factor analyses to form separate factors according to format. Thus, for example, the first factor of the fifth grade analysis includes only counts of the number of specialists in the school since all the counts of this variable were gathered using a similar questionnaire format (see

TABLE 1.3

THE PRINCIPAL FACTORS OF FIFTH GRADE ACTIVITIES

Variables in Factor (loadings in parentheses)	Name and Description of Factor
<u>Factor 1:</u> Music teachers per student (.81) Gym teachers per student (.60) Counselors per student (.62) Librarians per student (.64) Administrators per student (.65) Speech therapists per student (.51)	<u>Auxiliary Personnel: Non-Instructional</u> Distinguishes schools which have high per-pupil expenditures for traditional supporting staff
<u>Factor 2:</u> Parent-school relations program (.59) Student relations program (.61) Teacher relations program (.61) Team teaching (.39) Demonstration classes (.39) Curriculum revision (.39)	<u>Intergroup Relations, Curriculum Reorganization</u> Human relations programs plus innovations in classroom organization
<u>Factor 3:</u> Remedial reading specialists per student (.53) Remedial reading program (.58) Testing material (.41) Teacher's aides program (.48) Teacher's aides per student (.47) Counselors per student (.26)	<u>Basic Instructional Services</u> Remedial programs, teachers aides: this is a modification of the school to maximize cognitive development according to conventional methods
<u>Factor 4:</u> Psychologists per pupil (.61) Social work program (.52) Speech therapist per pupil (.39) Social workers per pupil (.49) Home visitors per pupil (.26)	<u>Social Work and Guidance</u> Provision of social work support

Appendix E). The personnel that have the heaviest loadings on this factor are those filling traditional roles--music teachers, librarians, administrators. Any "good," well-staffed school, regardless of its ideological bias, is likely to have these positions.

All of the other three fifth grade factors reflect alternative strategies for improving education--human relations and curriculum reorganization (factor 2), basic instructional services (factor 3), and social work and guidance (factor 4). The strategies are not incompatible, but they are in conflict to the extent that many educators would argue for one of these factors in opposition to the others.

The core of factor 2 is human relations work with parents, students, or teachers. Also attached to this factor are three variables that measure the degree to which the school is involved in innovations of classroom organization. Team teaching loads on this factor, and ungraded classrooms are correlated with it, although its factor loading is below our criterion level. The data suggest that the main thrust of innovation in elementary school teaching is toward individualized instruction, reducing monotony, and establishing more one-to-one teacher-student contact. Apparently this orientation toward school reform is often associated with reformist racial activities as well.

Factor 3 emphasizes cognitive development and remedial work. Teacher's aides load on this factor, as does counseling. Achievement grouping is loaded on this factor, but below our criterion level. Thus, the overall "tone" of this factor suggests a traditional ideology.

The fourth factor may represent a different strategy, with a therapy-based, or interventionist ideology. All of the items loading on this factor deal with providing social workers or psychologists.

As we have seen, the fifth grade variables group into factors in part because the various activities share the same goals or use similar techniques, and in part because of the way in which otherwise unrelated activities stem from the same ideological orientation.

The tenth grade factors (Table 1.4) are less clear. The first factor represents a combination of human relations projects, instructional equipment, and in-service education. (Two of these activities also fit together into the second factor of the fifth grade analysis; two other variables, achievement grouping and counseling, fit in the third fifth grade factor.) All of the variables listed in the tenth grade factor 1 are from the same section of the principal's questionnaire, and the factor may be partly the result of the response set created by the common format of the questions. For example, the heaviest loading of any non-personnel variable is human relations literature. If this variable had not come from another part of the questionnaire, it would be in factor 1.

Intergroup relations variables appear in the first and the third factors. In factor 3, they are combined with variables describing the provision of school materials and physical remodeling. To some degree, the variables in factor 3 may reflect the reorganization of the school district, and may reflect new desegregation as well. Similarly, social workers load on both the second and fourth factors. In factor 2, they are part of a general remedial strategy very similar to factor 3 in the fifth grade. In factor 4, they combine with other variables in a "therapeutic" strategy, which includes, interestingly, music teachers.

The three principal dimensions of the fifth grade factor analysis--human relations, remedial programs, and social work--appear in the tenth grade factor analysis as well, but the rotation of the factors does not succeed in placing each of the components uniquely into one group. As noted earlier, however, it is very likely that the differences between the two factor analyses are a function of the response set of the three different question formats. The first factor in the fifth grade analysis had an organizing principle related to the number of

TABLE 1.4
THE PRINCIPAL FACTORS OF TENTH GRADE ACTIVITIES

Variables in Factor (loadings in parentheses)	Name and Description of Factor
<u>Factor 1:</u> Counseling program (.58) Student relations program (.57) Instructional equipment (.68) Teacher in-service education (.64) Achievement grouping (.45) Teacher relations program (.57)	<u>Intergroup Relations</u> Human relations programs, plus in-service training (which is often focused on human relations). But why does instructional equipment and achievement grouping fit in this dimension?
<u>Factor 2:</u> Teacher's aides per student (.79) Speech therapist per student (.56) Remedial reading specialist per student (.41) Aides program (.52) Social workers per student (.55)	<u>Basic Instructional Services, Social Work</u> Variables are all remedial staff, teacher's aides, or social work activity.
<u>Factor 3:</u> Textbooks (.57) Testing materials (.48) Additional space (.46) Renovations (.43) Human relations literature (.39) Teacher relations (.40) Student relations (.35)	<u>Intergroup Relations plus Materials and Physical Plant</u> All the supplies and renovations variables, plus intergroup relations programs
<u>Factor 4:</u> Psychologists per student (.55) Social workers per student (.53) Counselors per student (.50) Music teachers per student (.49)	<u>Social Work</u> Music teachers is an interesting addition to this factor.

specialists, and this may have permitted that analysis to separate the other activities more neatly. There is another difference between the fifth and tenth grade analyses. There is no organized high school classroom reform movement to parallel the ungraded class-team teaching movement in elementary schools, so these items, which help define the fifth grade factors, are missing.

The results of the analysis indicate that groups of projects cohere and may in fact represent manifestations of alternative theories of education or alternative ideological biases. Part of our analysis will be to determine if any of these alternative sets of projects seem preferable to others.

Conclusion: Is There a Pattern to ESAP Expenditures?

We may now examine the activities purchased by ESAP and ask two questions: Are the various activities consistent ideologically? Are they consistent in reflecting constraints that derive from the method of funding?

For elementary schools, the answer seems to be yes on both counts. Three major ESAP expenses--remedial programs, teacher's aides, and counseling--are all part of factor 3, basic instructional services. The other two areas of expenditure, teacher in-service education and teaching materials, are consistent with an emphasis on basic instructional services. It seems fair to characterize the elementary school ESAP program as a traditional program oriented toward cognitive development.

This pattern of expenditures is also what one would expect for a small program with short-term funding received during the school year. New professional staff could not be employed because of lack of time. For the same reason, major educational reforms could not be financed without more stable, long-term sources of funding. Consequently, funding constraints almost necessitate that ESAP be used to employ non-professionals, to buy blocs of time of existing professional staff to be used for in-service education, to purchase supplies and materials, and for administrative purposes.

The high school pattern is much more complex, much less traditional, and more inconsistent. One plausible way to fit the ESAP expenditures into the factor analysis is to argue that ESAP expenditures are limited to factors 1 and 2, intergroup relations and basic instructional services. One major ESAP expense, teacher's aides, has the heaviest loading of factor 2, and four ESAP-funded projects, in-service education, counseling, and student and teacher relations work, all relate to factor 1. Curriculum revision, the other item heavily funded by ESAP, does not appear in any factor.

ESAP did not result in the employment of additional professionals in the high schools; the pattern of high school expenditures, like that of the elementary schools, reflects the constraints of short-term funding.

If we ask why ESAP funds were used differently in high schools and elementary schools, the most compelling answer is that high school students are less passive than elementary school students. Being less passive, they are not only likely to create a more unpleasant racial situation, but are also likely to make sure that the school administration pay attention to any situation created. If elementary school teachers and principals believe that race relations are a problem, they can still reason that the solution to the problem is to change the students. This could occur through more or less traditional remedial programs. In high schools, it seems likely that school administrators must admit that race relations are a problem, and that their chances of changing their students are slim. Therefore, we argue that the elementary schools consider ESAP an opportunity to do what they prefer to do--basic instruction--while the high schools see it as an opportunity to do what they must do--change their curriculum and their staff's behavior..

CHAPTER 2

STUDENT ATTITUDES TOWARD INTEGRATION

Introduction and Overview

To judge whether the Emergency School Assistance Program was successful in making desegregation work, we might first examine whether or not it resulted in more favorable student attitudes toward desegregation. School race relations can be measured in many ways; we have chosen to study the degree to which students of each race approve of and want social and educational integration, and the degree to which they accept the ideal of racial equality. A brief overview of our analysis in this chapter is presented below.

The black students studied would be classified, by most standards, as being pro-integration. For example, three-quarters of the black high school students say they would like to have more white friends. White students, however, appear to be neither overwhelmingly pro- nor anti-integration. Slightly less than half of the white students would prefer an integrated school to an all-white one; about half say they would like to have more black friends. White fifth grade attitudes are generally more favorable toward integration than white tenth graders.

The attitudes of high school students are strongly related to certain characteristics of the school they attend. The data indicate that the school can be a liberalizing force on white students. Generally speaking, white students are more favorable toward integration when they have had more experience with school desegregation, when the faculty holds pro-integration attitudes, and when the school operates in a clearly non-discriminatory fashion. In addition, white attitudes are more favorable toward desegregation when whites are a very clear majority or a very small minority of the total student body and when there is little racial tension

in the school. Thus, some circumstances appear to be more conducive than others to developing or sustaining pro-integration attitudes.

We found that ESAP programs did not make student attitudes toward integration more favorable. This, however, oversimplifies a complex story. In high schools, ESAP often funded human relations programs, which did result in urban white student attitudes becoming more favorable toward integration (this is particularly true of programs aimed at changing teachers' behavior). The data seem to indicate, however, that other ESAP-funded programs, such as remedial and counseling programs, are associated with less favorable white student attitudes toward integration.

There is some evidence that black high school students in ESAP-funded schools believe their teachers to be pro-integration; this seems to make black students like school more, but it does not make them more favorable to integration, mainly because black students are so strongly pro-integration that there is little reason to expect attitudes to become much more favorable. Schools with middle-class black students, particularly in cities in the Upper South, are experiencing a decline in black student pro-integrationist sentiment. Whether this is a sign of new militancy or simply a scaling-down of previously unrealistic attitudes, the result is to make the racial attitude scale used here an incomplete criterion with which to evaluate gains in black attitudes.

Elementary schools also affect student attitudes; urban schools that emphasized human relations had white students who were more favorable to integration, and urban schools that adopted some of the new ideas in classroom organization had similar positive effects on black attitudes. However, ESAP did not usually fund these programs and hence had little effect on student attitudes in elementary schools.

The school can affect student attitudes toward integration in other ways. Early experience of integration helps; in both rural and urban areas, white high school students and both black and white elementary school students have higher pro-integration scores if they began integration in early grades. Generally, children are more favorable to integration if their teachers and principal are relatively unprejudiced and appear to like integration.

Elementary schools that separate children by ability either within classrooms or between classrooms have students with lower scores on the integration attitude scale. However, we found some rather interesting consequences of high school ability grouping. It is ordinarily assumed that grouping, since it tends to racially resegregate students in most cases, is an obstacle to successful desegregation. This is an assumption that has never before been tested; to our knowledge no previous study has made careful statistical comparisons between racial attitudes in different kinds of schools. These data indicate that in liberal high schools, ability grouping did not worsen racial attitudes of either black or white students.

The Dependent Variable: Attitudes toward Integration

An integration attitude scale was developed for both fifth and tenth grade pupils from the responses to several questionnaire items. The original questions, the responses, the scoring values for scale construction, the mean percentages of each student group giving pro-integration responses for each item,¹ and the standard deviations of the distribution of school percentages are shown in Table 2.1. As the table indicates, the tenth grade scale has three items, and the fifth has two. For tenth grade students, the mean percentage of favorable responses for each of the component items of the scale is more than twenty points higher for blacks than for whites; for fifth graders, the means are closer together.

The scale item intercorrelations, presented in Table 2.2, show that the tenth grade intercorrelations are higher for whites than for blacks. The average school scale scores are presented in Table 2.3. The scales are constructed by simply adding the scoring values for the responses to each item² and then computing a school mean. In this table, and in succeeding

¹Technically, the percentages given in Table 2.1 are school means; i.e., we computed the percentage giving the pro-integration response in each school and then computed the mean across schools (weighted, as always, to discount schools with few students of the race being studied). This differs only slightly from the overall percentage we would have obtained had we simply pooled the students, irrespective of school.

²The sum is multiplied by 3.33 to increase the range and eliminate the need to work with decimals.

TABLE 2.1

ATTITUDES TOWARD INTEGRATION, BY GRADE AND RACE

Question Number	Question (Scoring Value in Parentheses)	School Mean for Each Item (Per Cent); School Standard Deviations in Parentheses			
		Tenth Grade		Fifth Grade	
		White	Black	White	Black
10/43 5/18	If you could choose the kind of school you would go to, would you pick one with: All white students (0) All black students (0) A mixture of different kinds of students (2) Other (0) Blank (0)	41.9% (+19.2)	61.7% (+18.8)	47.4% (+19.9)	56.9% (+19.8)
10/45 5/28	Would you like to have more friends who are of a different race? Yes (2) No (0) Blank (0)	48.6% (+17.1)	75.7% (+14.6)	Not used in fifth grade	
10/53	How uncomfortable do you feel around students of a different race? Generally very uncomfortable (1) Generally somewhat uncomfortable (2) Occasionally somewhat uncomfortable (3) Not at all uncomfortable (4). . . Blank (3)	22.0% (+13.8)	49.9% (+16.8)	Not used in fifth grade	
5/33	In general, do you think that white people are smarter than black people, that black people are smarter than white people, or do you think a person's color doesn't have anything to do with how smart he is? White people are smarter (0) Black people are smarter (0) Color doesn't have anything to do with smartness (2) Blank (0)	Not used in tenth grade		91.7% (+ 8.4)	88.6% (+11.2)

Note: The percentages are for the most favorable response to each question, as indicated by the dotted line. Numbers in parentheses after each response indicate scoring value used in scale construction; see Table 2.3.

TABLE 2.2

ITEM INTERCORRELATIONS, INTEGRATION ATTITUDE SCALE

(Whites below Diagonal, Blacks above Diagonal)

Fifth Grade	Choose School	Color/ Smartness
Choose a school with a mixture of different kinds of students		.43
Color doesn't have anything to do with smartness	.39	

Tenth Grade	Choose School	Like More Friends	Not Uncomfortable
Choose a school with a mixture of different kinds of students		.34	.22
Like more friends of a different race	.81		.20
Not at all uncomfortable with students of a different race	.50	.48	

tables in this chapter, the schools have been divided into rural and urban subgroups, based on information in the County and City Data Book giving the per cent of the population in the county that was urban in 1960. Schools in counties that were 66 per cent or more urban are classified as urban; the remainder are classified as rural. The number of schools in each subgroup is given in the table.

Table 2.3 indicates that white high school students are much less in favor of integration than black students: the difference is over 2 standard deviations in rural areas, and about 1 standard deviation in urban areas. In contrast, the fifth grade white student attitudes are only slightly less liberal than those of black elementary school children. The main reason for this increasing racial difference among older students is that white tenth graders are not as liberal as white fifth graders.

TABLE 2.3

AVERAGE SCHOOL INTEGRATION ATTITUDES, BY GRADE AND URBANISM

(Standard Deviation Given in Brackets; Number of Schools
in Each Subgroup Given in Parentheses)

Urbanism	Tenth Grade		Fifth Grade	
	White	Black	White	Black
Rural . .	13.5 [± 2.6] (97)	19.0 [± 2.2] (86)	9.1 [± 1.7] (137)	9.3 [± 1.8] (125)
Urban . .	16.8 [± 2.6] (64)	19.4 [± 2.6] (59)	9.4 [± 1.7] (162)	10.0 [± 1.6] (145)
Range of actual scores	7-26	6-26	0-13	1-12

Note: See Table 2.1 for scale items and scoring values. Scale value is the sum of the scoring values times 3.33; if more than one question is unanswered, the score is not computed.

For example, both fifth and tenth graders were asked whether they thought whites were smarter than blacks.³ Ninety-two per cent of the fifth graders said "color doesn't make any difference." But for tenth graders, this percentage had dropped 77 per cent; nearly three times as many tenth graders said that whites are smarter. There are several possible explanations for this finding. It may be that the younger of these two groups is more liberal as a result of experiencing school integration earlier; when they become tenth graders, they will give more liberal responses than the present group of high school students. It may be that whites become more prejudiced in adolescence, as part of the adolescent search for identity. Finally, it may be that the older students are simply more candid; after all, black high school students do not generally perform as well on written tests.

³Note that the "which race is smarter" question was included in the integration attitude scale for fifth graders, but not for tenth graders. The longer tenth grade questionnaire provided other items that more closely measured the concept of acceptance of integration, and those other items were used instead.

The other item asked of both fifth and tenth graders, whether they would prefer an integrated or a segregated school, shows a slight tendency for fifth graders to be more favorable to integration: 47 per cent would prefer an integrated school, compared to 42 per cent of the tenth graders.

Differences Between Schools

In answer to the question--"Are there genuine differences between schools in attitudes toward integration?"--the results of our analysis indicate that the differences between schools are quite large at both the elementary and high school levels.

As is customary, we express differences between aggregate units in terms of the ratio variance between units to the total variance--the total being the sum of the variance within units and the variance between units. The results for racial attitudes are shown in Table 2.4: the between-school variance is about 15 per cent of the total variance.

TABLE 2.4

PER CENT OF VARIANCE IN RACIAL ATTITUDES
BETWEEN SCHOOLS, BY RACE AND GRADE

Grade and Race	σ^2 between schools
	σ^2 (total)
Fifth grade white	13.6
Fifth grade black	16.3
Tenth grade white	17.9
Tenth grade black	13.2

Many readers will look at this table and say that "only" 15 per cent of the variance lies between schools; that schools do not make a difference. In our opinion, this is a quite incorrect interpretation of the table. To assess the magnitude of the white high school differences, let us convert the integration attitude scale into more easily interpreted units and then

look at the actual distribution of school scores. In order to obtain the maximum score on the scale, all of the students in a school must say they are comfortable around students of the opposite race, that they want more friends of the opposite race, and that they would prefer attending an integrated school to a segregated one. Conversely, for a school to receive the lowest score, all of its students must give negative answers to these three questions. Since the three questions are weighted approximately equally, the mean score can be converted into the average percentage of students in a school giving pro-integration responses to these three questions. When we do this, we find that in the average high school, 45 per cent of the white students give pro-integration responses.⁴ We also find that the distribution of school scores has a standard deviation of 15.3 percentage points.

What does a standard deviation of 15 per cent mean? A hypothetical example may illustrate. If we divided our 200 high schools into 10 deciles (the 20 schools with the most anti-integration attitudes expressed by white students grouped into the lowest decile, the next 20 into the second decile, and so on, with the 20 schools whose students were most pro-integration grouped into the tenth decile), and computed the percentage of students in each decile giving pro-integration responses, we would obtain the results shown in Figure 2.1 (assuming a normal distribution, a reasonably safe assumption in these data). Of course, we must get a line moving from lower left to upper right. The real question is this: Are the differences between the schools small, so that the curve has a shallow slope, or are they large, so that the slope is steep? In the highest tenth of the schools, 70 per cent of the white students give pro-integration responses; in the lowest tenth, only one white student in five expresses favorable attitudes on these questions. The figure shows that the differences between schools are substantial. If we were to plot the other three groups, we would see similarly strong differences.

⁴In this example, we used the first two items of the attitude scale: 41.9 per cent of the whites prefer an integrated school and 48.6 per cent say that they want more black friends. See Table 2.1.

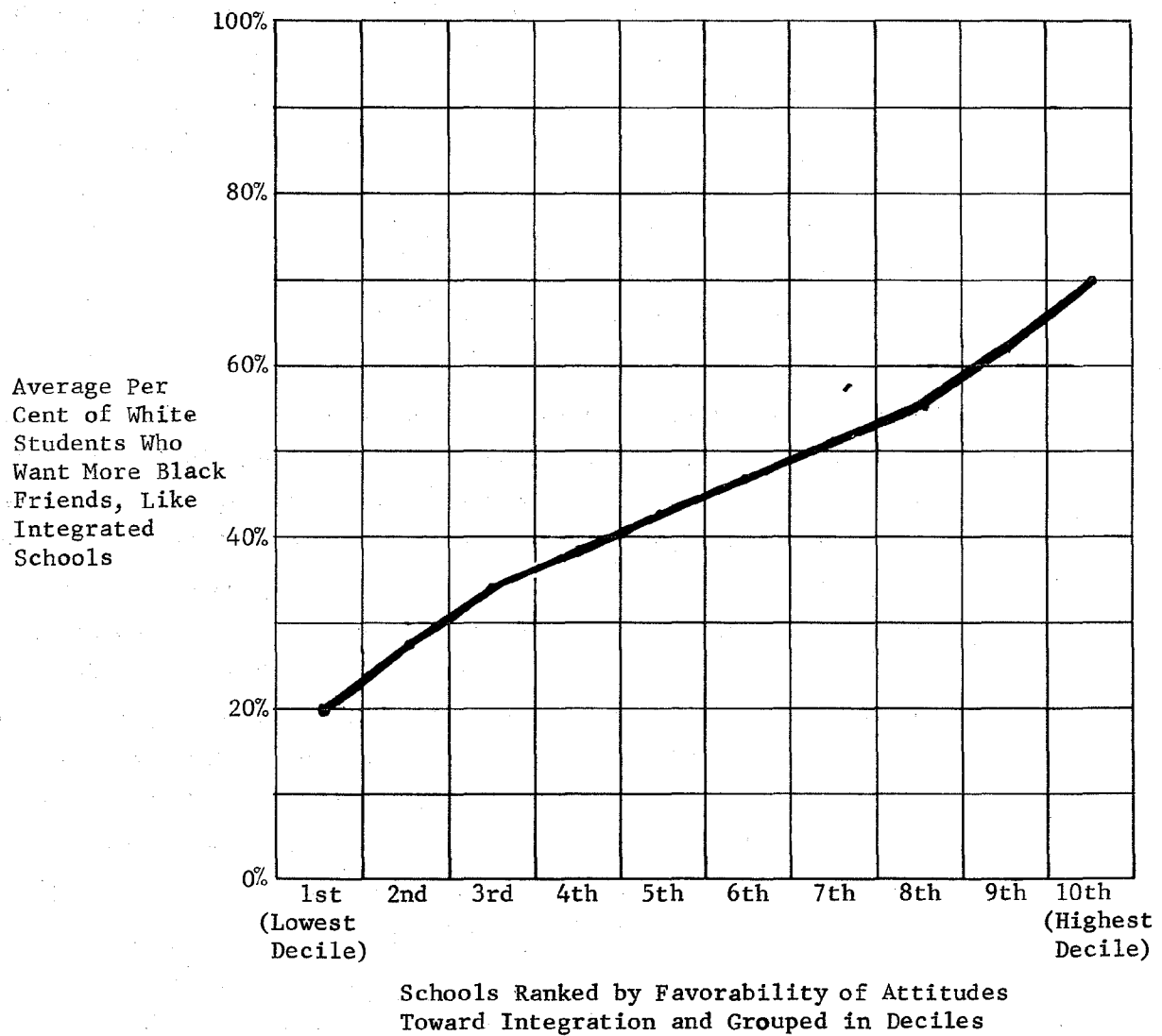


Figure 2.1.--The Difference between High Schools in White Student Attitudes toward Integration

Merely establishing that differences exist between schools does not mean that the schools can influence these differences--they may be entirely due to differences in the social composition of the student body. Thus, our next task is to investigate the impact of school factors in general, and the impact of the school student body composition in particular, to see if this will explain these large differences.

The Effects of Community Characteristics, the Extent and Timing of Desegregation, and Student Social Characteristics

In order to understand the causes of school differences in racial attitudes, we undertook a lengthy search for the best predictor variables. The procedure we chose was to build the best possible multiple regression equations, using a small number of the approximately 300 variables tested, for each combination of grade, race, and urbanism of the student body.

The equations were generated by first computing the correlation coefficients of the integration attitude scores (the same scale used in Table 2.3) of the eight subgroups with every variable in the study. All significant variables were located, and all which were logically prior in their effect to any program input were combined in stepwise multiple regression equations controlling on region,⁵ racial composition of the student body, and the socioeconomic status of the opposite race. All variables that failed to contribute .5 per cent additional variance uniquely were discarded. This procedure was carried out in full for each of the eight subgroups.

Racial composition, region, and the social status of both races were forced into every equation. The percentage white of the student body was entered as a quadratic term, to permit the solution to reflect any curvilinear relationship. The resulting equations are presented in Appendix C.

Perhaps the most interesting question we can ask of these data is whether the student's attitude toward integration is affected by the racial composition of the school he attends. The answer seems to be no for black

⁵Deep South (Louisiana, Mississippi, Alabama, Georgia, S. Carolina) vs. Upper or Peripheral South (Texas, Oklahoma, Tennessee, Virginia, N. Carolina, Florida).

students in both fifth and tenth grades: there are essentially no differences between the attitudes of black students in predominantly white schools from those in predominantly black schools. As we said earlier, black students favor integration, and their views seem unaffected by their actual experience with integration. For white fifth graders, the relationship between racial composition and attitudes toward integration seems too complicated to interpret. For this group, it is not obvious that integration has any "real" effect on attitudes.

There is a clear pattern for white high school students: white attitudes toward integration are more favorable when there is either a small minority or clear majority of whites in the school, especially in the rural schools. The explanation for this pattern seems to be this: white attitudes are good when there are a minority of whites, since those whites who strongly opposed integration have transferred out of the school. White attitudes are less positive and there is a higher level of tension in a racially balanced school, because each race is more threatening to the other in the struggle among groups of equal size for ascendancy in the school. Finally, white attitudes are good when there is a large majority of whites, because they are less threatened by blacks and, consequently, their attitude toward them is more positive.

While there are important differences between black and white students, elementary school and high school students, and urban and rural schools, there are two generalizations that apply to all eight student subpopulations: (1) racial attitudes are better when the achievement of the group in question is higher; and (2) student attitudes are better when there is little tension in the school.

There are four conclusions that can be drawn from examining the regression analysis of black attitudes:

1. In every case, blacks have better attitudes toward integration when staff attitudes are supportive.
2. With the exception of fifth grade rural blacks, black social class has an effect on black attitudes ranging from slightly to strongly negative, although black student attitudes are still more pro-integration than are those of whites. The negative effect is much greater in urban than in rural areas.

3. Urban blacks--particularly tenth graders--are more pro-integration in communities where there has been black civil rights activity.
4. Early integration has a positive effect for all fifth graders.

Similarly, there are four conclusions that can be drawn from the white student regression analysis:

1. As discussed earlier, tenth grade white racial attitudes are better when there is either a very small proportion of whites in the school, or when the per cent white is more than 60.
2. The attitudes of white students are better the longer their experience of integration.
3. Whites are more favorable to integration when some of the following school or community characteristics prevail: an integrated parent-teacher organization, integrated school student elite, black civil rights activity.
4. The attitudes of white students are much stronger when they receive support from pro-integration staff attitudes. There is a suggestion that schoolwide activities are more important for tenth graders, while in-classroom integrated activities are more salient for fifth graders.

The equations presented in Appendix C merit more than the brief discussion presented here. For the purposes of this chapter, however, we are primarily interested in generating control variable equations that will improve our estimates of the effect of ESAP and of various school activities. Some major variables in the control equations that we decided to use are briefly summarized in Table 2.5; the table indicates the percentage of variance explained by the equations and the principal components of the equation for each of the eight groups.

The equations presented in Table 2.5 were used in the regression analysis that follows, and were the basis for the selection of covariates in the analysis of the experimental design. (In Appendix C, longer equations, including variables not logically prior to ESAP, such as teacher behavior, are also shown.)

TABLE 2.5

CONTROL EQUATIONS FOR PRO-INTEGRATION ATTITUDES

Grade, Race, and Urbanism	Per Cent Variance Explained	Major Causes of Pro-Integration Attitudes
Fifth grade black urban	14	Low SES, early desegregation, much desegregation occurring
Fifth grade black rural	21	Early desegregation, much desegregation occurring, little white resistance
Tenth grade black urban	31	Southern, much civil rights activity in community, large school, low SES
Tenth grade black rural	11	White protests, low per-pupil expenditures
Fifth grade white urban	32	Early desegregation, high SES, community biracial committee is active
Fifth grade white rural	54	Northern, early desegregation, desegregation in the school this year, black principal
Tenth grade white urban	51	Early desegregation, high SES, previously black school, mostly white faculty, black protest about schools, much civil rights activity in community, predominantly white or black school
Tenth grade white rural	35	Previously black school, Northern, early desegregation, predominantly white or black school

ESAP and Attitudes toward Integration: Results of the Experiment

The results of the experiment indicate that ESAP did not alter the attitudes toward integration (as they are measured here) of either white or black students.⁶ The experiment was analyzed with a multivariate analysis of covariance (a detailed description of the analysis appears in Appendix A). Briefly, the technique is as follows. Mean attitude scores for white and black males and females were computed for each elementary school and each high school. One could simply compare the grand mean of the set of experimental schools with that of the control schools, but to do so would be to produce a weaker analysis than is necessary. By using an analysis of covariance, it is possible to improve on this technique in two ways.

First, the data can be "blocked" with each pair representing a different block. Blocking allows us to test the significance of the difference between the experimental school and its matched control school in the same school district. A simple test of significance for the experimental-control difference would compare the difference between the two means to the standard deviations of the two groups; the smaller the within-group variability, the more impressive a difference between the two groups becomes. Much of the within-group variance, however, results from differences that lie between pairs--racial attitudes in Mississippi are very different from those in Virginia--so that blocking each pair separately computes a variance for the control group and the experimental group that removes this between-district variance.

Second, an analysis of covariance uses a preliminary regression analysis to remove the effects of control variables that influence racial attitudes. If we know that the integration attitudes of white students are more favorable in schools that were black schools before desegregation, then, in comparing the experimental school to the control school, it makes

⁶ The fifth grade analysis uses a three item attitude toward integration scale, including the item "Would you like to have more friends who are of a different race?" (see Table 2.1); everywhere else in this chapter a two item scale is used, a result of an error in setting up the computer calculation. It seems likely that this error, although regrettable, has no noticeable effect on the interpretation.

sense to determine whether the racial histories of the two schools are different and to remove this effect.

Finally, the analysis has a third component: a multivariate analysis of covariance. In this technique, more than one dependent variable (in this case, the attitudes of each sex and each race) can be combined into a single overall score (via a least-squares analysis), in order to maximize the differences between the experimental and control schools. A multivariate analysis thus combines several dependent variables without losing each one's individuality; among other advantages, it provides a single test of significance for the experiment, instead of providing the mixed bag of significant and non-significant results one might expect to get from the analysis of several dependent variables.

The control variables used in the regression analysis were modified for the covariance analysis in two ways: (1) we limited ourselves to seven variables to conserve degrees of freedom, and (2) we used the same covariates for blacks, whites, urban, and rural to permit us to pool urban and rural schools (since our schools are paired within the same school district, they are automatically matched on urbanism) and in order to perform analyses of white and black attitudes simultaneously (to permit the multivariate analysis of covariance).

For fifth graders, all seven variables deal with the nature of desegregation: per cent of white and per cent of black students bused, mean number of years of integration for white and for black students, the principal's race, change in school racial composition since last year, and whether the school was white or black before desegregation. For tenth graders, only three variables deal with the desegregation plan, while the other four reflect school staff characteristics and racial policy; they are as follows: mean number of years of desegregation for white and for black students, whether the school was white or black before desegregation, the principal's age and per cent of teachers under age 35, the number of years the principal has been in his position (a powerful but mysterious predictor of student attitudes), and the principal's report of the degree of desegregation of the student council and cheerleaders (which we assume is largely unaffected

by the presence of ESAP funds). Note that student characteristics (such as social class) have only very small effects on attitudes toward desegregation and are not included.

The results of the multivariate analysis of covariance are given in Table 2.6. The first column of the table presents the standard deviation of the scale distribution across schools. The second and third columns show the raw means for the experimental and control schools; the difference between the experimental school mean and the control school mean is presented in the fourth column. These differences are all small--never more than one-fifth of the standard deviation given in column 1. In column 5, these differences are adjusted by the analysis of covariance, but the changes are small, and the standard error of the difference (not shown) to which they must be compared, is decreased very little. The result is that none of the eight adjusted differences come even close to significance.

In the note at the bottom of the table, we report the results of the multivariate test, pooling all four of the dependent variables for each grade level. Again, the results are not significant. In conclusion, it appears that ESAP did not affect student attitudes toward integration.

There is no evidence in this analysis that any fault in the experimental design, such as the possible sample bias we discussed in Chapter 1, has affected the analysis.⁷ There is, however, some data to suggest that we have selected an incorrect dependent variable. While the integration attitude scale scores show no difference between the experimental and control schools, some other measures of race related attitudes do show a difference. We shall discuss this phenomenon at the end of this chapter and in Chapter 3. For now, we proceed to our next task: finding out what does affect integration attitudes, now that we know that ESAP itself had no overall effect.

The Impact of School Activities on Racial Attitudes: A Regression Analysis

For both the elementary and the high school analysis, we combined experimental and control schools with the supplemental samples into a single

⁷That is, the difference between the raw attitude scores and the residual scores in the analysis of covariance does not suggest a bias.

TABLE 2.6

ESAP'S EFFECT ON ATTITUDES TOWARD INTEGRATION: THE RESULTS OF THE EXPERIMENTAL DESIGN

Grade, Race, and Sex	Unadjusted Scores			Difference: Experimental Control	Difference Adjusted for Social Background	Significance Level
	Standard Deviation	Mean Experimental	Mean Control			
<u>Fifth Grade:</u>						
White male . . .	2.5	12.8	13.0	-.2	.27	N.S.
White female . .	2.3	13.6	13.8	-.2	-.19	N.S.
Black male . . .	2.8	14.4	14.0	+.4	.56	N.S.
Black female . .	3.8	13.4	14.2	-.8	-.72	N.S.
<u>Tenth Grade:</u>						
White male . . .	2.4	13.3	12.9	+.4	.14	N.S.
White female . .	3.0	14.8	15.1	-.3	-.46	N.S.
Black male . . .	2.5	18.6	18.9	-.3	-.28	N.S.
Black female . .	3.3	19.4	19.0	+.4	.41	N.S.

Note: Multivariate significance test using all four dependent variables comined in a linear model:

Fifth grade: N.S.

Tenth grade: N.S.

cross-sectional multiple regression analysis of 361 elementary schools and 194 high schools. This alternative to the experimental design has certain strengths and certain weaknesses. One of its strengths is its larger sample size. More important, it provides us with a larger repertoire of activities to evaluate, since we can combine those funded by ESAP with those funded by other sources. Finally, with a cross-sectional multiple regression analysis we can examine programs that are of longer duration; if some of the ESAP-funded projects have not had time to achieve their full impact, similar activities funded by other sources may have been in existence longer and may show stronger relationships.

The most important drawback of the regression analysis is that it presents difficulties in drawing logical inferences from the data. In the experimental design, a difference between experimental and control schools could be attributed to the treatment, but in the regression analysis, a positive correlation between variables is no guarantee that the causal direction is from the independent variable to integration attitudes; it may well be a relationship caused by some unmeasured third variable, or even that the existence of a particular project is itself a result of the positive integration attitudes of the students.

The first step in the regression analysis involved examining the data to find the most important predictors of racial attitudes. This resulted in the control equations described above.

The second step involved placing the control variables in a series of multiple regression equations, with racial attitudes as the dependent variable and one program or activity as the independent variable. The activity variables were based on three sets of questions (described in Chapter 1 and presented in detail in Appendix D). In brief the variables included special personnel (not including regular classroom teachers), programs (such as tutoring, or student relations programs), and equipment or supplies. One variable, tracking, was a scale developed from four questions dealing with ability grouping; the scale is described later in this chapter.

These equations were repeated until all possible activities had been tested for each of the eight grade/race/urbanism combinations. Since there were 43 variables measuring activities in the elementary schools and 45 in

the high schools, and since each was tested for two racial groups and two urbanism groups, 352 separate equations $[(43 + 45) (2 \times 2)]$ were computed. Thus, the effect of each activity is reflected in the standardized regression coefficient resulting from a statistical model in which that single activity is entered with the control variables. Four-fifths of the standardized regression coefficients of the programs were negative or less than +.07 (in elementary schools) or +.08 (in high schools). The remaining 73 regression coefficients noticeably higher than 0 (although not necessarily statistically significant) were examined. The number of program variables that produced these positive regression coefficients is too large to be easily comprehended; we decided to select 14 of these variables, listed in Table 2.7, by the following criteria: the variable is listed only if (1) it has one standardized regression coefficient (beta) greater than +.18, (2) it has one beta of +.15 or greater and a second beta greater than +.07, or (3) it has one beta of +.12 or greater and two other betas at least +.07.⁸ Consequently, the 14 variables listed in Table 2.7 have strong associations with racial attitudes.⁹

Whenever a regression coefficient was between +.030 and +.064 (elementary schools) or +.074 (high schools), a plus sign (+) was entered in the table. Betas between +.030 and -.030 are shown as 0; betas below -.030 are reported as minus (-), no matter what their size. For example, student human relations activities has two large betas reported in Table 2.7. Only the signs of the other six betas, all of which are less than +.065 (elementary schools) or +.075 (high schools), are shown in the table. Only one of these small regression coefficients is over +.030; the remaining five are shown as "0" or negative. In all, there are 30 minus signs, indicating non-negligible negative regression coefficients, out of the 104 signs or values given in the table.

⁸ For significance at the .05 level (one-tailed test), the regression coefficients must be approximately .18 for high schools, .13 for elementary schools. Thus, the criteria used here combine a sense of statistical significance of the individual coefficients with a consideration of the statistical significance of a pattern of consistent positive coefficients (for example, a binomial test would indicate that a pattern of at least seven positive coefficients out of eight can occur only nine times in 256 combinations).

⁹ A fifteenth activity, ability grouping within classrooms, does not meet these criteria, and is included only for comparison, since the three other grouping variables (classes for underachievers, achievement grouping of classrooms, and tracking) do meet the criteria for inclusion.

TABLE 2.7

IMPACT OF ACTIVITIES ON ATTITUDES TOWARD INTEGRATION: A SUMMARY

Activities	Standardized regression coefficients from a regression of attitudes toward integration on school activity, controlling on other school characteristics							
	Grade, Race, and Urbanism							
	Urban				Rural			
	Fifth		Tenth		Fifth		Tenth	
	Black	White	Black	White	Black	White	Black	White
<u>Human Relations Activities:</u>								
Teacher relations	0	0	-	.19*	+	-	-	.10
Student relations	+	.17	0	.16	0	-	-	0
Intergroup literature	0	.10	.12	.08	+	-	+	-
<u>Classroom Reorganization:</u>								
Demonstration classes	.19*	.07			-	0		
Ungraded classrooms	.29*	+			-	0		
<u>Specialists (per student):</u>								
Librarians	.14*	0	0	-	.16*	+	-	.08
Nurses	.07	.10	-	-	.14*	+	.11	+
Speech therapists	+	0	-	-	.26*	.10	+	+
Gym teachers	0	0	.12	-	.11	+	+	.15
Administrators	+	+	-	-	.23*	.09	.09	.16
<u>Grouping:</u>								
Classes for underachievers.	-	0	-	+	.09	0	.17	0
Grouping of classrooms . . .	0	-	+	.21*	-	-	+	-
Tracking			0	+ ^a			.14	.13 ^a
Grouping within classrooms.	-	-			-	-		
<u>Other:</u>								
Textbooks	-	+	0	-	.15*	0	.10	.17

^aThe two control equations for these two coefficients have been modified slightly. For urban students, the degree of integration of cheerleaders and student council officers has been added, and the percentage of students who were students in the same school last year has been deleted, increasing the r^2 for the control equation to .59. For rural students, one of the two measures of white social status (mother's education) and one of the two measures of white students' previous integration experience (percentage with all previous schooling in segregated schools) has been omitted, decreasing r^2 to .31. The effect of the modifications is very minor; see the detailed analysis of ability grouping, p. 73-91.

*Significant, $p < .05$ (one-tailed).

Note: Blanks indicate activity not applicable to one grade level.

The activities listed in Table 2.7 that seem to have an effect on attitudes toward integration range from the obvious to the unexpected. If we accepted the regression coefficients in Table 2.7 at face value (which we are not willing to do just yet) we would conclude from the first three lines of the table that human relations efforts have a positive payoff for white urban students, and that expenditures for race relations literature have positive payoffs for black tenth graders and white urban fifth and tenth graders. Demonstration classes and ungraded classrooms (lines 4 and 5) seem to have striking positive effects on black students in urban elementary schools. The next five variables in the table all indicate that the addition of certain types of ancillary staff are associated with pro-integration attitudes. For the five categories of specialist personnel presented in the table, 19 of the betas (of a possible 20) are positive for rural areas; there are only 7 positive betas for urban areas.

The next four lines of the table indicate that ability grouping is quite harmful to attitudes in elementary schools. This is not true for high schools; indeed, grouping may actually improve racial attitudes there. This result is counter-intuitive; it is usually assumed that grouping is a device that increases racial segregation and thereby prevents white and black students from interacting.

We are reluctant, however, to conclude that the results of Table 2.7 indicate simple cause-effect relationships; the results are too puzzling. While some of the regression coefficients are rather large (14 coefficients are .15 or higher), suggesting that some sizeable positive effects are present, many of the variables have no obvious a priori relationship to racial attitudes. In addition, the results are never consistent for the urban and rural, the black and white, and the elementary and high school groups. Nearly every line in the table has one or more negative signs. The data are most inconsistent with respect to rural-urban differences: no age-race group has a similar pattern of regression coefficients for urban and for rural school categories. Indeed, for tenth grade white students, the regression coefficients are consistently opposite: of the 12 urban-rural comparisons, in

only two cases are both the urban and the rural coefficients above .030.¹⁰ Apparently, the social situation of white high school students in rural areas is radically different than that of white students in urban areas.

The across-grade and across-race comparisons are more consistent. In rural areas, black fifth graders generally seem to be affected by the activity and personnel variables in much the same way as black tenth graders; the same is true of rural whites.

Finally, the regression coefficients for white students tend to resemble those for black students in the same grade and level of urbanism. If we look at the signs of all 44 activity and personnel variables, including those whose effects are too small to be listed in Table 2.7, we find that, in general, a variable that is positively associated with rural white attitudes toward integration is also positively associated with rural black attitudes. These coefficients are all given in Appendix C. The consistency of signs of coefficients describing apparent effects of activities on rural fifth graders is shown in Table 2.8.

TABLE 2.8

COMPARISON OF SIGNS OF REGRESSION
COEFFICIENTS FOR 42 ACTIVITY AND
PERSONNEL VARIABLES: BLACK AND
WHITE RURAL FIFTH GRADE

Sign of Regression Coefficient for Whites Is:	Sign of Regression Coefficient for Blacks Is:	
	+	-
+	18	3
-	13	8

$$Q = +.57$$

The Q of +.57 indicates that the signs tend to be the same. Since many activities have a stronger positive effect on blacks than on whites, there are

¹⁰The measure of association, γ , between the signs of the coefficients for urban and rural tenth grade whites is -.8; the other three urban-rural comparisons have γ 's near zero.

13 cases where the black coefficient is positive and the white coefficient is negative. There are only three activities, however, that have negative coefficients for blacks and positive coefficients for whites.¹¹

This complex pattern of consistency and inconsistency makes it impossible to interpret the positive associations in Table 2.7 in terms of policy recommendations. We cannot say, for example, that human relations activities improve student attitudes toward integration without first doing further analysis.

As a next step, then, we will summarize the data with a second regression analysis using not individual activities, but instead the factors produced by the factor analysis described in Chapter 1. We will then re-examine Table 2.7, and attempt to select some activity or personnel variables for further analysis.

Summarizing the Impact of Activities Through Factor Analysis

Thus far we have investigated the impact of individual school activities. Investigating each activity individually generates a great deal of data. In this section, therefore, we shall attempt to reduce the total number of activity variables by scaling them using a factor analysis. In Chapter 1 we presented the results of a factor analysis of school activities. The first four factors produced by a factor analysis and varimax rotation of the correlation matrix of all school activities were similar but not identical for fifth and tenth grades. For this chapter, we constructed scales representing each of these four factors. To do so, we used the weights assigned to the major variables defining each activity, and built one cumulative scale to

¹¹In general, the more unsophisticated the student body, the more likely it is that a program will affect both races in the same way. Looking again at the list of program regression coefficients, the measure of association describing the tendency of the regression coefficients for whites and blacks to have the same sign is highest for rural elementary schools ($Q = +.57$), slightly lower for rural high schools ($Q = +.48$), much lower for urban elementary schools ($Q = +.20$), and lowest of all for urban high schools ($Q = +.09$). Urban high schools are also where the programs are most likely to be apparently counterproductive in terms of black racial attitudes: 57 per cent of the coefficients are negative.

represent each of the four factors for each grade. We then entered these scales as variables in regression equations to predict attitudes toward integration.¹² We used the same control variables as were used in the regression analysis of individual activities discussed in the preceding section. The results are shown in Table 2.9. For clarity, we have re-ordered the four factors.

TABLE 2.9

THE IMPACT OF PROGRAM STRATEGIES ON ATTITUDES TOWARD
INTEGRATION USING FACTOR ANALYSIS

Grade and Factor	Standardized Regression Coefficients			
	Urban		Rural	
	Black	White	Black	White
<u>Fifth Grade:</u>				
Factor 1: Auxiliary personnel, non-instructional	-.01	.02	.25*	.08
Factor 2: Intergroup relations, curriculum reorganization	.10	.11	.07	-.02
Factor 4: Social work, guidance . . .	.02	-.10	.16*	-.08
Factor 3: Basic instructional services	.09	-.13	.02	-.07
<u>Tenth Grade:</u>				
Factor 3: Intergroup relations, facilities	-.06	.01	-.01	.13
Factor 1: Intergroup relations	-.09	.09	-.06	-.01
Factor 4: Guidance and counseling . .	-.10	-.01	-.15	.04
Factor 2: Basic instructional services	-.15	-.07	-.08	-.02

*Coefficient is positively significant, $p < .05$ (one-tailed test).

Note: Factors described in Chapter 1, pages 35-40.

¹²The analysis is exactly parallel to that of the preceding section: each factor scale is entered alone in a separate equation.

Looking first at the positive coefficients in Table 2.9, the two statistically significant fifth grade rural black findings agree with the findings in Table 2.7, although interpretation remains muddy. Of the other coefficients, the intergroup relations results are the most consistently positive. At the fifth grade level, this factor is positive in three of four cases (the exception being a weak $-.02$), which parallels the individual program regression findings and strengthens the black student results. This factor includes not only intergroup relations programs but also a combination of team teaching, demonstration classrooms, and curriculum revision, and represents the "progressive syndrome." These are schools that are abreast of contemporary ideas about organization of elementary schools. The elementary school "reform" movement is aimed at improving the motivation and morale of the students, and these data suggest that the movement may be successful.

At the tenth grade level, the two highest coefficients for whites are for the two intergroup relations factors (although the highest, $+.13$, is raised by textbooks entering this factor). All coefficients for tenth grade blacks are negative, but the intergroup relations factors are less negative. More generally, within each grade/race/urbanization block, intergroup relations factors have the highest ranking (most positive or, for tenth grade blacks, least negative) in six of the eight blocks. In short, the factor analysis results provide some support for the idea that intergroup relations programs will improve attitudes toward integration.

In addition, the results of the factor analysis provide several conclusions based on the negative coefficients. First, no program factors appear to have a positive effect on tenth grade black racial attitudes. Second, the most negative coefficients are those associated with basic instructional services (where six of the eight coefficients are negative). Within each grade/race/urbanization category, basic instructional services factors are the lowest-ranking (most negative or, for fifth grade rural blacks, least positive) in five of the eight blocks. In none of the eight blocks are these factors the highest-ranking in the block. We will not present detailed analysis of basic instructional services programs, but the evidence strongly suggests that they have unfavorable effects on attitudes toward integration.

Third, guidance programs are represented in factor 4 of each grade level, and the coefficients associated with guidance programs are negative in five of the eight blocks. In two of the three blocks where basic instructional services is not the most negative factor, the guidance programs factor is; there are four other blocks where the guidance factor is next to lowest. Thus, in six of the eight tests, guidance has one of the two lowest coefficients (which renders the meaningfulness of the one high coefficient for guidance--fifth grade rural blacks--questionable).

What conclusions can we draw from these findings? In Chapter 1 we observed that these factors seemed to represent the three major ideological stances that might be taken toward education. The basic instructional services factor represents a narrow view of the function of the school, a heavy emphasis on cognitive development. The other factors all involve a concern with motivation, but while intergroup relations and curriculum reorganization represent an effort to change the school to accommodate the needs of students, the social work and guidance factors represent efforts to mold the student to meet the needs of the school. This analysis would indicate that only the intergroup relations and curriculum revision ideology will succeed in improving racial attitudes.

But the data also suggest that nothing will succeed very well in high schools. Although there are a number of positive coefficients for elementary schools, the high school coefficients are always negative for blacks, and only two of the eight white coefficients are as high as +.05. We noted earlier that high school student attitudes are a more serious problem than the attitudes of elementary school students; these data suggest that it is difficult to make any impact on those unfavorable attitudes.

How then shall we interpret Table 2.7? We seem to have developed consistent evidence that the human relations activities may be having an impact; consequently, we will examine these results in more detail in the next section.

There are two other interesting results that we have not pursued in further detail. First, the data suggest that, for rural schools, employing additional staff, simply modernizing the school by providing administrators and various specialized teachers and supporting staff, will have a

positive effect. In particular, resources for athletics may be helpful in improving racial attitudes (especially in the light of the achievement gains associated with employing more gym teachers, discussed in Chapter 3). Second, the data suggest that, for urban elementary schools, curriculum change such as team teaching and individualized instruction has a significant impact. Unfortunately, our measures of these activities are not sufficiently detailed or precise to pursue these suggestions.

There is a final set of results shown in Table 2.7 that we will pursue later in the chapter: in high schools, ability grouping is associated with positive attitudes toward integration. This is an important result, especially since it forces us to examine more closely the conventional wisdom of intellectuals and civil rights advocates, which holds that tracking is unqualifiedly harmful.

The Human Relations Activities Effects

As we have seen, Table 2.7 indicates that both teacher human relations activities and student human relations activities have positive correlations with the pro-integration attitudes of tenth grade white urban students. Student relations activities also have a positive effect on the integration attitudes of fifth grade white urban students. There are two other positive relationships: the effects of human relations literature on black urban high school students and of teacher relations programs on white rural high school students.

Table 2.10 presents the data in detail. The key columns are the second, the regression coefficient, and the fifth, the per cent of variance explained uniquely. It is also important to compare the beta to the zero-order correlation coefficient. Since poor measurement of the control variables understates their impact, one should routinely assume that the beta is not as different from the correlation coefficient as it should be.¹³ Thus when the third column, the difference between the beta and the correlation coefficient, is positive, the beta is larger than r ; with better controls, it should be even larger. Conversely, if $(\text{beta}-r)$ is negative,

¹³We are here assuming random measurement error. See H.B. Blalock, Causal Inferences in Non-Experimental Research (Chapel Hill: The University of North Carolina Press, 1961) p. 149.

TABLE 2.10

IMPACT OF HUMAN RELATIONS ACTIVITIES ON RACIAL ATTITUDES

Group and Program	r	Beta	Beta-r	r ²	Unique Variance Added (Per Cent)	Ratio of Unique Variance Added/r ²
<u>White, High School, Urban:</u>						
Teacher relations activities	.152	.193	.041	.0231	.0314	1.36
Student relations activities	.095	.162	.068	.0089	.0221	2.48
Human relations literature .	.099	.076	-.022	.0097	.0049	.50
<u>Black, High School, Urban:</u>						
Teacher relations activities	.050	-.054	-.104	.0024	.0025	1.04
Student relations activities	-.073	-.017	.056	.0052	.0002	.04
Human relations literature .	.080	.122	.042	.0064	.0130	2.03
<u>White, Elementary School, Urban:</u>						
Teacher relations activities	.017	.009	-.008	.0002	.0000	.00
Student relations activities	.158	.170	.012	.0250	.0274	1.10
Human relations literature .	.152	.100	.052	.0230	.0092	.40
<u>Black, Elementary School, Urban:</u>						
Teacher relations activities	.037	.018	-.020	.0013	.0002	.15
Student relations activities	.078	.036	-.042	.0060	.0011	.18
Human relations literature .	.031	.014	-.017	.0009	.0001	.12
<u>White, High School, Rural:</u>						
Teacher relations activities	.098	.104	.006	.0095	.0104	1.09
Student relations activities	-.004	-.025	-.021	.0001	.0007	7.00
Human relations literature .	.071	-.092	-.163	.0050	.0069	1.38
<u>Black, High School, Rural:</u>						
Teacher relations activities	-.048	-.111	-.063	.0022	.0112	.54
Student relations activities	-.051	-.043	.008	.0025	.0160	.64
Human relations literature .	.092	.050	-.042	.0085	.0019	.22
<u>White, Elementary School, Rural:</u>						
Teacher relations activities	-.119	-.052	.067	.0142	.0024	.17
Student relations activities	-.021	-.063	-.042	.0004	.0035	8.75
Human relations literature	.171	-.060	-.231	.0291	.0002	.01
<u>Black, Elementary School, Rural:</u>						
Teacher relations activities	.007	.061	.054	.0000	.0031	.00
Student relations activities	.003	.009	.006	.0000	.0000	.00
Human relations literature .	.089	.052	-.037	.0075	.0023	.31

controls are pushing the beta down; presumably, better controls would push it down further. Hence, a positive beta with a positive (beta-r) is more impressive than the same beta with a negative (beta-r). Similarly, the last column, which gives the ratio of the unique variance explained to the zero-order r^2 , is a valuable guide.

Table 2.10 shows a pattern of positive coefficients for white urban elementary and high school students, and for black elementary school students, both urban and rural: all 12 of the betas are positive. The urban white high school effects are very large, as is one of the white urban elementary school effects. For the two rural white and the two groups of black high school students, 9 of the 12 effects are negative.

At this point, it would be helpful to look more closely at human relations activities. One indication of their content is gained by the correlations of student and teacher relations programs (Table 2.11).

Table 2.11 indicates that if a principal reports that he has an adequate teacher relations project, it is also likely that there will be reports of teacher training, projects to work with parents, and to a lesser extent, curriculum revisions, minority history courses, and an increase in human relations literature in the school. These findings, together with the .51 correlation between teacher relations and student relations projects, indicate that schools that have one of these activities are also likely to have some of the others. This finding suggests, in effect, that these activities are instituted as a package. When a school institutes a human relations effort, it is likely to involve more than one of the following areas: the relations among teachers, the relations among students, the relations between teachers and students, and the relations between the school and parents in the community.

Table 2.11 also provides other evidence on the nature of the programs. For example, positive correlations of student relations projects with both minority history and a student biracial committee suggest that such activities are both academic and social. Teacher programs may include training in coping with student intergroup relations, instruction of disadvantaged students, and programs to increase parent-teacher contact.

TABLE 2.11

CORRELATIONS OF TEACHER AND STUDENT HUMAN RELATIONS PROJECTS
WITH OTHER SELECTED ACTIVITIES IN HIGH SCHOOLS

Activity	Correlations with principal's reports of projects to improve intergroup relations among:	
	Teachers	Students
Teacher's reports of in-service service education on instruction of disadvantaged students, de-segregation, or intergroup relations	.37	.15
Principal's reports of in-service education	.43	.29
Principal's reports of minority history	.11	.26
Principal's reports of curriculum revision	.05	.28
Principal's reports of parent relations program	.47	.31
Principal's reports of biracial student advisory committee	.29	.32
Principal's reports of human relations literature	.26	.17

Examining tenth grade white urban student effects, we see that while having student or teacher relations programs is positively associated with pro-integration attitudes, student relations programs are negatively correlated with white social class (-.18), early integration (-.25), and white achievement (-.22). Clearly, student relations programs have been initiated in settings that might be conducive to racial conflict and poor racial attitudes. To a lesser extent, teacher relations programs, which had correlations of .14 with black social class, -.16 with white social class, -.18 with early integration, and -.10 with white achievement, were instituted in similar settings. Hence, the favorable attitudes toward integration in schools with human relations programs comes despite the unfavorable climate.

This interpretation suggests first, potential or actual racial tension in a school; second, the institution of human relations activities to forestall it; and third, an actual reduction in racial tension and improvement in racial attitudes. As with any post hoc explanation, however, this analysis may be spurious. Human relations activities may not follow from potentially volatile situations, and they may not have a direct effect on attitudes. If so, other factors may be compounded. First, the institution of human relations activities may indicate the resolve of a superintendent or principal to maintain good racial attitudes. The human relations activities would then be one small part of an overall effort that may be expressed more forcefully in other ways. Second, teacher relations programs may not be in themselves a cause of better racial attitudes. Teachers may view the programs as indications of the value that superiors place on good racial attitudes and the resolve that teachers must assist in effecting such attitudes. Teachers may feel they are simultaneously being given assistance in improving their interpersonal relations and covertly being ordered to improve them. A similar form of constraint may obtain between teachers and students. Students are given educational materials to change their attitudes but they may also be under pressure from staff to change their behavior or to maintain satisfactory behavior. Finally, the teacher programs are positively correlated (.18) with the presence of civil rights activities in the district, so that teachers may also be under direct or indirect pressure from the community.

Two processes may therefore be working concurrently: (1) Teachers may be under pressure from the principal and perhaps the superintendent to improve their racial interrelations; pupils may be under similar pressure, particularly from teachers. (2) Human relations programs may be both a direct means of educating school teachers and pupils to have better racial attitudes and an indicator of other direct and indirect pressures to effect better racial attitudes. In sum, caution must be exercised in drawing the conclusion that pro-integration attitudes are increased by good human relations programs.

We can only speculate about why these human relations programs affect only part of the sample population. Perhaps black high school students, who already have favorable attitudes toward integration, and whose attitudes are

strongly related to civil rights activity often aimed at achieving integration, simply do not respond to such efforts. The programs themselves may be geared to white students, who more often come from segregationist families and both need and can profit from human relations efforts in the schools.

The Effect of Ability Grouping

We saw in Table 2.7 that ability grouping was associated with less favorable attitudes toward integration for elementary school students, but not for high school students. There is even a slight tendency for tracked¹⁴ high schools to have more favorable attitudes toward integration on the part of both white and black students. We noted that this result is counter-intuitive, that most scholars would assume that ability grouping, because it segregated students, would sustain prejudiced attitudes. We will see that this argument against grouping must be refined for fifth grade students, and that it is almost completely inadequate for high schools.

First, let us examine in more detail the direct effects of achievement grouping on attitudes toward integration. Table 2.12 presents the data. The upper half of the table presents the high school results, using a scale of tracking (described later in this section).¹⁵ All four of the standardized regression coefficients are positive,¹⁶ but only two are above .08, and

¹⁴Tracking and grouping are used interchangeably here, although we realize that in technical usage, the words sometimes have different meanings.

¹⁵The principal's report of the extent of achievement grouping in high schools is not used here, since it is a much less reliable measure than the tracking scale. While the regression results for this variable yield the same general conclusion as those for achievement grouping, results for tenth grade white rural students are strikingly inconsistent (see Table 2.7).

¹⁶We noted earlier that the control equations used for white high school students in this analysis differ slightly from those used elsewhere in this chapter. In all, a number of different analyses, using slightly different equations and different independent variables were carried out. On the whole, the results were generally consistent in the sense that the regression coefficients were almost never negative. Thus the overall conclusion of this section--that ability grouping has no harmful effects on tenth grade student attitudes--is consistently supported. The one possible exception is tenth grade white rural students; we shall see later some possibly negative effects for this group.

TABLE 2.12

THE EFFECTS OF ACHIEVEMENT GROUPING ON RACIAL ATTITUDES

Group and Program	r	β	$\beta - r$	r^2	Unique Variance Added	Ratio: Unique Variance Added/ r^2
<u>High School:</u> ^a						
White urban	.055	.065	.010	.0030	.0033	1.1
White rural	.229	.130	-.099	.0522	.0140	.27
Black urban	-.025	.016	.041	.0006	.0002	.35
Black rural	.036	.135	.099	.0012	.0148	11.40
<u>Elementary School:</u> ^b						
White urban	-.155	-.123	.032	.0240	.0140	.58
	-.061	-.199	-.058	.0036	.0134	3.72
White rural	-.101	-.067	.034	.0101	.0037	.37
	-.083	-.081	.002	.0068	.0074	1.09
Black urban	.052	.027	.006	.0027	.0005	.18
	-.144	-.160	-.016	.0208	.0227	1.09
Black rural	-.144	-.079	.064	.0205	.0054	.26
	-.180	-.152	.029	.0325	.0207	.63

^aTracking scale used.

^bFirst figure is for achievement grouping of classrooms; second figure is for grouping within classrooms.

one of these is questionable. For white rural students, the zero-order correlation coefficient is a very large .23, which drops under controls to a beta of .13. Since we always assume that the effects of controls are understated, we suspect that a "true" regression coefficient under perfect controls would be considerably smaller. Thus, we conclude that achievement grouping may have a positive effect on high school student attitudes toward integration, although if it does, the effect is small.

The elementary school results are presented in the lower half of the table. For this group, achievement grouping, whether within- or between-classrooms, has a consistently strong negative effect on attitudes toward

integration. Seven of the eight regression coefficients are negative, ranging from -.07 to -.20, and in only one case (black rural grouping of classrooms) is there any suggestion that inadequate controls cause the effect to be overstated.

The Measures of Achievement Grouping

Table 2.13 presents the mean scores on various measures of the degree of grouping in our sample of schools. The data indicate that most elementary schools divide students within each class (for example, into graded reading groups);¹⁷ but do not put students of different ability levels in different classrooms.

Ability grouping becomes more common for older students as they attend larger schools. The high school principal was asked to estimate how many of his present tenth graders were in ability-grouped schools in seventh and eighth grades, and the third row of the table indicates that the mean response was close to "over half." The high school principal was also asked whether his own school was ability grouped, and only 10 per cent said no. If the response to this question was yes, three additional questions were asked; these three questions were combined to make the tracking scale by adding the values indicated beside each response in Table 2.13. If the principal said his school was not ability grouped, the school was assigned the minimum value of the scale.

The responses indicate that tracking is used very selectively. The last three rows of the table indicate that only "about half" of the schools' academic classes are ability grouped; that very few schools separate students during nonacademic portions of the day; and that the average school has approximately three levels of tenth grade English.

Table 2.14 presents the intercorrelations between these three items. The table shows a modest correlation between the breadth of grouping (the number of academic subjects tracked) and the degree of English class grouping. The data also suggest that tracking is a district-wide phenomenon

¹⁷ The mean is 1.36 on a 0 to 2 scale. Even if no principal gave a "1" response, $1.36 \div 2 = 68$ per cent of the responses would have to be "2" so that at a maximum only 32 per cent of the responses could be "no" to this question.

TABLE 2.13

ACHIEVEMENT GROUPING SCALES

Grade and Item (Scoring Weight in Parentheses)	Elementary School Principals	High School Principals
<u>Fifth Grade:</u>		
Achievement grouping within classes		
School has large enough program (2)		
School has program but it is too small (1)	1.36	not used
School does not have (0)		in tenth
Blank: item is scored as missing		grade
<u>Fifth and Tenth Grade:</u>		
Achievement grouping of classrooms		
School has large enough program (2)		
School has program but it is too small (1)	.60	1.11
School does not have (0)		
Blank: item is scored as missing		
<u>Tenth Grade:</u>		
When your present tenth graders were in seventh and eighth grades, approximately how many of them went to schools which had ability-grouping? Would you say almost all, over half, less than half, or very few?		
Almost all (4)		
Over half (3)		
Less than half (2)	not used	2.81
Very few (1)	in fifth	
Blank	grade	
*Approximately what proportion of the tenth grade academic classes--English, Math, Social Studies, etc.--are separated by program, so that students are in class only with students in their ability-group level or program?		
All (4)		
More than half (3)		
About half (2)	not used	2.00
Less than half (1)	in fifth	
Blank (2)	grade	
*Are the non-academic classes, such as home room, gym, health, music, art--separated by ability-group levels or tracks?		
Yes, all are separated (3)		
Some are separated (2)	not used	1.13
None are separated (1)	in fifth	
Blank (2)	grade	
*How many different levels of tenth grade English are there in this school?	not used	2.87
	in fifth	
	grade	

*These questions were not asked if the principal indicated that there was no ability grouping in the school (10 per cent of high school principals so stated).

Note: The tracking scale (TRACKP) is created by summing the last three items.

when it is present, since both variables are correlated with the amount of junior high school tracking. However, none of these measures are associated with grouping of nonacademic classes, suggesting that it is possible to institute widespread ability grouping without grouping home rooms, gym classes, and the like.

TABLE 2.14

INTERCORRELATIONS BETWEEN ITEMS OF HIGH SCHOOL TRACKING SCALE AND JUNIOR HIGH SCHOOL GROUPING

(Urban above diagonal, rural below)

	Seventh-Eighth	Academic	Levels of English	Non-Academic
Grouping in seventh and eighth grade		.12	.26	-.02
Grouping of academic classes	.42		.28	.08
Number of levels of tenth grade English	.26	.32		-.08
Grouping of nonacademic classes	.14	.17	-.04	

Note: Correlations shown are averages of those obtained when black and white weights are used.

Two Intervening Variables: Classroom Segregation and Racial Contact

Our data have shown that ability grouping at the elementary school level has the anticipated negative effect on students' attitudes toward integration, and that at the high school level, it has no negative effect, and perhaps some positive effects. In order to understand what is occurring here, let us introduce two intervening variables: the actual level of segregation in classes in the school, and the amount of social contact between black and white students.

The degree of classroom segregation is measured by an index of dissimilarity. This index is frequently used to look at racial segregation; its

best-known use is in Karl and Alma Taeuber, Negroes in Cities.¹⁸ The index varies from 0 to 1.00, and can be thought of as the proportion of students of one race who would have to be reassigned from one classroom to another so that each room would have the same black-white ratio.¹⁹ The index is appropriate for comparing schools of very different racial compositions (only 3 to 4 per cent of the variance in the dissimilarity index can be explained by a quadratic equation for per cent of white students in school). These classroom desegregation indices are rather low for elementary schools in our sample, and slightly higher for high schools. The mean values are .19 for elementary schools and .29 for high schools.²⁰

¹⁸Karl E. Taeuber and Alma F. Taeuber, Negroes in Cities: Residential Segregation and Neighborhood Change (Chicago: Aldine, 1965).

¹⁹For example, if two classrooms had the racial compositions (25 white, 9 black) and (10 white, 12 black), the dissimilarity index would be .29. One could achieve equal 5: 3 white-to-black ratios by reassigning 6 black students from the second classroom to the first, so that the two rooms would become (25 white, 9 + 6 = 15 black) and (10 white, 12 - 6 = 6 black). Six, or 29 per cent of the 21 black students would have to be relocated. Alternatively, 10 whites might be moved from the first room to the second, so that the two rooms would be (15 white, 9 black) and (20 white, 12 black); but 10 students is, again, 29 per cent of the 35 white students in the school.

²⁰To give the reader some sense of what these values mean, presented below are the levels of segregation in the typical elementary school and the typical high school in our study.

Elementary School class no.	1			2			3
Number of whites	24			21			18
Number of blacks	6			9			12
High School class no.	1	2 [*]	3	4 [*]	5	6 [*]	7
Number of whites	28	29	22	21	18	15	12
Number of blacks	2	3	8	9	12	15	18

(* indicates rooms sampled following sampling instructions after all classrooms ranked by racial composition.)

Please note that our data for high schools are based on English classes, and will not reflect the amount of segregation in other courses or in home-rooms. At the same time, our elementary school data are for home rooms, not for groups of students assembled for their reading lessons.

Racial contact is measured by one question for fifth graders ("Are any of your three best friends of the opposite race?") and for high school students, by a scale of that question plus three others, as shown in Table 2.15. The table indicates that blacks have more contact with whites than whites with blacks, a natural consequence of the fact that there are more whites than blacks in most schools. The table also indicates very high levels of contact among fifth graders, and much lower levels in high school.

TABLE 2.15

VOLUNTARY INTERRACIAL CONTACT SCALES

Grade and Item (Scoring Weight in Parentheses)	(Mean per cent responding favorably)	
	White	Black
<u>Fifth Grade:</u>		
Think of your three best friends in the fifth grade in this school. Are they all the same race as you or is one or more of a different race?		
Yes, all same race as me (0)	42.6	51.7
No, one or more is of a different race (1)		
Blank (0)		
<u>Tenth Grade:</u>		
Think for a moment about the three students you talk with most often at this school. Are they the same race as you?		
Yes, all same race as me (1)	18.2	34.8
No, one or more is from another race (4)		
Blank (1)		
Have you ever called a student of a different race on the phone?		
Yes (2)	24.1	39.5
No (1)		
Blank (1)		
This school year, have you helped a student from another race with school work?		
Yes (2)	61.2	63.8
No (1)		
Blank (1)		
This school year, have you asked a student from another race to help you with your homework?		
Yes (2)	32.2	49.6
No (1)		
Blank (1)		

Note: Tenth grade scale: sum and divide by 4. If there was more than one blank, the score is not computed.

Testing a Theory of Tracking

The conventional wisdom about tracking is derived from the "contact" hypothesis, which states that increased face-to-face contact on an equal-status basis between two hostile groups will reduce hostility. It is sometimes additionally argued that tracking "labels" students, reinforcing the whites' stereotypes of blacks as inferior. Applied to achievement grouping of blacks and whites, the thesis is that grouping increases racial segregation, preventing contact, and hence prevents any reduction in intergroup hostility. This hypothesis argues that tracking's main effect is through segregation, as diagrammed in Figure 2.2.

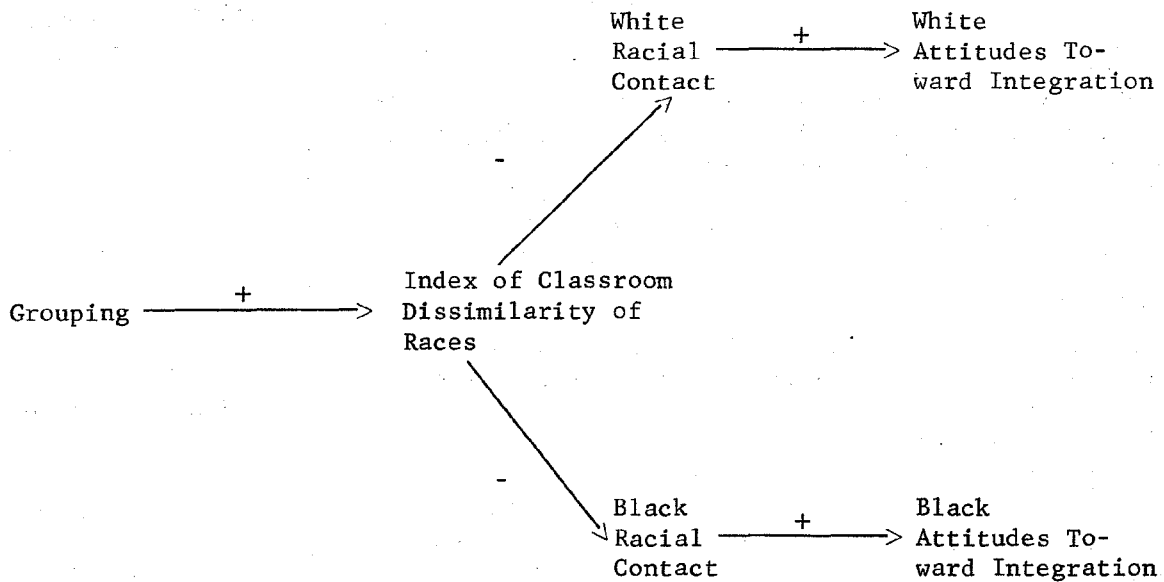


Fig. 2.2--A Theoretical Model of the Effects of Grouping

The diagram specifies that grouping leads to higher scores of the dissimilarity index, which in turn reduces white and black contact, which is positively related to white and black favorability toward integration. Thus, the overall sign of the grouping-attitude relationship is $(+)(-)(+) = (-)$.

Elementary Schools

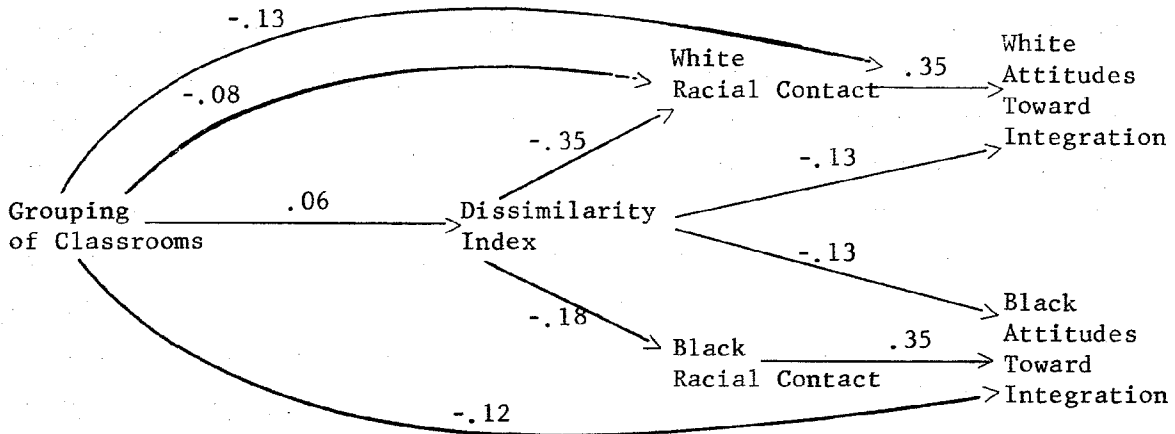
In Figure 2.3 we test this model for elementary school students. For each line in the path predicted by the model, the figure gives the partial correlation coefficient, controlling on the standard set of controls used for the other analyses of attitudes toward integration. The additional lines in the figure, those not predicted by the theory, have partial correlation coefficients that are controlled on both the standard variables and the intervening variables in the model. For example, the $-.13$ at the top of Figure 2.3 indicates that there is a negative partial correlation between grouping and attitudes toward integration, after controlling for standard variables such as racial composition and white and black SES, and for both the dissimilarity index and white racial contact. These partial correlations are not shown if they are below $\pm .08$ in absolute value.

We can draw several conclusions from the figure.

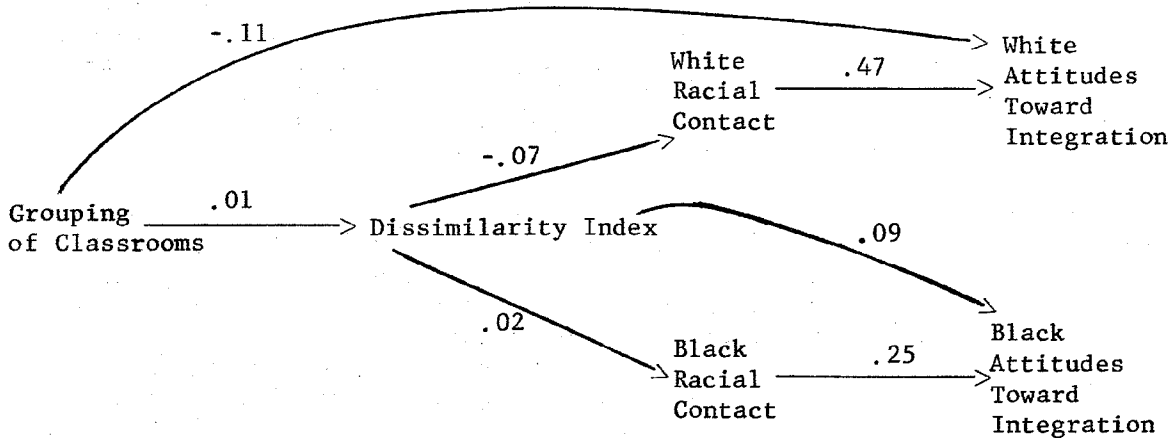
1. Achievement grouping of classrooms harms attitudes toward integration, but not because it produces segregated classes. Rather, its effect is independent of both classroom segregation and racial contact in three of the four cases. Apparently, achievement grouping makes attitudes less favorable whether it produces segregation or not.
2. The general argument, that segregation within the school reduces racial contact and inhibits the growth of favorable attitudes toward integration, seems clearly supported by the data for rural schools. There is a strong relationship between racial contact in the school and pro-integration attitudes. Furthermore, for both black and white rural students, there is a direct link between classroom segregation and unfavorable attitudes toward integration. The urban data are less clear; they show no correlations of the dissimilarity index with any of the other variables.
3. The data show, however, that the principal's report of the presence of ability grouping of classrooms is uncorrelated with the degree of classroom segregation. It seems unreasonable that ability grouping does not increase classroom segregation, and we have no explanation for this finding.²¹ Whatever the explanation, it seems obvious that we cannot assume that "achievement grouping" is synonymous with "efforts to segregate students."

²¹We should bear in mind that the many ability-grouped schools may use a "departmental" structure, with students moving to another classroom for reading or math; hence the "homeroom" of the students might not be grouped.

Rural Schools



Urban Schools



NOTES: Correlations between grouping and the dissimilarity index are averages of runs made with white and black weights and control variables. Correlations with absolute values below .08 are not shown unless specifically predicted by the model. Associations which are not predicted by the model are partial correlations controlling on intervening variables in model.

Fig. 2.3--Testing the Grouping Model, Fifth Grade Partial Correlations, Using Control Variables for White or Black Attitudes Toward Integration.

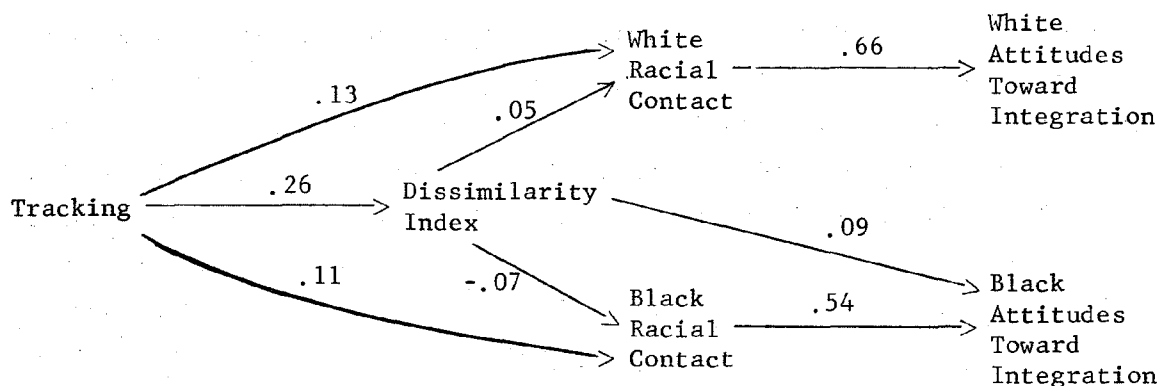
How shall we interpret these findings? First, it is obvious segregation of classrooms within the desegregated school has definite negative effects. In rural schools, where it is difficult to make friendships with classmates outside of school because of distances between homes, the racially balanced classroom leads to more interracial friendships. Friendships in turn lead to pro-integration feelings, as the contact hypothesis predicts. Second, there may be a stigma effect; white student in a mostly-white class may see the blacks in the other, mostly-black classroom as inferior while being seen by them as prejudiced, or at least snobbish. But even if the principal does institute ability grouping without segregating classrooms, or limits his ability grouping to subgroups within each classroom, the effects are still negative. Here we argue that the stigma attached to being in, say, a slow reading class has a negative effect on racial attitudes.

High Schools

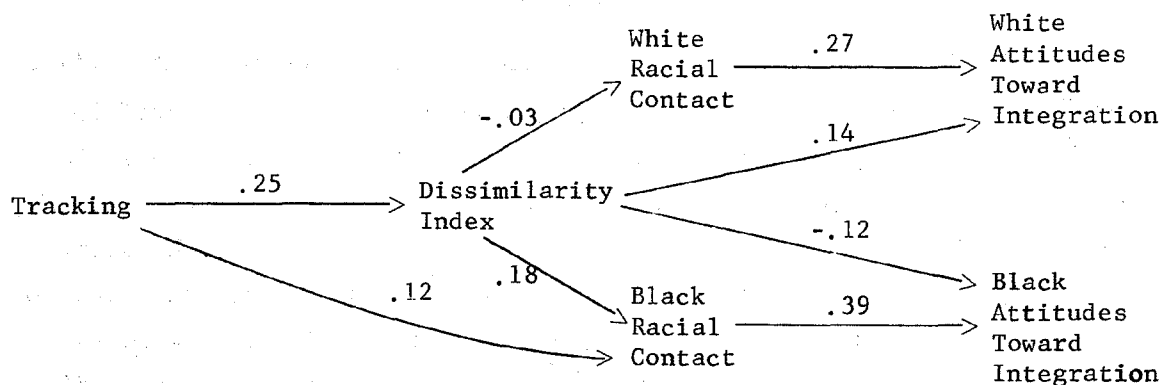
The data for high schools are presented in Figure 2.4. This time, tracking leads to segregation, but segregation does not appear harmful. The English classes in tracked schools are more segregated than those in untracked schools, but there is no evidence that classroom segregation inhibits racial contact. The partial correlations of tracking with racial contact are positive in three of the four cases; in addition, there are two positive correlations of classroom segregation with attitudes toward integration. The overall pattern indicates that tracking has a positive effect on racial contact, and that partially segregated classrooms may be beneficial. The effects of tracking on racial attitudes are entirely the result of tracking's impact on the level of racial contact. Once racial contact is controlled, tracking has no direct effect on white or black attitudes.

These data do not provide clues as to why tracking does not show the expected effect, but we may speculate as follows. The contact hypothesis generally assumes that the subject holds unfavorable and uninformed attitudes toward the other group; under such conditions, any extensive contact that is not structured to reinforce intergroup hostility should reduce prejudice. These assumptions, however, may not apply to high school students in 1972. Most of the students in our sample (83 per cent of the whites and 68 per cent of the blacks) have attended integrated elementary or junior high

Rural Schools



Urban Schools



NOTES: Correlations between grouping and the dissimilarity index are averages of runs made with white and black weights and control variables. Correlations with absolute values below .08 are not shown unless specifically predicted by the model. Associations which are not predicted by the model are partial correlations controlling on intervening variables in model.

Fig. 2.4--Testing the Grouping Model, Tenth Grade Partial Correlations, Using Control Variables for White or Black Attitudes Toward Integration.

schools. Whatever negative feelings they have about students of the other race have already withstood actual contact with such students. Furthermore, the contact between the races in many schools is not always reassuring; it may be hostile or even violent. In addition, the practice of publicly grading students (the use of "honor rolls," the returning of graded exam papers in class, and so on) and the fact that academic work represents one of the major shared experiences of high school students put strains on interpersonal relationships between students of different achievement levels. Viewed in this way, it seems plausible that ability grouping may ease some interracial tension.

The failure of the dissimilarity index to correlate with racial contact may also indicate that friendships develop among students during the nonacademic portion of the day; activities such as homeroom, extra-curricular activities, athletics, and shop classes are rarely ability grouped. At the same time, the limited interracial contact in academic classes may be more conducive to friendships because students are of similar ability levels.

Why are these effects so different from those in elementary schools? In elementary school, grouping inhibits racial contact and, we argue, stigmatizes students. But in high school, the mere fact that two students sit side-by-side is little guarantee of friendship; students are too mobile, in and out of school. In addition, academic performance is so public--a failing student has little privacy--that heterogeneous grouping probably has effects as bad, or worse, than homogeneous grouping. At the same time, black and white students in the tracked school who are of different ability levels have chances to meet in non-threatening nonacademic classes, while students of the same ability level have more chances to see each other. The result, we argue, is to make the tracked school no worse in its race relations than the heterogeneously grouped school.

The Effects of Grouping on Other Racial Attitudes of High School Students

Thus far, we have seen that high school tracking is not associated with unfavorable student attitudes toward integration. What is its relationship to other measures of racial attitudes? The questionnaire contains

several other items measuring attitudes toward members of the opposite race. In general, all the white responses show a moderate amount of negative feeling about blacks, ranging from the 19 per cent of urban whites who think color does make a difference in how smart people are, to the 58 per cent of rural whites who say that blacks "keep to themselves" in their school. Almost no blacks believe that one race is smarter than the other, and they generally give more favorable responses to the other questions. However, most blacks see their school as discriminatory. Only 35 per cent (rural) or 37 per cent (urban) of black students say that whites don't have special advantages in their school. In two other questions, 72 per cent of blacks say some teachers are unfair to blacks, while only 18 per cent say some are unfair to whites. (The whites disagree strongly: only 18 per cent of whites say that some teachers are unfair to blacks, and 40 per cent say some teachers are unfair to whites.) Thus, there is a noticeable amount of white prejudice, and a great deal of prejudice perceived by blacks.

In Table 2.16, degree of tracking is correlated with several racial attitude measures, first as a zero-order relationship and then as a partial correlation controlling on the same variables that were used as controls in analyzing attitudes toward integration. We find the strongest and most consistently positive effects for urban whites and for rural blacks.

On the whole, there is no general effect on prejudice for rural whites. Earlier, we saw that rural whites were more favorable toward integration in tracked schools. Table 2.16 suggests that white rural students in these schools do not like their black classmates more, but are more satisfied with their school; the partial correlation of tracking with the "I like school" scale is +.17.

For urban whites, perceptions of friendliness and attitudes toward the race/intelligence issue show equally strong positive associations with the tracking scale. The five racial attitudes variables (excluding the "I like school" scale) have partial correlations with tracking ranging from .16 to .20. For rural whites, while they see blacks as friendlier and more ambitious, they also see them as intellectually inferior.

TABLE 2.16

THE EFFECT OF TRACKING ON RACIAL ATTITUDES OF HIGH SCHOOL STUDENTS

Racial Attitudes Variable	Association with Tracking			
	Urban		Rural	
	Uncon- trolled r	Partial r*	Uncon- trolled r	Partial r*
<u>White responses:</u>				
Blacks are friendly	.14	.22	.03	.10
Blacks don't keep to themselves .	.04	.16	.04	-.06
Blacks are not dumb	.15	.20	.05	-.08
Blacks are ambitious	.16	.22	.17	.10
Color has nothing to do with ability	.05	.20	.03	-.09
I like school	.31	.32	.12	.17
<u>Black responses:</u>				
Whites are friendly	.06	.14	.17	.18
Whites don't keep to themselves .	.02	.10	.22	.23
Whites are not dumb	-.09	-.02	.11	.07
Whites are ambitious	.10	.12	.05	.04
Whites get no special advantages in this school	-.15	-.07	.02	.07
I like school	.09	.16	-.07	.01

* Using same controls as in attitude toward integration analysis.

Black rural students are favorably affected by tracking mainly because they see the white students as more friendly and less self-segregated. Given the white reports we have examined, this may be an accurate perception. Black urban students like school more if their school is tracked and, like rural students, they see the white students as more friendly and less inclined to keep to themselves. Black urban students in tracked schools, however, are more likely to see the school as discriminatory.

In summary, Table 2.16 agrees with Table 2.12 (which related tracking to attitudes toward integration) in showing effects of tracking that are more

positive than negative. In rural schools, tracking apparently makes white students more favorable toward integration, although it does not reduce their prejudice. In urban schools, tracking may seem discriminatory to blacks, but both black and white students like school more, and white students appear considerably more liberal in their attitude. Black and white urban students are neither more nor less favorable to integration in tracked schools.

When High School Ability Grouping Is Not Beneficial

The preceding discussion leads us to speculate that tracking has no harmful effects on student attitudes toward integration only when certain other conditions hold; when, for example, the school staff is sufficiently pro-integration so that they will minimize the "labeling" effects of grouping on lower-ability students.

We searched for the conditions which must hold before tracking does not have a harmful effect on white attitudes with several regression equations, using the standard control variables and each time adding one additional variable and that variable's interaction term with tracking. For example, we entered in our first equation the mean of the teacher's racial liberalism scores (scored 0 or 1), and a second term that combines this score and tracking (scored 1 if both the school is tracked and the teacher liberalism score is high and 0 if both conditions do not hold). When these two variables, plus tracking itself (also scored 0 or 1) are entered in the equation, we can estimate two separate effects: the effect of tracking when teachers are conservative, and the effect of tracking when teachers are liberal. In this computation, the effect of tracking in schools with conservative teachers is negative; attitudes toward integration are .28 standard deviations lower in tracked schools. The effect of tracking in schools with liberal teachers, however, is strongly positive; attitudes toward integration are .61 standard deviations higher when schools are tracked.

This analysis was done with several variables for both urban and rural schools. No interesting results appear for urban schools, but a highly consistent pattern emerges for rural schools, summarized in Table 2.17. The entries in this table show the differences between white attitudes toward integration in tracked and untracked rural schools (expressed in standardized scores when various other conditions are specified). The first

TABLE 2.17

THE CONDITIONS UNDER WHICH TRACKING IS ASSOCIATED WITH
FAVORABLE WHITE RURAL ATTITUDES TOWARD INTEGRATION

Characteristics of Rural Schools	Gain in attitudes toward integration, in units of school standard deviations
<u>Teacher attitudes:</u>	
Conservative	-.28 σ
Liberal	+.61 σ
<u>School size:</u>	
Small	-.11 σ
Big	+.72 σ
<u>Racial tension:</u>	
Low	-.04 σ
High	+.44 σ
<u>White student previous education:</u>	
Segregated	-.08 σ
Integrated	+.37 σ

two lines report the results for the interaction of tracking with the teacher attitudes described above. The remainder of the table shows that tracking has a positive effect when the school is large, or has a high level of racial tension, or when the white students attended integrated primary schools. In short, tracking has no positive effect in small rural schools, in schools where teachers are prejudiced, in schools where whites are from segregated backgrounds, or in schools where blacks are quiet. (This is consistent with the fact that tracking's effects on other student racial attitudes is more unfavorable in rural schools.)

Our analysis shows that tracking should not be done in an authoritarian manner. White high school students were asked whether they were assigned to a particular curriculum (college preparatory, vocational, business, or general) or voluntarily chose it. It is interesting that an

average of only 6 per cent of the students say they were assigned. The typical high school is apparently quite successful in counseling students without appearing rigid or repressive. Table 2.18 shows that when this percentage of students who say they were assigned exceeds 6 per cent, attitudes toward integration become more unfavorable. In rural schools, tracking has positive effects on attitudes toward integration only in non-authoritarian schools; the positive effects disappear in schools where more students say they are assigned.

TABLE 2.18

RELATIONSHIP OF TRACKING AND PERCEIVED FREEDOM OF CHOICE
IN CURRICULUM WITH WHITE ATTITUDES TOWARD INTEGRATION

Degree of Tracking	Percentage of whites who say they were assigned to their curriculum	Mean Attitude toward Integration Score	
		Urban	Rural
High	High (over 6 per cent)	16.1	13.2
	Low (under 6 per cent)	17.3	14.1
Low	High (over 6 per cent)	16.2	13.9
	Low (under 6 per cent)	17.1	12.8
School σ :		2.65	2.57

Summary of Table

	<u>Urban</u>	<u>Rural</u>
Effects of tracking:		
In schools		
with less choice	-.04 σ	-.27 σ
with more choice	+.08 σ	+.51 σ

Conclusions

In conclusion, we can present a specific set of statements about the effect of ability grouping. In elementary schools, ability grouping and classroom segregation are both deterrents to favorable attitudes toward integration. But in high schools, where tracking is carried out in a non-authoritarian way, and where the students and staff are relatively

liberal, ability grouping, even if it leads to increased segregation of classes, may have slight positive effects on attitudes toward integration and other racial attitudes.

The Effects of ESAP on Elementary School
Student Attitudes toward Integration

When we combine our experimental design and regression analyses, we see a simple, consistent picture: ESAP had no effect on elementary school student attitudes toward integration, and there is no reason to expect it to have had. We found that ESAP did fund a diverse group of activities, but when we analyzed those activities in the regression analysis, we found that they did not affect attitudes toward integration. Conversely, the activities and personnel additions that are associated with improved racial attitudes--additional non-classroom staff in rural schools, curriculum reorganization and human relations programs in urban schools--were rarely funded by ESAP. It is interesting that ESAP funds were not used for human relations activities in elementary schools. Apparently, race relations in elementary schools are low on the priority list of Southern educators.

It seems likely that school administrators tend to ignore racial issues unless student unrest forces them to act, and elementary school students are relatively passive. But before we accuse school leaders of insensitivity, we should consider whether a great deal of race relations work is needed in elementary schools. On the basis of attitude scores, one would argue that the target population should be white high school students, whose attitudes are the most unfavorable to integration. At the elementary school level, the data indicate that "leave them alone and they will work things out" is a viable strategy. For example, the number of years of desegregation is a strong positive predictor of pro-integrationist attitudes for all four of the elementary school groups. But even though few of the students in our sample of schools had attended integrated schools since kindergarten, their attitudes toward integration are already rather favorable and they have many interracial friendships. Presumably, the fifth graders of the 1972-73 school year, who had more experience with integration than the students we studied, had even more favorable attitudes.

The Effects of ESAP on High School Student
Attitudes toward Integration

ESAP did not make either white or black high school students more favorable to integration. But in contrast to the straightforward null finding of the fifth grade analysis, the tenth grade story is extremely complex.

ESAP did have a noticeable effect on the quality of race relations in high schools. The data demonstrating this are presented in Chapter 3. The most interesting finding is that black students in the experimental high schools are considerably more likely to say that their teachers and principals are favorable to integration, despite the fact that the experimental school teachers are not, in terms of personal feelings about the race issue, more liberal. This indicates that there is no selection bias in the experimental design.

In Chapter 3, and in an analysis of teacher attitudes and behavior presented in Volume II, we argue that student perceptions of teacher attitudes are not based on an accurate perception of the staff's true feelings but on teacher and principal behavior. Thus, the fact that students perceive the staff as being more favorable to integration in the experimental schools, while teacher self-reported racial attitudes are not necessarily pro-integrationist, suggests that something, presumably related to ESAP, has changed teacher behavior.

In Chapter 3, we attempt to weave this finding together with others to produce a convincing explanation of how ESAP raised the achievement test scores of black male high school students. The explanation is only partly successful, primarily because it is impossible to fit the attitudes toward integration of either white or black students into the story.

The first problem is with black attitudes toward integration. ESAP apparently caused black students to believe their school was fairer to them. We argue that this should, in turn, make them like school more, and it does (see Chapter 3). If the blacks in the experimental schools like their own integrated school more than those in the control schools, we argue that they should like integration in general more, but they don't.

We have a similar problem with white attitudes toward integration. We know (from Chapter 1) that ESAP funds were used in high schools to develop teacher and student human relations activities. We also know (from the regression analysis of activities earlier in this chapter) that these human relations activities are associated with more favorable attitudes toward integration on the part of white urban students. But again, the white student integration attitudes in experimental schools are not different from those in the control schools.

The most likely explanation for both problems is simply that ESAP had as much negative as positive effect on attitudes toward integration. It has sometimes been pointed out that compensatory education, while perhaps beneficial to blacks, may serve to reinforce the stigma that blacks are inferior. The consistent negative effects of the basic instructional services and guidance factors on attitudes toward integration, for both black and white elementary and high school students, suggest this is true.

It may also be the case that schools that strongly emphasize remedial programs do so because the staff see black academic problems as the overriding issue. This may reflect a fundamental anti-black sentiment on the part of the principals and the teachers, which is communicated to the students through the way in which the remedial program is executed. Thus, ESAP may have provided funds that conservative schools could use for remedial programs that decreased rather than enhanced the status of black students.

While this seems to be a reasonable explanation for white attitudes, it will not explain the black data. Here we seem to have a measurement problem: racial attitudes, as measured by perceptions of the school, or feelings of liking schools, indicate that ESAP had positive effects, but the attitudes toward integration scale shows no effect.

It seems to us that the black analysis has been complicated by the fact that, under certain conditions, reducing discrimination against black students may lead to expression of more anti-white sentiment. To give three examples of this: (1) in urban schools, as black status goes

up, black attitudes toward integration become more unfavorable (but it is important to remember that the average black student is strongly favorable to integration, so that when we say that high status blacks are less favorable to integration, one should think of them not as opposed to it but simply less than unanimous in their support); (2) tenth grade blacks in Upper South urban schools have attitudes less favorable than those in Deep South urban schools; (3) tenth grade urban schools where the teachers are less prejudiced have black students who are more anti-integration.²²

These statements fit with what we know about social movements of oppressed groups; that revolutionary ardor grows when conditions improve. The race riots of the 1960's began in Los Angeles, not Birmingham. Rioters were generally better educated than non-rioters;²³ and on at least some questions, young, well-educated blacks--the economically most successful group--were more "separatist" in their views than those with less education.²⁴

Thus, the most successful blacks, the ones with relatively more freedom, are the ones who can make the most provocative demands. They are less afraid and feel less need to support traditional black positions. We believe that this has created some of the problems in our analysis, for this means that the more liberal a school becomes, the more its black students will feel free to break away from traditional assimilationist values. Thus, liberalizing a school may lead to more anti-integrationist sentiments for some blacks.

In our data, the factor analysis-regression procedures would seem to indicate that any general strategy of improvement in the schools, whether it be increased guidance counseling or greater human relations

²²Data presented in Appendix C.

²³Nathan S. Caplan and Jeffrey M. Paige, "A Study of Ghetto Rioters" Scientific American 219 (August, 1968), 15-21.

²⁴Angus Campbell and Howard Schuman. "Racial Attitudes in 15 American Cities" in Supplemental Studies for the National Commission on Civil Disorders (Washington, D.C.: U.S. Government Printing Office, 1968), p. 19.

efforts, leads to blacks becoming less sympathetic to integration. This is consistent with the idea that "modernizing" Southern schools are experiencing a growth of anti-integration sentiment similar to that appearing in Northern high schools. (In this regard, it is reassuring that ESAP did not lead to a decrease in pro-integration sentiment).

Thus we have two plausible (but unproven) explanations for the contradictions in our evaluation of ESAP: that the expenditure of ESAP funds for remedial work reinforced white stereotypes of blacks in some schools, offsetting any gains resulting from human relations efforts in other schools; while at the same time, ESAP sometimes provided a more liberal environment in which blacks could express their anti-integration feelings more easily.

There are other possible explanations for the failure of ESAP to make white high school student attitudes more favorable toward integration. One is that the program was too small. Black students, who are generally more sensitive to racial issues, may have been influenced by subtle changes in the school that were too small to affect white students. ESAP was a small program; its effect on black male achievement, which we examine in the next chapter, suggests that black students are extraordinarily sensitive to the nuances of the school's racial climate. This interpretation is consistent with some of the findings presented in Volume II, especially in Working Papers 1 and 2. It is also possible that ESAP did not affect white students for the simple reason that it was targeted rather sharply at blacks. If teachers became more sensitive to racial issues, and changed their behavior toward their black students, blacks may have perceived this change while whites were completely unaffected.

It may be that ESAP programs, especially in rural schools, encountered a white backlash. There is some evidence in this chapter, and more in Volume II, Working Papers 1 and 2, to suggest that some of the pro-integration sentiment expressed by white high school students, especially in rural areas, is superficial, and will not withstand the pressure of a sudden equal-status relationship between races. By this argument, a program whose main effect was to make black students feel more at home may have alienated whites in some schools.

There is also a methodological issue. Can we assume that a successful program should result in more whites favoring integration? Perhaps, but we must keep in mind that white pro-integration sentiment is now strong in schools where blacks are a small minority, and there is some evidence to suggest that whites are most pro-integration in schools where blacks are not given an equal position in the school. This implies that establishing racial equality in newly desegregated Southern schools will make white students less pro-integration.

Finally, it may be true that a certain amount of racial tension is inevitable. It is important to remember that high school is a time of conflict between groups. Social class, neighborhood, and common interests become criteria for membership in exclusive groups. In a desegregated high school, race provides an additional criterion to use in distinguishing "us" from "them." In this situation, conflicts may center on issues of status and power, and games played with these stakes are invariably zero-sum games; "we" win only if "they" lose. One possible result of this situation is that the principal will eventually find himself in a position where the only way he can appease one group is to offend the other.

Thus, we have reason to argue that a school with a "good" racial climate may sometimes have students of one or both races who are opposed to integration. Consequently, not only are we unable to predict the direction in which white and black attitudes will be affected by an ESAP activity, we are not even sure if the fact that students hold attitudes more favorable to integration represents a positive, rather than a negative, effect in the long run.

The effects of ESAP on achievement and attitudes toward school, plus the positive effects of human relations activity on the integration attitudes of some subgroups of students, make us reluctant to conclude that ESAP had no effect on student attitudes toward integration. We think it more likely that ESAP had offsetting positive or negative effects, in any (or all) of three different ways:

1. ESAP may have had no net positive effect on white attitudes toward integration because whatever gains may have occurred from ESAP-sponsored human relations activity may have been offset by the negative effects of ESAP-funded remedial programs on white attitudes.

2. We hypothesize that the first contradiction--that black students saw their ESAP-assisted schools as more favorable to integration but did not become more favorable to integration themselves--is a result of the fact that the more liberal school environment enabled blacks to develop a stronger racial esteem and express separatist feelings more willingly.

3. We think the second contradiction--that ESAP funded human relations activities that made white students more favorable to integration without showing a net difference in favor of ESAP experimental schools--may also be partly explained either by a backlash on the part of white students to the increased attention paid to blacks, or by the fact that the ESAP program was too small, and too short in duration, to affect white students, who are less sensitive than blacks to changes in racial climate.

In summary, it looks as if there are ways to influence white students to accept integration. The most effective way is simply to make sure that the school is firmly committed to improved race relations. Perhaps ESAP can do this; perhaps in some sense it did (at least in terms of black perceptions of the school). But changing attitudes of high school students in this area is a complex problem; apparently we should not expect easy solutions.

CHAPTER 3

ACHIEVEMENT TEST PERFORMANCE

Introduction

In this chapter, we will measure the effectiveness of ESAP by looking at its impact on tested school achievement in much the same way that we looked at changes in racial attitudes. The structure of the chapter is exactly parallel to Chapter 2. We begin by introducing the measurement of the school output variable (achievement), and locating the necessary control variables for the analysis. In this chapter we will also examine an analysis of covariance applied to the experimental design, and will perform a multiple regression analysis of the impact of school programs.

The measure of school achievement used in this chapter is the Survey Test of Educational Achievement (STEA). This shortened version of the ETS STEP test was especially developed for this evaluation. In the analysis of the test results, the social class characteristics of the students were controlled. This was necessary in part because middle-class students score higher than working-class students on the test. Similar to the Coleman report (Equality of Educational Opportunity),¹ we also found that students in middle-class schools have markedly higher achievement scores than do students of similar background in working-class schools. This indicates a "multiplier" or "contextual" effect. Middle-class schools not only have superior students, but also are able to provide a superior quality of education.

The results of the experiment indicate that ESAP raised the test scores of black high school males significantly. Test scores for this group are approximately one-half of a grade higher in the experimental

¹James S. Coleman et al., Equality of Educational Opportunity (Washington: U.S. Government Printing Office, 1966).

schools than they are in the control schools, once social class differences between the two groups of schools have been controlled.

The main goals of ESAP were to improve race relations in newly desegregated schools and to raise black achievement. The data suggest that improving race relations will raise black test scores. This would explain why ESAP effects appear only in high schools, because ESAP did not result in major expenditures in this area of elementary schools.

In addition to presenting the analysis of ESAP program effects in this chapter, we will examine the whole range of activities currently employed in the schools studied, in order to locate those that seem to raise achievement. It appears that the most important of such activities are the extensive use of audio-visual specialists and the equipment for student use.

The Achievement Test

The Survey Test of Educational Achievement could be used because we are interested only in mean school scores, and therefore do not need a test accurate enough to evaluate individual students. A discussion of the test reliability (the extent to which a retesting of the same students would give the same results) and other methodological issues appear in Appendix D. That analysis indicates that the test is sufficiently reliable, so that the main source of error is the result of sampling only 15 to 35 students of each race per school.

STEA measures the achievement of students in five areas: reading, mechanics of writing, mathematical computation and concepts, and science. In this report, only the overall score is analyzed; scores on the separate subtests are not used.

How Large Is the Effect of School on Achievement?

At present, there is a raging debate over the importance of the quality of education in determining school achievement. A number of social scientists have argued that improving the school will have only a

negligible effect upon the achievement scores of the students in it. We find in our analysis that school quality does make a difference in achievement, although whether such a difference should be interpreted as enormous or negligible is a matter of interpretation and of values.

As Table 3.1 indicates, the amount of variance between schools on the achievement test for Southern blacks is slightly less than one-fifth of the total variance. This is similar to the results obtained in the Coleman report. These values are approximately the same as those we obtained

TABLE 3.1
RATIO OF BETWEEN-SCHOOL VARIANCE IN
ACHIEVEMENT TEST SCORES TO
TOTAL VARIANCE

Grade and Race	Variance Ratios
	Per Cent
Fifth grade, black	18.0
Fifth grade, white	16.2
Tenth grade, black	19.5
Tenth grade, white	20.5

for the between-schools variance in racial attitudes in Chapter 2. The differences between schools, however, are in fact much larger for integration attitudes than for achievement. Thus the effect of school on those attitudes is even more important than the effect of school on achievement. There are two reasons for this. First, the integration attitude scale is very short and contains a great deal of measurement error. The effect of this is to drastically understate the amount of variance between schools.²

²The introduction of a large amount of measurement error at the individual level tends to inflate the individual-level variance. At the same time, the between-school variance is not increased as much, since a school mean based on a number of students is more accurate than data at the individual level. Thus, the effect of error is to inflate the individual variance more than the between-school variance and hence reduce the between-to-within variance ratio.

Secondly, we will see that many of the between-school differences in achievement can be attributed to the characteristics of the student body. This was not true in the case of attitudes toward integration. A detailed discussion of the interpretation of the between-school variance appears in Volume 2; there we suggest that differences in school quality can alter test performance by two to four grade levels.

Control Variables for the Analysis

As in Chapter 2, the first step in the analysis was to use multiple regression to locate the set of control variables needed to analyze the effect of school factors on achievement.³ The major controls needed were those measuring student social background. The student social background variables used in this study are somewhat unusual. Many elementary school students would be unable to answer the usual questions about social status, parents' occupation, income, or educational attainment. Hence, we chose simpler items that the student would have opportunity to observe.

Using achievement as the dependent variable, all items measuring social background were entered into a stepwise multiple regression equation. These included both social status and the amount of educational support the student received at home. For each grade and race, we picked the best equation in which the variables had the expected effect and in which we were able to maximize the percentage of variance explained. The items that comprised the final equations were different for each group.

There are several reasons for these differences.

1. The fifth and tenth grade questionnaires differ because less sophisticated items must be used with elementary school students.
2. There are racial differences in the importance of the variables (e.g., fewer white families receive food stamps).
3. The correlations between variables are so high that they readily serve as proxies for each other.

³ More detailed discussions of this topic appear in Appendices A and B.

For fifth grade blacks, the strongest background variable is the percentage of students not using food stamps. For whites, the best SES variable is the percentage receiving a daily newspaper. Mother's education is the strongest SES variable in the tenth grade for both whites and blacks.

Another important control variable is the social background of the students of the other race in the school. Student social background affects student achievement both directly and indirectly. Its direct impact is obvious: high status students perform better on tests. But the indirect effect documented by the Coleman report is equally important: students learn more when their classmates are of higher status. Our data indicate that the correlation of the school mean social status for one racial group with school mean achievement for that group is considerably higher than is the individual-level correlation between social background and achievement. It can be shown that school mean social background is a significant predictor of individual achievement. But if black achievement is affected by the social background of the students' black peers, it should also be affected by the average background of the students' white classmates as well, and this is the case. Therefore, the SES of the opposite race was added as a control.

Additional school and community characteristics were also used as control variables. These were all factors over which the school had little control, so that the addition of some new school activity, such as remedial reading, could not have altered the factor. After we had formulated equations controlling SES, we tried to control those school and community variables that had an effect on achievement but that occurred prior to any projects. Again, the full set of variables was used, but the optimal equations included only a subset of these variables. A summary of the control equations used in the multiple regression is shown in Table 3.2. The community and school variables that are associated with high achievement in at least one equation included:

- 1) high per pupil expenditures for education
- 2) whether the superintendent was elected or appointed
(elected superintendents are in low achievement districts)
- 3) high level of civil rights activity
- 4) favorable teacher attitudes toward testing
- 5) the principal's favorable evaluation of the teachers
- 6) high percentage of Jewish students
- 7) high percentage of white students selecting the school
- 8) high number of non-classroom specialists per student employed
in the school
- 9) high degree of tracking
- 10) high percentage of the district population in rural areas

TABLE 3.2

THE CONTROL EQUATIONS FOR THE ACHIEVEMENT TEST SCORES

Grade and Race	Variables	Per Cent of Variance Explained
Fifth grade, black	White and black social status; Per cent of Jewish students; Per pupil expenditures; Superintendent elected or appointed; Amount of civil rights activity	17
Fifth grade, white	White SES; Ruralism; Per cent attended kindergarten; Principal's rating of white teacher quality; Per cent of teachers who value testing	53
Tenth grade, black	Black and white SES; Ruralism; Superintendent elected or appointed	41
Tenth grade, white	White and black SES; Per pupil expenditures; School size; Number of non-classroom professionals in school; Tracking; Number of white in-transfers; Per cent of white students selecting this school	43

These control variables are without exception much less important than student social status. A full discussion of the control variables appears in Appendix B. Briefly, the first nine variables can be summarized as indicators of (a) general school quality, (b) integration effects, and (c) contextual effects of school social status. Schools of generally high quality will usually have high expenditures per student (1, above), more non-classroom specialists (8), more tracking (9), teachers who are "believers" in achievement testing (4), and principals who evaluate their teachers favorably (5). In addition, high-quality schools will have appointed school superintendents; the elected school superintendent is a political anachronism, which has survived only in a small number of rural Southern school districts.

The importance of race relations is reflected in the higher black achievement in districts with more civil rights activity. We suspect that civil rights activity in the community has a direct impact on black student motivation. White achievement is higher when white students say they selected their schools; we hypothesize (but cannot prove) that this item reflects both voluntary transfers to schools with reputations for quality and school systems protecting their high-status white "neighborhood" schools.

Schools with Jewish students, even in very small numbers, tend to have high black school achievement, just as schools with high-status non-Jewish white students do.

Only the last control variable--high percentage of the district population in rural areas--requires more detailed discussion. When social class measures are used, they tend to penalize students in rural areas, where it is more difficult to obtain a daily newspaper, easier to get food stamps, and less likely for one's mother to be a high school graduate. Students in rural areas appear to have extremely low social status while their achievement is only moderately low compared to students in urban districts, creating a serious multicollinearity problem. For this reason, urbanism is entered as a negative predictor of achievement in every equation.

Table 3.2 shows that the control variables explain at least 40 per cent of the variance in every category except that of fifth grade black students. The low per cent of variance explained in that category was a matter of great concern for the evaluation staff. After much analysis, it was decided that the achievement test used for the fifth grade students was satisfactory (see Appendix D). It seems most likely that there was an unusually large amount of response error in the questions about social class, and additionally, that student social class is not as important a predictor of achievement for black students as it is for white students. Student social class is also less important at the elementary school level than it is at the high school level.⁴

Since the control equation for fifth grade black students is less satisfactory than the equations for the other three groups, our results generally will not be as clear for this group as for the others. Special attention will be given to interpretation of the results for this group.

In the analysis of covariance of the experiment, a shorter list of control variables was used, partly to conserve degrees of freedom, and partly so that we could combine the white and black control variables into a single group, since the covariance analysis analyzes white and black test scores simultaneously. The controls used in the experimental analysis are discussed in the next section, and also in Appendix A. The controls for the regression analysis are presented in detail in Appendix B.

The Effects of ESAP: The Results of the Experiment

Our first task in determining the effect of ESAP on achievement is to examine the test scores of the schools in the ESAP experiment. Our

⁴The argument is as follows: for Southern blacks, inequality of economic opportunity has meant that there has been less opportunity for families of superior genetic ability to gravitate to high status positions. Thus, status is a poor indicator of innate academic ability. The other major reason why we expect middle-class students to perform better in schools is that high-income students have fewer problems than do lower-income students with delinquency and aggressive behavior; but these behavior problems do not become important until high school. Thus, the advantage of high social background is not as important in elementary school for blacks as it is for whites.

analysis is limited to the experimental and control schools and, more specifically, to those matched pairs of schools where both the experimental and control schools have students of both races.

The analysis of covariance does not permit weighting. Therefore, in order to minimize the impact of small numbers of respondents of one race, we removed all pairs of schools where one in the pair had less than three students of one race. This left 39 pairs of high schools and 68 pairs of elementary schools available for analysis.

The analysis, identical to that described in Chapter 2, was a multivariate analysis of covariance. It is a multivariate analysis because it uses four dependent variables simultaneously (the achievement of white and black males and females) and it is a covariance analysis because it removes the effects of the control variables (or covariates) before comparing the achievement scores of the experimental and control schools. In this analysis, the covariates are 12 student characteristics.

For each race, in both the fifth and tenth grade analysis, we used the percentage of students living with both parents, the percentage receiving a daily newspaper at home, as well as the mean number of siblings, giving a total of six covariates. In addition, for the fifth grade analysis, we added the percentage using food stamps, the percentage owning a bicycle, the percentage of female students in the class, as well as the principal's report of the percentage of students qualifying for federally subsidized lunches. For the tenth grade, we added the percentage of students (of each race) whose mothers were high school graduates, whose homes had air conditioning, and whose families owned their own home. Thus, each grade had a total of 12 covariates.

Table 3.3 gives the mean test score and standard deviations for the experimental and control schools separately by both race and sex. To make the achievement scores comparable with other standardized tests, we multiplied all scores by 10. If there were no bias in the design--if the experimental schools were indeed randomly selected from the same universe as the control schools--we would not expect differences in the social

TABLE 3.3

ESAP'S EFFECT ON ACHIEVEMENT: THE RESULTS OF THE EXPERIMENTAL DESIGN

Grade, Race, and Sex	Unadjusted Scores			Difference: Experimental- Control	Difference Adjusted for Social Background	Significance Level ^a
	Standard Deviation	Mean Experimental	Mean Control			
Fifth grade white male . . .	46.8	322	318	4.2	15.3	n. s.
Fifth grade white female . .	42.1	358	362	- 4.4	- 5.9	n. s.
Fifth grade black male . . .	63.3	160	146	14.2	- 3.8	n. s.
Fifth grade black female . .	55.4	193	192	1.0	- 1.6	n. s.
Tenth grade white male . . .	63.5	252	241	10.4	5.7	n. s.
Tenth grade white female . .	52.6	276	273	3.2	-15.5	n. s.
Tenth grade black male . . .	38.4	117	102	14.9	24.0	p < .02
Tenth grade black female . .	43.5	123	120	2.9	- 4.7	n. s.

^a All significance tests in this table are two-tailed, making no prior assumptions about the way in which the experimental and control schools differ from one another. A one-tailed test is appropriate for this problem; using it, the experimental-control differences would be significant ($p < .05$) before adjustment for the social background covariates.

NOTE: Multivariate significance test using all four dependent variables combined in a linear model:

Fifth grade: n. s.

Tenth grade: $p < .04$.

status of the schools to be important. Since we are not sure that there is no bias in the design, we remove the effects of the social class covariates and examine the adjusted means. Such a control will reduce the amount of variance in achievement remaining to be explained, making the expected differences between schools smaller. Thus a difference of a particular size becomes more significant as we remove some of the factors that might randomly explain that difference. Before removing the social status covariates, the tenth grade black male results show the only experimental-control difference that approaches significance (the significance test for the unadjusted means is not shown in the table; for tenth grade black males, $p < .10$, two-tailed). There is also a positive experimental-control difference for fifth grade black males, but here the standard deviation of school means is considerably larger and thus this result does not approach significance.

When the covariates are removed from the school means, the differences for tenth grade black males become larger and go well beyond significance at the .05 level. Our best estimate of the effect of ESAP on tenth grade black males is a gain of 24 points, or 4.2 months⁵ in grade equivalent units.⁶ Furthermore, when a multivariate analysis of covariance is performed by finding the best fitting linear sum for all tenth grade groups, the difference is significant when used as the dependent variable in the analysis. In other words, pooling all of the tenth grade achievement scores produces a statistically significant result ($p < .04$), which

⁵Approximate grade equivalence was derived from Equality of Educational Opportunity, which showed that one standard deviation (at the individual level) was equivalent to three grade levels. We assumed the same relation for our test, so that 5.7 test points = 1 month.

⁶One remaining issue was the unequal cell sizes. The analysis reported here does not weight the pairs according to the number of students tested in each school. However, the analysis was repeated, using an analysis of variance with unequal cell sizes, with identical results; the differences between the experimental and control schools are 16 points before adjustment for covariates, 25 points after adjustment.

gives us reason to conclude that the experiment has had some effect on achievement. When we separate these scores into four groups, we find that the achievement gains are concentrated in high school black male students ($p < .02$). This is a very satisfying result. If ESAP is indeed concerned with raising minority group achievement, its impact should be concentrated on blacks.

We have answered the first question of the evaluation of achievement: ESAP does have an effect. Our next question is why ESAP had the effect it did. The remainder of this chapter is devoted to an analysis of the ways our data indicate that one can intervene in the school to raise achievement and, more particularly, the ways in which ESAP did intervene to raise achievement.

The Regression Analysis of Program Impact on Achievement

Why did ESAP raise the achievement of black high school males? For that matter, why did ESAP not raise the achievement of other groups? The remainder of this chapter is devoted to investigating this question. The most likely explanation for the success of ESAP is that certain school projects affect the achievement of certain groups. ESAP presumably raised the achievement of black high school males because it provided an activity which raised their achievement, and failed to raise the achievement of other groups because it was unable to provide the kinds of activities that would have raised the achievement of those groups.

Our first step is to ignore the experimental design within the data, group all of the schools together, and carry out a multiple regression analysis of program impact upon achievement. We will carry out this analysis in three stages. First, we will verify that the regression analysis agrees with the analysis of covariance by showing that the mix of projects that ESAP purchased does in fact raise the achievement of high school black males only. Second, we will carry out an overview analysis by examining only the four factors developed in the factor analysis of each grade level (see Chapter 1) in order to determine if any of these factors have a significant impact upon achievement for any group. Third,

we will examine the individual impacts of approximately 60 measures of the existence of projects. We hope to explain why ESAP, by purchasing certain activities that have an effect upon achievement, increased tenth grade black male achievement. Similarly, we hope to show that ESAP, by not purchasing other activities that have an effect upon achievement, failed to raise the achievement of other groups.

After this three-step analysis is completed, we will reconsider the experimental design results, to see if our analysis of the effects of various school activities has shed any light on why ESAP should affect achievement.

The Impact of the ESAP Strategy in the Regression Equations

In the full sample, used for the regression analysis, the experimental and control schools are supplemented by additional ESAP schools so as to effectively double the sample size. If the regression analysis is consistent with the experimental design results, we should find that a dummy variable representing whether the school was an ESAP school or a control school shows a positive regression coefficient when entered in the regression analysis for tenth grade black students. This is in fact the case. When this regression analysis is done, insignificant regression coefficients are obtained for the fifth grade black and white students, a noticeably negative coefficient ($\beta = -.09$) is obtained for tenth grade white students, and a positive coefficient ($\beta = +.07$) is obtained for tenth grade black students. Since we ran this analysis for a combined group of males and females, the effect is small (a β of .07 implies a gain for ESAP schools of only 5 points). Presumably, this effect would be larger if the regression were run for tenth grade black males. Even under the most generous assumptions, however, the regression coefficient for tenth grade black males would still be relatively low, compared to the ESAP effect found in the experiment.

Thus far we have examined the effects of giving ESAP grants to a particular set of schools. The evaluation of ESAP can be viewed in a different way. ESAP is no more than a collection of programs. Many of these programs have existed for years, funded by Title I or local tax money. There is no reason to believe that a human relations program funded by ESAP is significantly different from a similar project supported by local funds. If ESAP has a particular effect, it should be because of the activities that it supports. These activities should produce the same results whether or not they are directly related to ESAP.

We can ask two questions. First, what was the ESAP strategy, that is, what activities were bought with ESAP grants? Second, what are the effects of these activities, regardless of the source of funding?

To define the ESAP strategy, we must determine which projects were most often bought with ESAP grants. To do this, we put the set of program variables into a regression equation with the dependent variable being whether the school received ESAP funds. Thus, we are seeking to determine the extent to which the presence of each particular program predicts that the school received an ESAP grant. The details of the results are given in Appendix B.

The description of ESAP generated in this way is similar to that given in Chapter 1; ESAP purchased a diverse collection of activities ranging from the hiring of school psychologists to the purchasing of human relations literature. Each activity is weighted according to how likely ESAP was to fund it, and the activities are put in a scale. The scale measures the extent to which a school has activities that ESAP would be likely to fund. A school might have a high score on the scale without having received an ESAP grant if it were supporting these activities with other funds.

We use this scale in a regression with achievement as the dependent variable. We are testing whether these programs have any effect, regardless of whether or not they are the direct result of ESAP.

The results of the regression are given in Table 3.4. The regression coefficients for white and black fifth and tenth graders are not large enough to be called significant effects. However, the scale does have a positive effect on tenth grade black male achievement--the group which ESAP benefits. As evidenced in Table 3.3, ESAP had a negative, although insignificant, effect on tenth grade white achievement. Table 3.4, using the entire sample, shows that the ESAP strategy had a positive effect on achievement for this group, although this effect is still not significant. There are several possible explanations for this shift. Since the results from both samples are statistically insignificant, we will not attempt to interpret them at this time.

TABLE 3.4

THE IMPACT OF THE ESAP STRATEGY ON ACHIEVEMENT

Grade and Race	Beta (After Controls Introduced)
Fifth grade, white	.00
Fifth grade, black	.03
Tenth grade, white	.05
Tenth grade, black	.05
Tenth grade, black males	.08

We can conclude that the activities in which ESAP invested serve to improve the achievement of black high school males. We find also that the activities have this effect regardless of their source. The effect is not linked to the timing or other characteristics of ESAP.

The Impact of Program Strategies on Achievement Using Factor Analysis

In Chapter 1, we observed that approximately 40 activities and supplemental staff we identified in the schools can be clustered into general groups. We argued at that time that this clustering represented a

grouping of activities according to their ideological orientation. For example, human relations programs tended to occur in elementary schools that were also reforming their curriculum and introducing such new ideas as team teaching; remedial reading often went hand in hand with the use of teacher's aides and counselors; other schools seemed to "specialize" in hiring staff oriented toward social work. Similar overall ideological strategies can be discerned in the tenth grade.

We can ask whether any one of these ideological orientations is more effective in raising achievement than any other. We construct the factors from the factor analysis and enter them into regression equations with the usual control variables. The results, shown in Table 3.5, are unrewarding. On the whole, none of the alternative ideological strategies seem to work. The fifth grade factor 2 and tenth grade factor 1 describe a cluster of activities primarily dealing with intergroup relations (at the elementary school level, this factor also includes classroom reorganization). This factor produces negligible gains in achievement. Fifth grade factor 1, the purchase of auxiliary non-instructional staff, gives no results.

TABLE 3.5
THE IMPACT OF PROGRAM STRATEGIES ON ACHIEVEMENT
USING FACTOR ANALYSIS

Grade and Factor	Standardized Regression Coefficients	
	Black	White
<u>Fifth Grade:</u>		
Factor 1: Auxiliary personnel, non-instructional	.02	.02
Factor 2: Intergroup relations, curriculum reorganization	.02	-.05
Factor 3: Basic instructional services	.04	.03
Factor 4: Social work, guidance	.02	-.03
<u>Tenth Grade:</u>		
Factor 1: Intergroup relations	.02	.05
Factor 2: Basic instructional services, social work	.04	.02
Factor 3: Intergroup relations, facilities	.04	.04
Factor 4: Guidance and counseling	-.04	.03

Fifth grade factor 3 and tenth grade factor 2 describe activities directly aimed at cognitive development. These include a collection of remedial programs and staff, achievement grouping, and teacher's aides. The factor shows only small achievement gains. A final tenth grade factor is a collection of social work and counseling programs, including the use of school psychologists and home visitors.

Later we will see that some individual projects affect the achievement of tenth grade students, but this analysis indicates that no one overall approach to school reform is particularly successful.

Examining Individual Activity Effects with Regression

There is no single strategy that is more effective than any other in raising achievement. When we examine the effects of individual activities, however, we find that some activities show small effects for some subgroups of students. Each of the 61 activities (63 for high schools) is entered in a regression equation to predict fifth and tenth grade black and white achievement. Each activity variable is entered in a multiple regression equation with the set of community and student background control variables. Thus, 248 separate regression equations are computed, and the 248 standardized regression coefficients are examined. This computation yields 248 standardized regression coefficients. They range from +.13 to -.13 with a modal value of 0. The typical program has no measurable effect. However, in the elementary school, 10 of the 122 regression coefficients are +.06 or greater, and in the high school, 14 out of 126 are .07 or better. Table 3.6 displays the regression results for every activity with one or more regression coefficients above this criterion.

As noted in Chapter 2 and Appendix B, reports of programs are coded in three slightly different ways. Special codings are marked in parentheses next to the variables with a key to the codes given below. In the table itself, there are four different notations:

- 1) The 24 coefficients over .06 (fifth grade) or .07 (tenth grade) are simply listed.
- 2) The 11 coefficients below this criterion but greater than .03 are indicated as "+" (plus sign).
- 3) The 29 coefficients between +.03 and -.03 are listed as "0" (zero).
- 4) The 8 coefficients more negative than -.03 are shown as "-" (minus sign).

TABLE 3.6

IMPACT OF SCHOOL ACTIVITIES AND PERSONNEL ON ACHIEVEMENT:
A SUMMARY OF POSITIVE FINDINGS

Activity	Fifth Grade		Tenth Grade	
	Black	White	Black	White
Teacher-relations programs (p) ^a	0	-	.07	.08
Remedial reading teachers/student	0	0	.11 ^d	0
Remedial math teachers/student	+	.06	.10 ^d	+
Teacher's aide programs (d) ^b	+	0	0	.07
Teacher's aides/student	0	.06	0	+
Textbooks	.08	0	-	0
Testing materials	.08	.07	0	0
Audio-visual specialists/student	0	0	.08	.12 ^d
Instructional equipment(s) ^c	.08	0	0	0
Guidance counseling program (d)	0	+	-	.08
Counselors/student	+	.06	-	0
Counselor's aides/student	0	+	-	.07
Vocational education teachers/student	.08	+	0	+
Social work program(s)	0	0	.11 ^d	0
Nurses/student	.13 ^d	0	0	0
Gym teachers/student	.06	0	.10 ^d	+
New construction	0	-	.09	.07
Renovations	0	-	+	.07

^a(p) = principal's report of existence of program (yes, no).

^b(d) = principal's report of duration of program (0, 1, 2 years).

^c(s) = principal's report of size of program (none, too small, adequate).

^dSignificant, $p < .05$ (one-tailed test).

Setting up the table in this way allows us to check effects that are significant and to check the consistency of effects across groups. Thus, a program would be questionable if it has a significant effect on one group but a minus for other racial and age groups. We would be more impressed with a program with one or two significant results and at least a plus in the other categories.

The largest single regression coefficient for high schools in Table 3.6 is the $\beta = .12$ for the impact of audio-visual specialists on tenth grade white achievement. There are very few fifth grade audio-visual specialists and they show negative results in a regression analysis for both black and white achievement. However, a related variable, the purchase of instructional equipment, does show a positive regression coefficient for fifth grade black students. Taken together, these findings suggest that these two activities are worth further study.

We will not make a detailed study of the activities in the remainder of Table 3.6. Apparently remedial reading and remedial mathematics teachers have small positive effects on the achievement of black students in high school. (We are not convinced that there are not similar effects for black fifth graders, where the inadequacy of the control variables creates the danger that we may understate the impact of activities concentrated in low-SES schools.) These effects are not very large, and in any case are not very relevant to an analysis of ESAP. We saw in Chapter 1 that ESAP funds were rarely used to hire remedial specialists. ESAP schools were more likely to have "remedial programs" (presumably without specialists heading them), which are not associated with black achievement improvement.

The consistency of one other result is suggestive. The employment of gym teachers is the only activity that has consistent effects at both the fifth and tenth grade levels. Otherwise, the data suggest that white students are beneficiaries in schools that emphasize counseling, and that black students are beneficiaries in high schools with social work programs. The presence of nurses is strongly related to fifth grade black achievement, and vocational education teachers have small positive effects in three cases out of four. Achievement is apparently higher in schools that have undergone

additional construction or renovation. Since these results are not very consistent, we will not analyze them further. In the next section, we will examine the results for audio-visual specialists and equipment in more detail.

Audio-Visual Specialists and Equipment for Student Use

The activity that seems to accomplish the most in raising test scores on the high school level is the employment of an audio-visual specialist. Only 10 per cent of the high schools studied had audio-visual specialists. Since ESAP did not invest in much audio-visual equipment, these aids cannot explain the effectiveness of its program. It is important, however, to examine the positive results. As indicated in Table 3.7, high schools that employ audio-visual specialists show achievement gains for black and white students, once social class is controlled, of two and four months, respectively. These are the two largest unstandardized regression coefficients for any program at the tenth grade level. No other program has as large an effect on either black or white students.

The elementary school results indicate that the impact of audio-visual specialists is negligible, taking into account the fact that there are so few of these specialists in elementary schools that these numbers are unreliable. However, a related variable, instructional equipment, does show an achievement impact. The presence of equipment for individualized instruction and audio-visual aids has a significant effect for blacks.

Nearly all schools report that they have such equipment, but if we divide the schools into those in which the principal rated the equipment as adequate and those in which he rated it inadequate, we find that adequacy of equipment correlates with black elementary school achievement; the $\beta = .08$ is one of only three betas of this size for this group.

While the use of instructional equipment and audio-visual materials is very fashionable now, there is no widely accepted theory to explain why these activities should raise achievement test scores. Most of

TABLE 3.7

IMPACT OF AUDIO-VISUAL SPECIALISTS AND INSTRUCTIONAL EQUIPMENT

Variable	Size of Activity ^a	Simple Correlation Coefficient (r)	Standardized Regression Coefficient (Beta)	(Beta-r)	Total Variance (Simple R ²)	Unique Variance (Unique R ² after Controls)	Unstandardized Regression Coefficient (b)	Number of Achievement Months Gained (b/5.8)
<u>Fifth, Black:</u>								
Audio-visual specialist .	4 %	.00	-.02	.02	.00	.00	- 4.06	- .7
Instructional equipment .	1.27	.07	.07	.00	.01	.01	7.06	1.2
<u>Fifth, White:</u>								
Audio-visual specialist .	4 %	-.03	-.02	.01	.00	.00	- 3.18	- .5
Instructional equipment .	1.27	.03	-.03	-.06	.00	.00	- 3.44	- .6
<u>Tenth, Black:</u>								
Audio-visual specialist .	11 %	.03	.08	.05	.00	.01	13.04	2.2
Instructional equipment .	1.22	.07	.03	-.04	.00	.00	2.37	.4
<u>Tenth, White:</u>								
Audio-visual specialist .	11 %	.17	.12	-.05	.03	.02	25.19	4.3
Instructional equipment .	1.22	.04	.00	-.04	.00	.00	0.00	.0

^aFor audio-visual specialists, this column gives the percentage of schools with specialists; for instructional equipment, it gives the mean size of program (2 = adequate, 1 = small, 0 = none).

the discussion of new equipment for schools centers around its impact on the motivation of students. The finding, if it can be considered accurate, is obviously of considerable policy relevance. In order to convince ourselves of its validity, we carried out further analyses.

An additional statistical analysis was done to determine the various correlates of audio-visual specialists and to determine if any of these correlates, entered into the regression equation with achievement, would explain away the audio-visual effect. The result confirms the first analysis: there are no school characteristics which, when entered in the regression equation, would remove the effect of audio-visual specialists.

Another check was provided by administering telephone interviews to the high schools that claimed to have audio-visual specialists. Those results are reported in the next section.

Telephone Interview Follow-Up of Audio-Visual Specialists

Our regression analysis indicates that having an audio-visual specialist improves achievement for tenth graders, and that the use of equipment for individual instruction improves achievement for fifth graders. To test these findings further, and to obtain a better idea of what equipment schools have and how they use it, we called high schools in the sample who reported having an audio-visual specialist. Of the 22 schools in the high school sample who reported having a specialist, we talked to the principals of 17. The other five principals could not be contacted or asked not to be included. Since this follow-up was of an informal nature, principals who preferred not to participate were not pressed.

Interviewers asked principals how long they had been at the school and which of their specialists they felt were most effective. In general, the responses to this question were vague and not particularly informative. Principals were also asked to describe the activities of the audio-visual specialist, the kinds and amount of equipment in the school, and the ways in which the equipment was used, and to give their own opinion about whether or not equipment is effective in raising achievement or improving attitudes.

The purpose of these interviews was to test both the effectiveness of the audio-visual specialist and the value of equipment in general. The best measure of how instructional aids are utilized by a school is the presence of an audio-visual specialist (rather than the presence of equipment) because, while virtually every high school has some audio-visual equipment, few have a specialist. We asked very generally whether the school had any audio-visual equipment; since every school said that they did, this is a very insensitive measure. Schools with an audio-visual specialist seem to have more than the average amount of equipment, or at least put a special emphasis on its use.

In order to understand the role of the specialist, we must understand the kind of equipment in schools and the way in which it is used. There is considerable variation among schools in this area. One group of equipment includes conventional classroom items, such as film and slide projectors, record players, and tape recorders. All the schools we contacted had at least some of these, and used them most often in science, social studies, and music and art courses. One school had increased the use of films as part of a massive curriculum revision, which included the establishment of "mini-courses" in Asian and African studies.

There are other pieces of equipment that are used in classrooms but are less common. These include cameras and visual makers, which take photos of three dimensional objects (for example, fossils). Most of the schools have television, but as a rule principals are not enthusiastic about it. The majority indicated that they had a couple of sets that floated around the school and could be used to watch the local educational channel. Two principals said that they could film their own shows and they were considerably more enthusiastic about television.

Some equipment is designed for individual use. These include language labs, headsets, teaching machines, and individual carrels with microfilm viewers, tapes, or records. Teaching machines are most often used for remedial work, particularly in reading, although one principal was having his staff develop a programmed instruction course in remedial math.

We talked to one principal whose school had a media center in which students could choose from a wide range of equipment to use individually and in small groups. Schedules in this school were flexible; students were free to pursue individual interests. Under such a program, teachers spend more time working on a one-to-one basis with students.

Once the interviews were completed, and the schools were rated according to the amount and type of equipment used and the activity of the audio-visual specialists, we correlated this information with the residual scores for the school on white and black achievement, racial attitudes, and racial tension.

Residuals were calculated by finding a predicted score for each school from the best regression equation controlling on SES, region, and other background variables. This score was then subtracted from the actual score of the school. The residual tells us how different the actual score is from what we would predict from SES and background factors. The racial tension score was based on principal, teacher, and black and white student reports of racial conflict. Racial attitude scores, on the scale used in Chapter 2, were combined for black and white students, weighting each race equally. Using these equal weights, all four scores were summed to yield a single total. The tension, racial attitudes, and total scores were normalized for the entire population of high schools to yield means of 0 and standard deviations of 1.

Table 3.8 gives the means of the residuals by the ratings of the amount of equipment in the school and the activity of the audio-visual specialist. Columns A and B show that high equipment schools have gains in black and white achievement. Columns C and D show larger gains for racial attitudes and racial tension (the higher the score the lower the tension). Column E shows a gain in the total residual. The difference in the mean total score is significant at the .05 level.⁷ The difference

⁷ We use a one-tailed test because we have no reason for predicting a negative effect. The hypothesis we are testing is whether or not there is a positive effect.

for racial tension scores is significant at $\alpha = .10$, despite the small number of cases.

TABLE 3.8
MEAN RESIDUAL SCORES BY AMOUNT OF EQUIPMENT AND
ACTIVITY OF THE AUDIO-VISUAL SPECIALIST--
FOR TENTH GRADE

Amount of Equipment and Activity of Specialist	A Black Achieve- ment	B White Achieve- ment	C Racial Tension	D Combined Racial Attitudes	E Combined Sum of All Residuals (Cols. A+B+C+D)
<u>Equipment:</u>					
High	16.0 (N=12)	7.0 (N=12)	.33 (N=12)	.35 (N=12)	.55 (N=12)
Low	-5.6 (N= 5)	1.9 (N= 5)	-.49 (N= 5)	-.06 (N= 5)	-.24 (N= 5)
Difference . .	21.6	5.1	.82 ^a	.41	.79 ^b
σ	37.2	46.8	1.00	1.00	1.00
<u>Audio-Visual Specialist:</u>					
Very active .	7.1 (N= 9)	5.1 (N= 9)	.47 (N= 9)	.40 (N= 9)	.48 (N= 8)
Not very active	13.0 (N= 8)	2.8 (N= 8)	-.34 (N= 8)	.14 (N= 8)	.12 (N= 8)
Difference . .	-5.9	2.3	.81 ^a	.26	.36
σ	37.2	46.8	1.00	1.00	1.00

^aSignificant, $p < .10$ (one-tail).

^bSignificant, $p < .05$ (one-tail).

The activity level of the audio-visual specialist does not have the predicted effect on achievement. Audio-visual specialists tend to have similar functions in most schools; generally they are responsible for ordering and maintaining equipment, and teaching others how to use it. Because of this similarity of function, it is difficult to rate specialists as being either more or less active. Consequently, there is a good deal of measurement error in these ratings. Schools with an active specialist, however, do have less racial tension, more liberal racial attitudes, and a higher total residual. The difference in the mean racial tension is significant at the .10 level.

This miniature follow-up survey supports the findings of the regression analysis, which showed achievement gains in high schools with audio-visual specialists. Furthermore, the fact that it is the usage of equipment and not merely the presence of the specialist that is associated with achievement gains supports our hunch that the tenth grade audio-visual specialist variable (1) is acting as a proxy for high utilization of equipment, and (2) is related to the fifth grade "equipment for students' use" variable, which also has a positive effect on achievement in the regression analysis. (There are very few fifth grade specialists; while they show no positive effect on achievement, this result is unreliable because of the small number of cases.)

Note that the results of this analysis are statistically independent of the regression results. The regression results from the analysis of all schools show a positive relationship between the presence of a specialist and higher achievement. This finding necessitates that the achievement residuals for the 17 schools in Table 3.8 be above average, and this is the case (the achievement residuals were constructed to yield a mean of zero across the sample of 200 high schools, so that positive residuals would indicate above average performance). But the regression analysis on the total sample implies nothing about any relationship between the level of audio-visual activity and achievement among the 17 schools in Table 3.8. If the regression results were the result of sampling error, coding mistakes, or response bias (thus

indicating no intrinsic relationship between equipment and school performance), then we would not expect differences in the predicted direction within this group of 17 schools. Therefore, the regression results and the results of Table 3.8 are statistically independent of each other, and Table 3.8 independently confirms Table 3.7.

Table 3.8 suggests that equipment has its biggest effect in reducing tension and hostility. In fact, this variable does more to reduce tension than it does to improve attitudes. Equipment, such as tapes, films, and records, provides an interesting and neutral stimulus. Machines can present interesting material in a way that eliminates competition and neutralizes interpersonal conflict.

We suspect that schools that focus primarily on individualized instruction significantly reduce racial tension by most fully removing students from competitive classroom interactions. Only two schools were rated by our interviewers as relying principally on individualized instruction. Both of these schools have extremely positive racial tension scores, 1.65 and 1.55 (over 1 1/2 σ 's below the mean in tension). These are on the far end of the distribution of scores. Since this finding is based on two schools, it is hardly conclusive, but it is provocative.

Most of the principals in the 17 schools liked the equipment that they had, and wanted more. A good audio-visual program allows for the presentation of material that goes beyond the teacher's knowledge. It allows a school to expand curriculum offerings and to bring courses up to date. Audio-visual equipment also frees teachers, giving them time to work on a one-to-one basis with students. Finally, it provides students with a way of pursuing fields of individual interest.

We hypothesize that there are several reasons why teaching equipment boosts achievement and reduces tension. Teaching machines and other individualized forms of instruction allow students to move at their own pace without tracking. There is a definite stigma attached to being in a class for slow readers. Working with an individualized programmed teaching machine lets every student move at his or her own pace with no stigma attached to it.

Further Speculations on Why ESAP Affected Achievement

In speculating about why ESAP affected achievement of black male high school students, it seems likely that the answer is not that ESAP funds provided physical or personnel resources, but that ESAP resulted in a change in the "climate" of the school, a staff attitude more sympathetic toward desegregation, which in turn affected the motivation of black students. Before presenting the evidence we have for this point of view, let us review what we have learned thus far.

We have seen that the experimental schools show a gain of almost half a grade level in tenth grade black male achievement. We tried several different tactics to explain this increase. We factor analyzed school activities, but did not locate any one factor that was more effective than others. We then looked to see if the collection of activities in which ESAP invested cause black achievement to rise. Although there is a definite rise in achievement, the process by which this occurred is unclear. It was then necessary to look at all possible projects for an explanation. Here, the evidence is somewhat confusing. The best project in terms of raising achievement appears to be the use of audio-visual aids as well as individualized equipment. Although the results are interesting, they do not explain the particular effects of ESAP.

All of the above analyses are based upon the assumption that if ESAP had any effect, it was the result of the types of projects that it bought. There is a possibility that ESAP money, because of its emphasis on improving race relations, changes a school in a manner beneficial to the black males. There is evidence to suggest that this change may have something to do with the racial tone of the school.

What follows is not a conclusive proof of some theory, but rather a collection of facts that support one explanation for ESAP's effectiveness. Hopefully, it can suggest directions for future methods of effecting change in education.

We have seen that ESAP's program in high schools was often quite different from that in elementary schools. In the high school program, ESAP funds were used for teacher's aides, but fewer schools spent funds on remedial work, and major emphasis was placed on human relations programs and curriculum revision.

This, however, does not help us a great deal. We know that there is a small achievement difference favoring schools with teacher human relations programs. The regression results, however, suggest that we would not get large differences between the experimental and control schools if a teacher human relations project were the sole contribution of ESAP. When we turn to curriculum revision, our model--that ESAP is merely a collection of projects, and these projects are not distinguishable from others funded from other sources--begins to break down. Such a model seems completely reasonable for ESAP-purchased teacher's aides or counselors. It is not perfectly applicable to remedial programs, since ESAP remedial programs tended not to involve the employment of specialists. (This problem was solved by distinguishing remedial personnel from remedial programs in the regression analysis.) Even though two remedial programs may differ, it is reasonable to assume that they have enough in common to permit categorizing them together. The model breaks down completely on an item as ambiguous as "curriculum revision" or "teacher in-service education." There is no reason to assume that curriculum revision or teacher education in one school is at all similar to an activity with the same name in another. There is also no reason to assume that ESAP-funded curriculum revision or in-service education are similar to the activities undertaken in one of the control schools. We have two reasons for suspecting that, in fact, they are not similar. The first is the sheer magnitude of ESAP-funded curriculum revision. If 70 per cent of the experimental schools revised the curriculum, compared to only 47 per cent of the controls, it follows that ESAP-funded decisions are more than a simple extension of existing programs. Second, we know that ESAP is unique among federal programs in its focus on race relations.

All of our previous approaches to ESAP attempted to find a direct connection between the projects that ESAP funded and the gain in achievement. Let us suppose that ESAP acted in a much more diffuse manner by helping to create a friendlier racial climate. If this is so, then we need to look at other changes in the ESAP experimental schools that in some manner affect tenth grade blacks.

We look at the difference between the experimental and control schools for every item in the questionnaire. Only ten items show a difference of more than two-tenths of a standard deviation. Of those ten, five suggest that experimental schools have a better racial atmosphere. These are listed in Table 3.9. In ESAP schools, teachers are more likely to discuss racial issues and less likely to see the schools as racially tense. The results indicate the following three things: (1) A greater percentage of black students perceive the school staff as supporting integration,⁸ (2) more are likely to say that they like school, and (3) fewer state that they feel they "do not belong in this school."

TABLE 3.9
TENTH GRADE EXPERIMENTAL AND CONTROL SCHOOLS:
DIFFERENCES IN RACIAL ITEMS

Item	Difference, Experimental School Minus Control in Standard Deviations
Teachers: discussion of racial issues more than once per month	.30 σ
Teachers: school not racially tense	.35 σ
Black students report staff is pro-integration.	.40 σ
Black students: "I feel like I don't belong" (per cent yes)	-.24 σ
Black students: "I like school" (per cent yes)	.26 σ

⁸In fact, the experimental school staff does not appear more liberal in reporting their private attitudes toward race. Thus, ESAP seems to have changed either the way these teachers act (not the way they feel) or the way their actions are perceived.

It appears that ESAP schools have a more relaxed racial atmosphere than their matched controls, and are more likely to be places where black students like school and feel a sense of belonging. All of this is important in itself. Very few would question the value of making black students feel more comfortable. But since this is an analysis of achievement, we need to explore the relationship between black students feeling more welcome and their academic performance in school. The evidence here is not conclusive, but it does suggest an important area for future study.

Of all the items in Table 3.9, the item showing the strongest relationship with achievement is the percentage of students who say that they like school. Taking the tenth grade sample of matched pairs, we compute the correlation between the difference between the experimental and control schools in the percent of black students who say they like school and the difference between the experimental and control schools in black male achievement. The correlation between the two differences is .50. In those pairs where the ESAP school has a higher percentage of black students who like school, black achievement is also higher.

We can argue that students who do well academically like school. It is certainly plausible. There is some evidence, however, that for blacks, liking school has a definite racial meaning, and one that is quite different from its meaning for whites.

Liking school and feeling as though you belong are highly correlated for both races (.37 for whites and .30 for blacks). When we look at perceptions of staff attitudes, however, we see a sharp white-black difference (Table 3.10). The table shows that perceptions of the racial attitudes of the staff are extremely important for blacks to have a sense of belonging and to like school, and are not at all important for whites.

TABLE 3.10

ZERO-ORDER CORRELATIONS BETWEEN LIKING SCHOOL,
BELONGING, AND PERCEIVING THE STAFF AS
PRO-INTEGRATION, FOR TENTH GRADE
BLACKS AND WHITES

Item	Per Cent Who Say They Like School	Per Cent Who Say "Yes" to "I don't belong"	Per Cent Who Feel Staff Is Pro-Integration
A. Blacks			
Per cent who say they like school	-	-.30	.44
Per cent who say "yes" to "I don't belong"		-	-.44
Per cent who feel staff is pro-integration			-
B. Whites			
Per cent who say they like school	-	-.37	.09
Per cent who say "yes" to "I don't belong"		-	.07
Per cent who feel staff is pro-integration			-

As black students perceive that staff attitudes are more pro-integration, they feel more comfortable in their schools and find it easier to learn. We still have to prove the causal direction of the relationship. But the argument is plausible enough, and the evidence sufficiently provocative to warrant further work.⁹

The theory suggests that a program similar to ESAP could change the tone of the school sufficiently to cause an increase in achievement. It could be argued that staff attitudes about integration are the result of ingrained feelings of prejudice, which are not likely to be changed by a program like ESAP. However, in an analysis of staff attitudes appearing in Volume II of this report, we find that the percentage of black students who feel that the staff is pro-integration is not highly correlated with actual teacher prejudice. Instead, student perceptions are the result of other factors, such as the attitudes and activity of the principal, the presence of civil rights activities in the community, and bi-racial activities in the school. It is possible, therefore, for ESAP to help create an environment of staff support for black students.

Conclusion

We find that ESAP raises the achievement of black high school males. An analysis of projects that ESAP funds yields no clear explanation for this result. When we compare ESAP schools with their matched

⁹ A critical problem to be solved either in future research or in further reanalysis of these data is the sex-race interaction. Black males apparently respond differently from black females to the racial climate of the school. Little previous research on school desegregation has been concerned with sex differences, although one earlier study found similar results. (Robert L. Crain and Carol Sachs Weisman, Discrimination, Personality, and Achievement [New York: Seminar Press, 1972]). We know too little about race relations and sex differences in human development. The two most promising concepts are the handling of aggression (that black males express more aggression, which limits their performance in difficult situations) and staff differences in handling male and female students (that prejudiced white teachers may reward well-behaved black females while punishing black males).

controls, we find that the black students in ESAP schools feel more staff support for integration and express more comfort and satisfaction with their school. In the fifth grade, where we get no achievement gains, no such pattern of differences appears. Using the degree of comfort in school as the intervening variable, our results suggest that there may be a relationship between staff racial attitudes and black student achievement. This may be the explanation for the effect of ESAP upon achievement.

CHAPTER 4

RECOMMENDATIONS

We subscribe to the general view that evaluations should be done by evaluators and policy making should be done by policy makers, each in their own area of expertise. It seems clear, however, that the perspectives of each should inform the activities of the other. We have therefore decided to state some of the conclusions of this evaluation in the form of policy recommendations. We do this for two reasons: first, it may be easier for policy makers to understand our conclusions if they are required to compare their policy recommendations to those made by the authors of the evaluation. If the evaluation itself is unclear, the policy recommendations we draw may clarify what we tried to say. Second, we have several specific recommendations regarding the way in which future evaluations should be done, and here, as professional evaluation researchers, we are within our own area of expertise and can appropriately make such recommendations. The first part of this chapter lists specific recommendations for action in the area of education; the reader interested only in educational policy may wish to stop reading at the end of Part I. Part II offers recommendations concerning the evaluation of ESAP and future evaluation research, and will be of interest primarily to professionals in charge of evaluation research, both inside and outside the government.

PART I. Recommendations for Educational Policy

A. Programs similar to ESAP should be maintained.

The overall conclusion of our evaluation is that ESAP was a successful program. It changed the character of high schools and, in doing so, boosted the achievement of black male high school students. It would seem, therefore, that we could be unequivocal in recommending that programs similar to ESAP should be funded in the high schools. Unfortunately, we are not sure what would constitute a "similar" program. It is true that, after extensive analysis, we are fairly sure that ESAP was successful because it changed the way in which the school as an institution dealt with racial issues. Yet we are not absolutely certain about why ESAP was successful, nor do we know which component parts of ESAP were critical to its success.

Neither do we know why ESAP had different effects at the high school level and at the elementary school level. We suspect (but cannot prove) that ESAP was used in high schools to respond to black high school students and community civil rights leaders who were protesting inadequacies in the schools' handling of race relations. We also suspect that this protest did not occur at the elementary school level, and that the elementary school ESAP program was, therefore, directed away from changing the schools' handling of race relations into a more traditional remedial program.

B. It seems quite likely that widespread use of media and tools for individualized instruction will be quite effective; additional evaluative research should be done in anticipation of increased funding in this area.

The second strongly supported conclusion of our study is that the small group of high schools that made intensive use of the media experienced improvement in achievement and an apparent reduction in racial tension. This finding does not, however, lead directly to a recommendation for increased funding for media. We have not demonstrated that intensive use of media is a replicable innovation. There are too many

anecdotal accounts of instructional equipment collecting dust in school closets, and certainly there is the possibility that intensive media usage is only successful where the school staff is committed to that approach. For these reasons we would recommend additional funding within an experimental design evaluation scheme. Funds (sufficient to achieve above-threshold effects) should be awarded to schools (with randomized controls) that have demonstrated through proposals their commitment to utilization of the funds. A second allocation (also to randomized experimental and control schools) should be made to schools that have demonstrated only a moderate level of commitment. If only the first group should prove successful, the study would have demonstrated that intensive media usage must be diffused slowly with normative support from change agents such as the graduate schools of education. If both samples show gains, this would argue for widespread immediate diffusion of the media. (Other combinations of results would lead to equally clear, though possibly disheartening, policy recommendations.)

- C. Elementary schools that choose to do achievement grouping should modify their methods of doing so; federal pressure placing restrictions on classroom segregation should be maintained.

For this, the third of our strongly supported conclusions, our data indicate that achievement grouping and classroom segregation both have unfortunate consequences in elementary school. If elementary school administrators feel it necessary to group students for academic purposes, we would recommend that this grouping be limited to academic subjects where it is deemed necessary, and be done by "departmentalization"--with students changing rooms and teachers for reading and math. Those portions of the day that provide opportunities for social interaction among students should be conducted in settings that are racially balanced. In this way, elementary school ability grouping would more closely resemble that of the high schools in this study. By grouping only for a couple of hours a day one could expect to avoid the negative effect on attitudes toward integration that more traditional elementary school ability grouping methods are seen to have. Grouping within classrooms

makes the level of every child public and may lead to feelings of shame or pride that make contact with children at other levels difficult; slower children may be stigmatized.

Our data also indicate that classroom segregation, even in the absence of achievement grouping, is itself harmful to good race relations. Hence we recommend that present federal policy (reflected in the regulations governing both ESAP and ESAA) prohibiting such classroom segregation be continued.

D. Federal policy regarding achievement grouping in high schools should be more flexible.

With this, we begin a series of recommendations that are less strongly supported, and must be offered more tentatively than the first three.

Achievement grouping in high schools does not have the unfortunate effects on race relations that we anticipated. This does not lead to an immediate policy recommendation to abolish from federal guidelines any restrictions on ability grouping or internal segregation in schools. There are a host of sound political, moral, and legal reasons for strong regulations preventing internal segregation within schools, regardless of the consequences of such policy. However, it makes sense to raise the question of how federal policy might be modified in the light of the facts. Our data only suggest that ability grouping benefits race relations; we can more comfortably make the statement that it does not harm race relations. We must also accept the fact that achievement grouping is very widely used in schools. Finally, we should note that achievement grouping is by no means synonymous with classroom segregation; in a large number of schools, the use of achievement grouping does not lead to increased classroom segregation. But none of this tells us clearly how the federal government should write and implement regulations stating what will be considered "bona fide" ability grouping. Clearly, we cannot recommend that all restrictions on ability grouping and classroom segregation be dropped, since in elementary schools, ability grouping had precisely the negative consequences that the authors of the ESAP regulations had anticipated.

Perhaps the clearest recommendation that can be made on the basis of the study is that federal policy should be reviewed in the light of the results of this study, and the regulations changed as necessary. For example, bona fide ability grouping might be defined so as to admit the possibility that there may be circumstances in high schools where ability grouping in excess of present guidelines should be permitted--e.g., in schools where racial tension is already unusually low, thus arguing that tracking has not been harmful; or in cases where the school administration has demonstrated its commitment to desegregation by administering ability grouping in such a fashion as to minimize segregation. Conversely, regulations prohibiting classroom segregation should be enforced where the school appears to lack commitment to racial equality.

We regret that this policy recommendation must be so ambiguous; but timid and ambiguous policy recommendations from social science research are not new. They often occur when the data are not as strong as we might wish in supporting one hypothesis over another, where we lack good social science theory to explain the findings and thereby make them more convincing, or where the conclusions of social science data conflict with the society's moral judgments and it is not clear whether a scientific or a moral standard is the most appropriate one to apply.

- E. There is a definite possibility that adoption of new innovations in the area of ungraded classrooms, team teaching, individualized instruction, open classrooms, and the like, and increased use of human relations activities, will have positive effects on the motivation and racial attitudes of urban elementary school students. Such programs should be evaluated with a new experiment, and if the evaluation is positive, such programs should be incorporated in future federal legislation.

We noted that ESAP funds were invested in programs to influence school race relations only in high schools; in elementary schools no such effort was made. There are two reasons to expect that elementary school race relations programs would be effective if they were instituted. First, we hypothesized in Chapter 3 that ESAP had its positive effect on black male achievement in high schools because of ESAP's effect on high school race relations. Second, we saw in the analysis of the impact of elementary

school activities on attitudes toward integration (and particularly in the factor analysis results) that urban schools that restructured their elementary classrooms and emphasized human relations activities tended to have students who were more favorable to integration. Since this result comes from the regression analysis rather than the experimental design, we cannot be as confident of it. However, the evidence seems strong enough to warrant a special study to test the possibility that the guidelines for the allocation of ESAA and other grants should give priority to elementary school human relations programs and curriculum reorganization. Since Southern elementary schools did not use ESAP funds for intergroup relations activities, we can assume that, without the use of guidelines to encourage it, other elementary schools would be equally reluctant to invest money in this area.

- F. There is a definite possibility that federal pressures on local school districts for reform in the area of race relations are effective in improving the quality of education. These efforts should be evaluated, and if the evaluation is positive, they should be intensified.

ESAP represents the "carrot" approach to changing the race relations policies of schools. Its success suggests, as a corollary, that the "stick" approach might also be successful. Certainly, the question is worthy of specific research. It is widely assumed that federal guidelines--that requiring the establishment of biracial committees at both the district and school level, for example--are effective ways to press for social change. It would be good to replace this assumption with more specific data. If federal pressure is not successful, maintaining it represents an undesirable intrusion on local autonomy. The data from the ESAP evaluation suggest that federal enforcement of guidelines requiring institutional change in racial matters may be the most effective way in which the government can influence the quality of education. (This seems particularly true with regard to the establishment of student and adult biracial committees and other devices that encourage the school staff to commit itself to the principle of racial equality.) If our

hypothesis could be established as true, it would have important implications for federal policy. Whether an effective evaluation of these federal policies can be carried out is a debatable question. On the one hand, an experimental design might require that federal officials strengthen their enforcement of guidelines in certain districts but not in others, and this might prove to be illegal. On the other hand, it is likely that normal variation, over time and between regions, would provide the basis for a natural experiment.

PART II. Recommendations for Further Work on This Evaluation
of the Emergency School Assistance Program, and for
Future Evaluation Research

A. The Office of Education should collect, in some systematic
manner, an administrative reaction to this evaluation.

We recommend a Bayesian approach in this evaluation--which means simply to gather and use all the information that is available about ESAP. We have reported here on a systematic survey research evaluation. This provides unique data that we believe is valid. This method does, however, leave a number of questions unanswered--the most important being why ESAP works. We would recommend that additional data, which exist now in the notes and memories of a large number of federal officials and local school administrators, be sought. We would recommend that as many officials as possible be asked to react to the conclusions and, more importantly, to the gaps in the conclusions of this study. If, for example, a large number of local and federal officials were to argue that their observation of the ESAP program suggested that ESAP achieved its success by operating in a particular way, and if their interpretation was not inconsistent with the data presented in this report, we would have considerably increased the amount of information available to us, and the chances of making intelligent policy recommendations regarding further funding of ESAP-type programs would be considerably improved.

One way to accomplish this would be to hold a conference to bring a large number of these people together. A working paper, perhaps prepared by the Emergency School Aid Act staff, with appended commentary from the Office of Planning, Budgeting, and Evaluation, might be an appropriate way to summarize the conclusions of the conference.

B. Future evaluations must be based on experimental de-
signs whenever possible.

We are aware of the force of the word "must," but we are convinced that any trained reader of social research will agree with our conclusion that the impact of ESAP would not have been determined without an experimental

design. Indeed, it is extremely likely that we would have concluded that ESAP had no effect if we had not had an experimental design to work with. This is not to say that cross-sectional nonexperimental research is useless; it is very valuable for certain purposes. The evaluation of programs, however, may well be impossible without experimental treatments.

There will be many objections raised to any experimental design. While these objections may at first sound persuasive, often they do not stand up under close scrutiny. For example, some administrators expressed concern over the misfortune of the schools that were designated as controls and thereby arbitrarily deprived of ESAP funds. Persons raising this objection, however, fail to recognize that since ESAP funds were finite, there would, in any event, be a number of schools that could not receive them. Presumably, an effort was made to insure that ESAP funds were awarded to the most needy schools--say, 800, to pick an arbitrary number. The experimental design necessitated that 150 of those 800 schools would be deprived of funds despite the judgment of ESAP program administrators that those schools were needy. However, the exclusion of those 150 schools meant that ESAP funds would be available to an additional 150 schools. Anyone familiar with proposal award procedures would agree that proposal awards are based on such inadequate information that there is absolutely no sound basis for arguing that those additional 150 schools were less needy, less deserving, or less competent than those that were originally selected to receive the funds.

A second rebuttal to the critic who is concerned about the deprived control school is that in many cases there is little evidence that the federal program in question is beneficial to the school. So, while it is true that the control school is deprived of funds, if we are to believe the evaluation research that has been done, their students are often not being deprived of an improved education. The criticism that the control schools are being arbitrarily deprived of benefits applies only to the case where it can be argued that all children have a moral right to a program that reasonable men would agree is strongly beneficial to them. Thus, for example, one could not randomly abolish the entire public school

system in certain counties in order to assess the impact of having schools as opposed to having no schools. But randomization is appropriate in any case where federal funding is being used to create a program that is limited, experimental, or expected to be marginal in its impact.¹

C. In future evaluations, federal policies regarding non-compliance must be very strict.

In this evaluation, federal officials worked very hard to obtain compliance of local administrators with the experimental design. However, in many cases they did allow school systems to withdraw from the experiment. In the future, every effort should be made, and every sanction available brought to bear, to insure that once a randomized treatment-control sample has been selected, no further withdrawals occur.² The large number of losses that occurred early in the study, before the random selection of the control schools, was not so critical; the small number of losses that occurred afterward are a serious problem.

D. A rule of thumb: imperfect treatment is tolerable, imperfect randomization is not.

In an experimental design, schools are randomly allocated into treatment and control groups, and the treatment groups receive the "injection" that is being evaluated. Let us make a distinction between two time periods in the sampling process. Most studies have a first stage, in which districts are contacted and a sample drawn, followed by a second stage of randomization of experimental and control schools. We recommend that any school districts that refuse to cooperate after the second stage be kept in the study, even if they have refused to withhold the treatment from the control schools in their district. In this study, schools in

¹For an expanded discussion of this point, see Donald T. Campbell, "Methods for the Experimenting Society," a paper read at the Eastern Psychological Association meeting, April 17, 1971, and at the American Psychological Association meeting, September 5, 1971. To be published in the American Psychologist.

²OPBE agrees strongly with this point, and the regulations governing ESAA are stronger than those for ESAP. It is our understanding that the current evaluation of ESAA has had very good success in obtaining compliance.

over 100 districts were randomly assigned to treatment and control groups. At this point, some school districts protested the treatment and asked to withdraw; actually, they were asking permission to apply the treatment to their control schools. When these school districts did withdraw, they were excluded from the study sample in an effort to insure that no control schools would receive treatments. However, once the schools had withdrawn, we no longer had a perfectly randomized sample, and pursuing the question of the extent of response bias and its impact became difficult. If we had instead permitted the withdrawing school districts to assign treatment funds to their control schools, but at the same time retained those schools in the sample, we would have had a perfectly randomized sample, but an imperfect allocation of treatments, with approximately one-sixth of the control schools receiving treatment. However, this type of error would generate only very elementary problems for the analyst. It would mean that the effect of the treatment would be understated in the experimental design by a factor of one-sixth. Indeed, this situation would be little different from the present evaluation since we suspect that some of the treatment schools received a very small amount of funds or spent them in very peculiar ways so that the general ESAP treatment simply did not occur there. At the same time, there are control schools that spent funds from other sources that accomplished precisely what ESAP attempted to accomplish. Thus, our treatments are imperfect. Hence, we arrive at the following rule: given a choice between imperfect randomization of the schools in two treatment-control groups and the imperfect allocation of treatments within the two groups, imperfect treatment is much to be preferred over imperfect randomization.³

³Of course, perfect randomization and perfect treatment is better; but this compromise may be necessary in the very rare case that a school has a strong moral claim against becoming a control.

E. Treatments to be evaluated in experiments should be unambiguous.

The critical problem with the ESAP evaluation is that it is extremely difficult to decide what the ESAP program was. In future evaluations, we would recommend that, instead of evaluating a federal program in all its full-blown ambiguity, a small fraction of the funds (anywhere from 1 per cent to 5 per cent) should be set aside for carefully controlled treatments that can be evaluated. If, for example, we wish to evaluate ESAP because we believe that programs designed to modify race relations in the school are effective, evaluation funds should be used to evaluate not ESAP itself, but a subset of ESAP programs that are explicitly designed to change race relations in the school. For example, one proposal from a school district that seemed to represent an unambiguous ESAP strategy might be picked up and assigned randomly to a number of other districts. (The author of the original proposal might be employed to supervise its treatment in the other districts in order to avoid the charge that Washington had designed the program.) If an evaluation were carried out under these conditions and the strategy found to be successful, we would know much more precisely what types of programs should be funded in the future. If several alternative strategies were randomly allocated to the school districts, the evaluation design would be able to detect the most desirable of the alternatives. Finally, the results achieved by these various strategies could be compared to the results obtained in a subsample of locally designed ESAP programs, to determine whether nationally standardized treatments are preferable to locally initiated programs. The use of multiple treatment would permit a Greek-Latin square type design that would allow the control schools for one treatment analysis to receive treatments of another kind, thus reducing the number of schools that receive no funds at all and minimizing objections to the program.

Simultaneous evaluation of several alternative treatments is also preferable from a cost viewpoint. Since the setting up of an evaluation study accounts for much of the cost of an evaluation, increasing the sample size does not double the survey cost. Furthermore, if three or

four related treatments are studied simultaneously, the effect of each treatment can be compared to the others, and additional insight can be gained in that fashion.

F. Reliance on achievement test scores alone should be discontinued.

We are persuaded, on the basis of this report and the working papers in Volume II of this study, that non-cognitive measures of the effects of the school are of critical importance. For example, the assumption that school integration is a valuable social policy only if it raises achievement test scores is obviously not an accurate description of the national sentiment. We do not think that segregationists would--or should--immediately embrace integration if it is shown to raise test scores; conversely, we would not urge that integrationists abandon their position if research finds no gain. There is more to school than this. Many of the criticisms of American schools presently being made are not based simply on the notion that students do not perform well on standardized tests; rather, they are based on the charge that students are unhappy, bored, or subjected to racism. Whether professional educators wish to admit it or not, the school has become the second major socializing force (after the family) in all industrialized societies. A school system that produced adults who, as a result of their school experience, were unhappy, inarticulate, undemocratic, unable to work, or to maintain family relationships would be considered an incredible failure.

It is sometimes argued that a school that teaches students to read and do mathematics will accomplish these other goals--that the main reason for social alienation or personal inadequacy is cognitive. On the face of it, the argument is not very plausible, and it seems more likely that it is the school's inability to deal with student alienation and unhappiness that prevents students from learning to their capacity. At this point, one must choose between these two opposing points of view without benefit of supportive data. But to limit ourselves to measuring the performance of schools with cognitive testing is to assume the answer

to the question, that is, to assume that motivation is not a factor in causing achievement, and that all that is necessary to produce healthy adults is to teach them cognitive skills.

There are also practical reasons why one must use non-cognitive variables. In this study, measurement of whether a student likes school turned out to provide us with a critical intervening variable used in the last section of Chapter 3 to develop a theory of the impact of ESAP. In Volume II of this report we will learn a great deal about schools, and particularly about school desegregation, through the use of these kinds of variables.

APPENDIX A

THE EXPERIMENTAL DESIGN

Large scale educational evaluations typically are observational studies. In such investigations, the information or data to be studied arises from an ongoing process over which the investigator has no direct control. Observational studies can be contrasted with experimental studies, in which the investigator manipulates various factors in order to produce data.

The analysis of observational data generally proceeds as correlation analysis. Variables, or sets of variables, are defined as "dependent," and are correlated with or regressed on other variables defined as "causal" or "explanatory." As a rule, the dependent variables are those consequences of the process under study which interest us, and the "explanatory" variables are the logically antecedent or potentially manipulable variables whose effects we would like to understand.

The analysis of experimental data is usually directed toward the resolution of specific questions. Statistical tests are employed when the data do not "speak for themselves." The analysis reflects efforts in the experimental design to isolate known sources of error and bias. Properly designed and executed, experimental studies have the inestimable value that they can be generalized and, with some usually reasonable assumptions, the results can be tested for significance. From experimental data, then, we can both resolve the relationships between variables and obtain some idea of how confident we can be that the relationships will hold up in subsequent experiments.

These distinctions between observational and experimental studies, so clear in textbooks, are often blurred in practice. In fact, there is a new type of study, appearing in the literature with growing frequency, which combines some elements of the experimental design (randomized treatments,

measurements of effect) with some elements of the observational approach (broad measurement of many causal variables which are not randomized); this evaluation of the Emergency School Assistance Program is such a study. Within the framework of this study, experimental findings are presented with statistical estimates of the confidence limits made possible by randomizing treatment assignments, as well as correlation studies that attempt to discover relationships between variables after attempting to compensate for bias and known sources of error.

This appendix will focus on the experimental aspects of the data. Specifically, the following analysis will describe the results of a random allocation of funds to schools. It has been suggested by previous observational studies (notably the Coleman report) that the effect of federally funded additions to educational programs is not a good predictor of student achievement, and this assertion has produced enough concern to warrant a direct experimental test.

Briefly, the experimental design involved the pairing of schools within school districts (called LEAs or local educational administrations). This was accomplished by instructing district school superintendents to choose pairs of schools within their districts that were "alike" and to submit the names of these pairs to the Office of Education. The paired schools, hopefully matched on characteristics that would affect student achievement, were allocated ESAP funds by the Office of Education; one school from each pair was randomly designated as the school to receive support. Thus, ESAP funds were sent to only one school from each pair. A few months later, tests were made to assess the effects of these funds.

The random assignment of funds involved some courage on the part of all concerned. It was felt that a clear answer to the question of the effectiveness of financial support could be obtained only through random assignment, because only this approach could lead to unambiguous conclusions. The analysis assumes that such randomization took place; unfortunately, we now know that some bias was introduced by LEAs selectively dropping out of the experiment (see Appendix F).

When one school from each matched pair had been selected for funding, the selection was announced to the school district; 18 school

districts refused at this point to participate in the experiment. In one case, the reason for refusal was given explicitly as an unwillingness to see the "better" school supported and the other school neglected. Of course, this case of the "better" school receiving funds would be expected to arise about half of the time, and would allow the experiment to produce a balanced picture of the effect of the ESAP funds.

Because of the possible systematic dropout of school districts from the experiment when the "better" matched school received funding, we can expect the achievement means of the schools receiving ESAP funds to be lower than the means of schools not receiving funds. All else (i.e., all other sources of error) being equal, then, we would expect the ESAP funds to reduce school achievement, but this would be an artificial finding resulting solely from this allocation bias. We do not know the extent to which this bias affects the results, but because it is clear that our findings will be conservative in this area, we have not attempted to deal with this problem in our analysis. For the moment, we will assume randomization of fund allocation.

One can understand why superintendents might choose to drop out of the experiment. It is worth repeating, however, that the consequence of this systematic dropout is to make school funds appear to be ineffective in raising student attitudes and achievement, given our model and our assumptions about other random sources of error.

Randomization is crucially important to the process of statistical inference. Randomization insures that each school in a matched pair has an equally probable chance to receive ESAP funds. There is no guarantee that prior differences between sets of schools will be balanced out, but randomization does allow us to calculate the probability that apparent differences are caused by chance and not by ESAP funds. For example, the probability that ESAP funds go to the "better" school in each pair for n pairs is $(1/2)^n$ --a very small probability, given our sample size. If a difference is found between funded and unfunded schools, the reader has the choice of concluding that the difference is real (significant) or, alternatively, of concluding that a very rare event has occurred. This is the meaning of the probability statements which are presented with the findings.

We can do better than randomization when the sources of error are known. For example, because we know that schools with predominantly high social status students do better than schools with low status students, we can measure school status and take it into account in our analysis. This leaves only unsuspected sources of bias for randomization to cope with.

The preferred method for controlling for known sources of error involves experimental design--not an option left entirely open to the ESAP evaluation. In lieu of this method, we have used analysis of covariance to correct for initial unbalance of known error sources in our sets of schools. As will be clear later, this method can be seen to remove substantial amounts of variance in test scores, leaving us with much greater precision for our comparison between funded and unfunded schools.

The Analysis of Covariance

The analysis of covariance (ANCOVA) can be thought of as a combination of analysis of variance (ANOVA) and regression. In the present context of the ESAP evaluation, ANOVA techniques enable us to investigate the effect of ESAP funds on school criteria, such as student achievement; ANCOVA improves our estimates of the effect by reducing bias and increasing the precision of our comparisons between ESAP-funded and control schools. Lastly, multivariate ANCOVA permits the simultaneous consideration of more than one school performance criterion in an analysis (we have used both STEA¹ test scores and a scale of racial attitudes).

The Model

It may be easier to interpret the findings with reference to a specific model. We present first a simple model:

$$Y_{ij} = M + T_i + B(X_{ij} - \bar{X}) + e_{ij}$$

Y_{ij} = school achievement mean, where i is our index of type of treatment (we have only two, presence or absence of ESAP funds) and j is the index of the pairs of schools

M = grand mean

T_i = effect of i^{th} treatment (e.g., ESAP funds)

¹ See Appendix D.

X_{ij} = initial value of school characteristic (e.g., average school SES)

e_{ij} = random, unexplainable variable

With this model, we can see that the net effect of including the regression-like term $B(X_{ij} - \bar{X})$ is to alter our estimation of T_i , to the extent that the covariate X_{ij} is correlated with Y_{ij} . That is, given a completely uncorrelated set of X and Y , our estimate of T_i would be unchanged.

For example, suppose that the covariate, SES, was not included in the model. An ANOVA for ESAP effect would then assess the fraction of variance in test score that could be "explained" by T_i , the ESAP funds variable (Figure A.1).

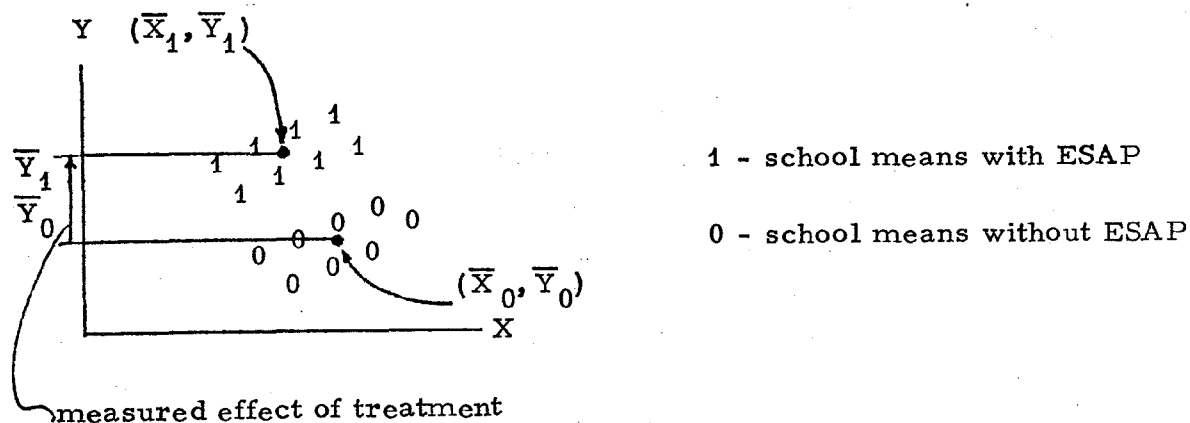


Figure A.1

The intercepts on the Y axis in Figure A.1 indicate that not much difference is attributable to ESAP funds, but this figure also shows that the distribution of SES is unbalanced for the schools. In fact, there appears to be a pattern of low-SES schools receiving ESAP and high-SES schools going without it. Given some school allocation guidelines, this pattern does not seem unreasonable. We can see that this unequal allocation of ESAP to schools suppresses the ESAP effect.

Figure A.2 illustrates the effect of the analysis of covariance in adjusting $\bar{Y}$ values for initial inequalities in $\bar{X}$. The "adjusted" values $\bar{Y}'_0, \bar{Y}'_1$ now show a likely ESAP effect, having removed the allocation bias. Additionally, the within-class error has been substantially reduced, since it is now only the variation about the regression lines.

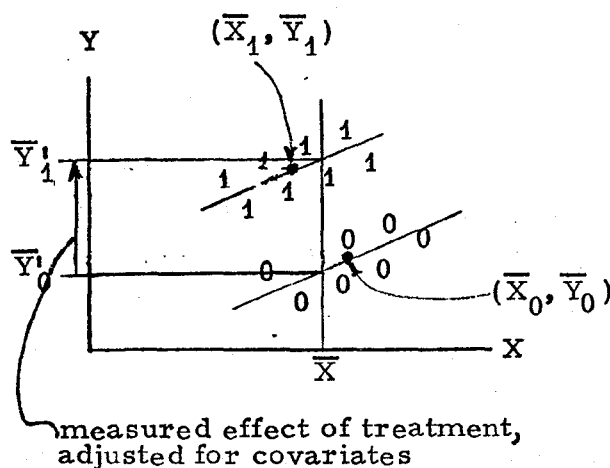


Figure A.2

Although it is not possible to represent pictorially, the more elaborate model used in the analysis does not introduce any new concepts in ANCOVA. The univariate model is:

$$Y_{ijk} = M + L_j + E_i + \sum B_l (X_{ijkl} - \bar{X}_l) + e_{ijk}$$

- Y = school achievement mean
- M = grand mean
- L_j = blocks (pairs of schools)
- E_i = ESAP funding effect (allocation of ESAP)
- B_l = regression coefficients for l covariates
- e_{ijk} = random variable, error

With this model, we can hopefully reduce bias with respect to several background SES measures (described in the next section), always assuming that our model is correct. We are left with a test for the ESAP effect (E), which has bias removed and which is tested against a reduced error term.

This model can be extended to include more than one dependent variable. In some analyses we have used both achievement test scores and attitude measures simultaneously to detect the effect of ESAP funds. More importantly, however, we have broken the dependent variable down into the test scores of four subpopulations: black boys, black girls, white boys, and white girls.

We chose the test scores of these four subpopulations as dependent variables because we do not see the utility of once again reporting that sex and race of student are important predictor variables for achievement. We now know and expect the scores for these subpopulations to be different. The interesting question is this: Does additional funding of the amount and kind provided by ESAP differentially affect these subpopulations?

We suspect that there are two reasons why these subpopulations should be differentially affected: (1) funds that are channeled into remedial programs will be aimed at low-achievement students, (2) funds which are used for advanced courses will exclude these students and will be aimed at the high-achievement students. We have focused our evaluation on the first category of programs and, therefore, would expect the effect of ESAP funds to be concentrated on males and blacks, since these are the typical low-achievement students.

We will perform separate analyses of covariance for each of the four student subpopulations. We will treat the four sets of test scores both independently and jointly (multivariate ANCOVA). The multivariate case, where all four sets of scores are taken jointly, means that the "best" linear combination of the four scores is computed, one which combines these criteria in such a way as to present the most favorable case for finding an effect attributable to ESAP funding. It follows, then, that if no effects are found for this combination of criteria, no other linear combination could have done better.

Experimental Findings for Achievement Scores

The objective of this analysis is to detect the effect of ESAP funds on student performance as measured by a test of verbal, arithmetic, and scientific achievement. As mentioned earlier, the experiment involved randomly allocating ESAP funds to one school in each matched pair of schools within school districts. The outcome of the experiment is perhaps most clearly shown in the tables of school averages for the fifth grade (Table A.1) and for the tenth grade (Table A.2).

TABLE A.1

FIFTH GRADE OBSERVED COMBINED MEAN SCORES
(Combined over LEAs)

Race and Sex	No ESAP	ESAP	Overall	Standard Deviation
White male	31.80	32.22	32.01	4.68
White female . . .	36.25	35.81	36.03	4.21
Black male	14.56	15.98	15.27	6.33
Black female . . .	19.22	19.32	19.27	5.54

Perfect score: 57

N = 116

Scores corrected for guessing

TABLE A.2

TENTH GRADE OBSERVED COMBINED MEAN SCORES
(Combined over LEAs)

Race and Sex	No ESAP	ESAP	Overall	Standard Deviation
White male	24.08	25.12	24.60	6.45
White female . . .	27.28	27.60	27.44	5.26
Black male	10.25	11.74	10.99	3.84
Black female . . .	11.99	12.28	12.14	4.35

Perfect score: 57

N = 62

Scores corrected for guessing

Table A.3 summarizes the findings with respect to the differences between funded and unfunded schools. It should be clear from the size of these differences and their standard errors that we cannot assert ESAP funds to have an overall effect, although the pattern of increased achievement in ESAP schools holds out some hope. A statistical test (ANOVA, equivalent to a t-test) confirms that no one of these differences is significant; in addition, no significance is indicated by a multivariate ANOVA on all sub-groups taken jointly.

TABLE A.3
SCORE DIFFERENCES BETWEEN FUNDED AND UNFUNDED SCHOOLS

Race and Sex	Fifth Grade ESAP Minus Control	Standard Error of Difference	Tenth Grade ESAP Minus Control	Standard Error of Difference
White male .	0.42	0.87	1.04	1.64
White female	-0.44 ^a	0.78	0.32	1.33
Black male .	1.42	1.17	1.49	0.98
Black female	0.10	1.03	0.29	1.10

^aMinus indicates lower score in ESAP school.

In addition to the differences among school districts, we know there are other sources of error in this experiment that could influence the pattern of achievement scores between the funded and unfunded schools. For example, had funds typically been assigned to the lower SES schools within each matched pair, the consequent scores would not be unique measures of the ESAP effect but would include a simultaneous comparison of school SES effect on achievement scores. The analysis of covariance allows us to equalize some of these known potential sources of error and to thereby increase the precision of our comparison. Some of the background variables that, from previous analyses, we know are correlated with achievement scores and cannot be logically affected by the allocation of funds are presented below.

Background Variables

Fifth Grade:

Number of siblings (black and white)
 Own bicycles (black and white)
 Live with parents (black and white)
 Newspaper delivered (black and white)
 Receive food stamps (black and white)
 Per cent female
 Per cent on lunch program

Total = 12

Tenth Grade:

Mother's education (black and white)
 Live with parents (black and white)
 Number of siblings (black and white)
 Read daily newspaper (black and white)
 Own air conditioner (black and white)
 Own home (black and white)

Total = 12

In the next part of this analysis, we shall adjust the means and differences shown in Tables A.1 through A.3 to compensate for these background variables to the extent that they are distributed unevenly between the treated and untreated schools. Such adjustments make the comparison between funded and unfunded schools more appropriate because the effect of irrelevant variables is thereby eliminated from the comparison. Not only will the means be adjusted to make the comparison fairer, but the achievement score variance attributable to the extraneous variables (covariates) will be removed from the error variance to increase the precision of the statistical tests. Tables A.4 and A.5 reflect these adjustments.

TABLE A.4

FIFTH GRADE ESTIMATED COMBINED MEAN SCORES FROM
 MODEL, ADJUSTED FOR TWELVE COVARIATES

Race and Sex	No ESAP	ESAP	Overall	Standard Deviation
White male	31.25	32.78	32.01	4.31
White female	36.32	35.73	36.03	3.95
Black male	15.46	15.08	15.27	5.49
Black female	19.35	19.19	19.27	5.88

N = 116

TABLE A.5

TENTH GRADE ESTIMATED COMBINED MEAN SCORES FROM
MODEL, ADJUSTED FOR TWELVE COVARIATES

Race and Sex	No ESAP	ESAP	Overall	Standard Deviation
White male . . .	24.31	24.88	24.60	4.82
White female . .	28.21	26.66	27.44	4.89
Black male . . .	9.79	12.20	11.10	3.01
Black female . .	12.37	11.90	12.14	4.29

N = 62

It is worth noting that the covariates are quite effective in reducing the variance in the four test scores. The per cent of the score variance accounted for by all 12 covariates can be seen in Table A.6; Table A.7 presents the differences between funded and unfunded schools.

TABLE A.6

PER CENT OF VARIANCE ATTRIBUTABLE TO FULL SET OF COVARIATES

Race and Sex	Fifth Grade	Tenth Grade
White male	33	67
White female	30	48
Black male	41	63
Black female	11	42
Joint multivariate .	31	52

TABLE A.7

SCORE DIFFERENCES BETWEEN FUNDED AND UNFUNDED SCHOOLS,
ADJUSTED FOR COVARIATES

Race and Sex	Fifth Grade ESAP Minus Control	Standard Error of Difference	Tenth Grade ESAP Minus Control	Standard Error of Difference
White male . . .	1.53	0.91	0.57	1.56
White female . .	-0.59	0.83	-1.55	1.58
Black male . . .	-0.38	1.15	2.40	0.97
Black female . .	-0.16	1.24	-0.47	1.39

Note: See technical note at end of section.

The results of statistical tests show the fifth grade differences to be insignificant. A multivariate analysis of covariance, however, shows the tenth grade differences to be significant. Subsequent univariate ANCOVA's show the increase in scores of black males to be the one univariate significant effect. The results are summarized in Table A.8.

TABLE A.8

TENTH GRADE: THE STATISTICAL TESTS OF THE HYPOTHESIS
THAT THE EXPERIMENTAL AND CONTROL SCHOOL
ACHIEVEMENT SCORES DIFFER

Multivariate:	4, 15 d.f.	p = .04 ^a
Univariate: White males	$F_{1,18} = .13$	p = .7
White females	$F_{1,18} = .96$	p = .3
Black males	$F_{1,18} = 6.1$	p = .02 ^a
Black females	$F_{1,18} = .11$	p = .7

^aTwo-tailed test.

Notice, however, the extremely small F values for white males and black females, which indicate that the error mean square for these groups is overestimated and that the covariates and blocking have not unbiased this estimate. Such a situation can arise when a term is missing from the ANCOVA model that is needed to decompose the error term further, or when the residual is not a good estimate of error because of interaction between blocks and treatments; that is, the error variance differs from LEA to LEA and the low F tests indicate that the ESAP fund/LEA interaction variance may not be homogeneous (which we cannot test given the lack of replication in the design).

Experimental Findings for Attitude Scores

The analyses discussed above were also carried out on another set of criteria referred to as "attitudes toward integration scores." This dependent set of variables was constructed by averaging the responses to three questions directed to the students:

Tenth Grade:

Question 43: If you could choose the kind of school you would go to, would you pick one with:

- 1) All white students (0)
- 2) All black students (0)
- 3) A mixture of different kinds of students (2)
- 4) Other (0)
- 5) Blank (0)

Question 45: Would you like to have more friends who are of a different race?

- 1) Yes (2)
- 2) No (0)
- 3) Blank (0)

Question 53: How uncomfortable do you feel around students of a different race?

- 1) Generally very uncomfortable (1)
- 2) Generally somewhat uncomfortable (2)
- 3) Occasionally somewhat uncomfortable (3)
- 4) Not at all uncomfortable (4)
- 5) Blank (3)

Fifth Grade:

Question 18: If you could choose the kind of school you would go to, would you pick one with:

- 1) All white students (0)
- 2) All black students (0)
- 3) A mixture of different kinds of students (2)
- 4) Blank (0)

Question 28: Would you like to have more friends who are of a different race?

- 1) Yes (2)
- 2) No (0)
- 3) Blank (0)

Question 33: In general, do you think that white people are smarter than black people, that black people are smarter than white people, or do you think that a person's color doesn't have anything to do with how smart he is?

- 1) White people are smarter (0)
- 2) Black people are smarter (0)
- 3) Color doesn't have anything to do with smartness (2)
- 4) Blank (0)

These questions were scaled as described in Chapter 2, and the scores for each of the four student subpopulations were used as dependent variables.

Another set of concomitant variables was used as the covariate set that related to integrative characteristics of the schools. Neither the analysis of variance nor the analysis of covariance showed any significant results for the ESAP funding effect. Table A.9 presents the mean attitude scale scores, and Table A.10, the differences between the experimental and control schools. None of these differences are significant. Table A.11 shows the means after they have been adjusted to eliminate the effects of the covariates, and Table A.12 shows the differences between the experimental and controls schools. Again, none are statistically significant.

The covariates for the social attitude analysis were as follows:

Fifth grade: Average response to earliest year attended integrated school (black and white)
Principal's race
School racial distribution prior to integration
Principal report of racial composition change
Per cent taking bus to school (black and white)
Total = 7

Tenth grade: Average response to earliest year attended integrated school (black and white)
Principal's age
School racial distribution prior to integration
Per cent of teachers under age 35
Principal report of integration of student government and cheerleaders
Principal years in office
Total = 7

TABLE A.9

OBSERVED COMBINED MEAN SCORES ON ATTITUDE SCALE
(COMBINED OVER LEAs)

Grade, Race, and Sex	Mean Attitude Scores			Standard Deviation
	No ESAP	ESAP	Overall	
<u>Fifth Grade:</u>				
Black male . . .	13.95	14.36	14.16	2.8
Black female . .	14.22	13.43	13.83	3.8
White male . . .	12.59	12.83	12.71	2.5
White female . .	13.78	13.55	13.67	2.3
<u>Tenth Grade:</u>				
Black male . . .	18.84	18.65	18.75	2.48
Black female . .	18.97	19.35	19.16	3.33
White male . . .	12.94	13.26	13.10	2.36
White female . .	15.13	14.81	14.97	3.04

Note: There is one bad data entry in the fifth grade scores, discovered after this report was written. It does not materially alter the conclusions nor even the reported figures.

TABLE A.10

SCORE DIFFERENCES BETWEEN FUNDED AND UNFUNDED SCHOOLS

Race and Sex	Fifth Grade ESAP Minus Control	Standard Error of Difference	Tenth Grade ESAP Minus Control	Standard Error of Difference
Black male . . .	.41	.52	.19	.63
Black female . .	-.79	.70	.39	.85
White male . . .	.24	.46	.32	.60
White female . .	-.22	.43	-.32	.77

TABLE A.11

ESTIMATED COMBINED MEAN SCORES FROM MODEL,
ADJUSTED FOR SEVEN COVARIATES

Grade, Race, and Sex	Mean Adjusted Score			Standard Deviation
	No ESAP	ESAP	Overall	
<u>Fifth Grade:</u>				
Black male . . .	13.88	14.43	14.16	2.83
Black female . .	14.19	13.47	13.83	3.77
White male . . .	12.57	12.84	12.71	2.55
White female . .	13.76	13.57	13.67	2.30
<u>Tenth Grade:</u>				
Black male . . .	18.88	18.60	18.74	2.29
Black female . .	18.95	19.37	19.16	3.57
White male . . .	13.02	13.17	13.10	2.55
White female . .	15.20	14.73	14.97	3.39

TABLE A.12

SCORE DIFFERENCES BETWEEN FUNDED AND UNFUNDED SCHOOLS,
ADJUSTED FOR COVARIATES

Race and Sex	Fifth Grade ESAP Minus Control	Standard Error of Difference	Tenth Grade ESAP Minus Control	Standard Error of Difference
Black male . . .	.56	.54	-.28	.61
Black female . .	-.72	.72	.41	.95
White male . . .	.27	.49	.14	.68
White female . .	-.19	.44	-.46	.90

School Programs

School programs are the "treatments" of educational experiments. In an educational survey, however, these treatments are not deliberately and randomly assigned to schools. Because the assignment of treatments is not under experimental control, the analysis of their effects incurs some peculiar problems. First is the treatment measurement or indexing problem. When an experimenter assigns treatments, it is rarely a question whether the experimental material received the treatment--one would expect complete correspondence between the experimenter's records and an inspection of the experimental material. The analysis of survey data presupposes no experimenter's records; the assignment of treatments represents a natural process. The assignment of treatments must therefore be detected by an inspection of the experimental material itself.

Such an inspection is not trivial, given the nature of school programs. These programs are only occasionally physically apparent. It is easy to detect an overhead projector, for example, and to assume therefore that the audio-visual treatment exists; but what if the projector is rarely or badly used? It is increasingly clear that the complete and accurate detection of school treatments must rely on observer data, which is not conventionally gathered in educational surveys. Because the detection of treatments is not a typical problem in experimental analysis, there is no established procedure that can be applied to survey data. There appear to be several reasonable approaches:

- 1) Correlate all program indicators with each other for all respondents (superintendent, principal, teacher, student). Cluster or factor out groups of indicators that appear to measure the same things. Define programs from these empirical findings.
- 2) Accept a particular response from a specific respondent as a program indicator (this is the conventional approach).
- 3) Accept a combination of mutually-supportive indicators from various respondents together with other evidence that confirms the operation of the school program (such as report of funds collected for audio-visual equipment and teachers' reports of frequent use).

Obviously one can expect somewhat different results from each method. This indeterminacy is peculiar to experimental analysis of educational survey data; it must be taken very seriously since the unambiguous assignment of schools to treatments lies at the basis of all further analysis. Each of the solutions listed above encounters criticisms. The first can produce program indicators that are uninterpretable, do not refer to any real school program, and are not generalizable as indicators to a set of schools other than the sample schools. The second solution can result in badly biased indicators. The third approach also suffers from bias, although its construction is intended to minimize this problem. On the whole, the third solution appears to be the most reasonable in the context of questions about the effect of school programs on students, and it is the solution we chose. The logical steps we used to create program indicators in accordance with the third alternative are listed below.

Program Variable Construction

Fifth Grade

- Reading: Principal reports size of program is large enough and available to fifth grade.
- Above average per cent of teachers reporting learning about teaching reading.
- Above average per cent of teachers reporting one, two, or three hours extra time for poor readers.
- Tutorial: Principal reports size of program is large enough and available to fifth grade.
- Above average per cent of counselors reporting academic counseling.
- Guidance: Principal reports size of program is large enough and available to fifth grade.
- Above average portion of students receiving counseling to total enrollment.
- Teacher's Aides: Principal reports size of program is large enough and available to fifth grade.
- Above average per cent of teachers reporting full-time aide.

Above average per cent of teachers reporting that aides do student- or parents-relations work.

Above average per cent of teachers reporting more than 15 minutes alone.

Curriculum: Principal reports size of program is large enough and available to fifth grade.

Above average per cent of teachers reporting some or more multi-ethnic texts.

Above average per cent of teachers reporting learning about new materials.

Above average per cent of teachers reporting learning about minority groups.

Extracurricular: Above average per cent of teachers reporting intergroup problem projects.

Classroom Organization: Principal reports one or more of the following programs are large enough and available to fifth graders: Ungraded, demonstration, underachiever, maladjusted, grouped classrooms, grouping within classrooms.

Above average per cent of teachers reporting ungraded classrooms.

Above average per cent of teachers reporting learning about new discipline.

Above average per cent of teachers reporting can handle heterogeneous classes.

Team Teaching: Principal reports size of program is large enough and available to fifth grade.

Above average per cent of teachers reporting team teaching.

Teacher Training: Principal reports size of program is large enough and available to fifth grade.

Above average per cent of teachers reporting taking training.

Above average per cent of teachers reporting no lack of training.

Above average per cent of teachers reporting time on training, positive rating, and resulting changes.

Equipment: Principal reports size of program is large enough and available to fifth grade.

Tenth Grade

Tutorial: Principal reports size of tutorial and reading programs is large enough and available to tenth grade.

Above average per cent of counselors reporting academic counseling above mean. Per-student specialists (remedial reading and math and speech).

Guidance: Principal reports size of program is large enough and available to tenth grade.

Above average fraction of students receiving counseling to total enrollment.

Above average per-student specialists (guidance counselors and aides and psychologists).

Teacher's Aides: Principal reports size of program is large enough and available to tenth grade.

Above average per cent of teachers reporting more than 15 minutes alone.

Above average per-student specialists (teacher's aides).

Student Relations: Principal reports size of one or more of the following programs is large enough and available to the tenth grade: Student relations, teacher relations, social work, parent relations and community relations.

Above average specialists (social worker, truant officer, psychologist).

Curriculum: Principal reports size of curriculum and minority history are large enough and available to tenth grade.

Above average per cent of teachers reporting some or more multi-ethnic texts.

Above average per cent of teachers reporting one or more minority culture classes.

Above average per cent of teachers reporting learning about minority groups.

Extracurricular: Principal reports size of program is large enough and available to tenth grade.

Above average per cent of black students reporting membership in sport or club.

Tenth Grade--Continued

- Above average per cent of white students reporting membership in sport or club.
- Above average per cent of teachers reporting increased participation.
- Above average per-student specialists (music, drama, gym).
- Vocational: Principal reports size of program is large enough and available to tenth grade.
- Above average per-student specialists (vocational).
- Classroom Organization: Principal reports following programs are large enough and available to tenth grade: Underachiever, maladjusted, grouped classes.
- Above average per cent of principals reporting student tracking.
- Above average per cent of teachers reporting learning about new discipline.
- Above average per cent of teachers reporting can handle heterogeneous classes.
- Teacher Training: Principal reports size of program is large enough and available to tenth grade.
- Above average per cent of teachers reporting taking training.
- Above average per cent of teachers reporting no lack of training.
- Above average per cent of teachers reporting time on training, positive rating, and resulting changes.
- Equipment: Principal reports size of program is large enough and available to tenth grade.

This list gives the various indicators that were treated as evidence of satisfactorily operating programs. A score for each program (e.g., teacher training) was constructed by counting the number of indicators for that program which were coded as "satisfactory." The number of possible satisfactory responses ranged from 1 (for equipment) to 5 (for extracurricular activities).

These counts of satisfactory program indicators could have been used as continuous variables over their various ranges, but this would have involved weighting and scaling problems. To avoid these problems, the program variables were dichotomized at the median values, so that each school received a score of either 0 or 1 on each of the 10 programs.

Interpretation of Findings

Having established some definitions of programs, we can now return to the problem of establishing how ESAP funds achieved their effect in the tenth grade experimental sample. We have included the analysis of the fifth grade as well, to see if some reasons can be found for the lack of effect there.

Our first comparison involves simply examining the program content of the funded schools and of the control schools (Tables A.13 and A.14).

TABLE A.13

PER CENT OF SCHOOLS HAVING PROGRAMS FOR FIFTH GRADE

Program	ESAP Schools	Control Schools	Per Cent Difference
Guidance	19.0	8.6	10.3
Team teaching	53.4	60.3	-6.9
Teacher's aides	22.4	12.1	10.3
Teacher training	5.2	12.1	-6.9
Reading	37.9	34.5	3.4
Classroom organization	15.5	34.5	-19.0
Curriculum revision	27.6	24.1	3.4
Extracurricular	36.2	39.7	-3.4
Tutorial	22.4	13.8	8.6
Equipment	25.9	51.7	-25.9

TABLE A.14

PER CENT OF SCHOOLS HAVING PROGRAMS FOR TENTH GRADE

Program	ESAP Schools	Control Schools	Per Cent Difference
Guidance	38.7	12.9	25.8
Human relations	61.3	32.3	29.0
Teacher's aides	29.0	25.8	3.2
Teacher training	54.8	32.3	22.6
Vocational program	22.6	35.5	-12.9
Classroom organization	38.7	45.2	-6.5
Curriculum revision	54.8	45.2	9.7
Extracurricular	54.8	54.8	0.0
Tutorial	12.9	22.6	-9.7
Equipment	38.7	25.8	12.9

The pattern of differences for the fifth grade is mixed, with ESAP schools having programs and not having them equally often when compared to the control schools. Further, programs that we believe to be associated with achievement (e.g., remedial reading) are distributed fairly equally between the two sets of schools, with no set of schools having the advantage.

The pattern of program differences for the tenth grade, on the other hand, shows a definite advantage falling to the ESAP schools. More ESAP-funded schools have programs of all sorts than do their matched controls. This difference is highly significant--it would not be expected to arise by chance.

In summary, we find no statistically significant effect on student achievement from ESAP funds and no clearly interpretable pattern of program differences between ESAP and control schools for the fifth grade. In the tenth grade, however, we find a significant effect from ESAP funds and a clear preponderance of ESAP schools having school programs. It appears that the ESAP funds have achieved their effect here by being translated into school programs.

Although this inference does not seem at variance with common sense, it does not support the results of many recent school surveys, which have been interpreted as having shown the ineffectiveness of school programs. We

suspect that our results disagree because we have partially eliminated allocation bias--ESAP funds were assigned experimentally to schools rather than being awarded only to schools with low achievement. Our results clearly show that the need for further experimental work; specifically, the need for random assignment of programs to experimentally determine the effectiveness of programs in real school settings.

One further comment is in order about the magnitude of support. The ESAP funds, on the average, added \$17 per pupil to each fifth grade student and \$12 per pupil to each tenth grade student. This support represents about 3 per cent and 2 per cent, respectively, of the total per pupil expenditure as reported by the district. In other words, our experimental treatment must be defined as a 2 to 3 per cent increase in funds, given an average per pupil expenditure of about \$600. We can only speculate what our findings would be if the baseline expenditure or percentage increase were different. The relative percentage increase in funds necessary to produce an effect in achievement at different grade levels appears to be an important policy variable and should be incorporated in subsequent experiments.

The Contribution From ESAP

ESAP funds bought only a fraction of the programs in the school budget; nevertheless, we would like to know what programs appear to be connected with the significant ESAP effect. In this section, we will consider the data from school superintendents describing which programs ESAP funds supported.

Two problems arise immediately. The first is the now familiar program coding problem: the accumulation of evidence that ESAP funds were used for a particular school program. The second problem has to do with the directness of the support: did ESAP support the program as indicated by the superintendent, or did the support free money to support another school program?

ESAP Contribution Coding

Once more, we resort to the process of gathering indicators and totalling them to produce a score for a particular school program. We must do so because there are several different ways for ESAP funds to support programs (for example, reading): materials can be purchased, reading specialist time bought, or special classes formed. We have coded the program variable to indicate ESAP support if any one of the indicators is positive.

Fifth Grade

Reading:	Availability of ESAP reading program ESAP-supported reading specialists
Tutorial:	Availability of ESAP-supported tutoring program ESAP-supported remedial education personnel ESAP-supported remedial program or materials
Guidance:	Availability of ESAP-supported guidance specialists Availability of ESAP-supported counselor's aides Availability of ESAP-supported psychologists ESAP-supported counseling assistance ESAP-supported counselors ESAP-supported teacher training in psychology
Teacher's Aides:	Availability of ESAP-supported aides ESAP-supported aides and support personnel
Curricu- lum:	Availability of ESAP-supported texts Availability of ESAP-supported curriculum revision ESAP-supported ethnic classes and materials ESAP-supported nonethnic classes and materials ESAP-supported teacher training in curriculum
Extracur- ricular:	Availability of ESAP-supported extracurricular program Availability of ESAP-supported extracurricular materials ESAP-supported student-to-student activities Availability of ESAP-supported music teachers Availability of ESAP-supported drama teachers Availability of ESAP-supported gym teachers

Fifth Grade --Continued

Classroom Availability of ESAP-supported ungraded program
Organiza- Availability of ESAP-supported demonstration program
tion: Availability of ESAP-supported underachiever program
 Availability of ESAP-supported maladjusted program
 Availability of ESAP-supported classroom grouping program
 Availability of ESAP-supported within-classroom
 grouping program

Team
Teaching: Availability of ESAP-supported team teaching program

Teacher
Training: Availability of ESAP-supported teacher training program
 Availability of ESAP-supported teacher training in
 desegregation
 Availability of ESAP-supported teacher training
 in methods
 Availability of ESAP-supported teacher training in skills
 Availability of ESAP-supported teacher training
 in remedial methods
 ESAP-supported teacher training (overlap question)
 ESAP-supported teacher training (another overlap)

Equipment: Availability of ESAP-supported teaching materials
 Availability of ESAP-supported reading machine
 Availability of ESAP-supported audio-visual equipment
 Availability of ESAP-supported testing materials
 Availability of ESAP-supported supplies
 Availability of ESAP-supported furnishings
 Availability of ESAP-supported renovation
 Availability of ESAP-supported space
 Availability of ESAP-supported audio-visual specialists
 ESAP-supported material purchases
 ESAP-supported facility improvements

Tenth Grade

Tutorial: Availability of ESAP-supported tutoring program
 Availability of ESAP-supported remedial math program

Tenth Grade--Continued

	Availability of ESAP-supported remedial math specialists
	ESAP-supported remedial education personnel
	ESAP-supported remedial education program/materials
Guidance:	Availability of ESAP-supported guidance specialists
	Availability of ESAP-supported counselors
	Availability of ESAP-supported psychologists
	ESAP-supported counseling assistance
	ESAP-supported counselors
	ESAP-supported teacher training in psychology
Teacher's Aides:	Availability of ESAP-supported teacher's aides
	ESAP-supported aides and support personnel
Student Relations:	Availability of ESAP-supported community relations specialists
	Availability of ESAP-supported truant officer/home visitor
	Availability of ESAP-supported student relations program
	Availability of ESAP-supported community relations program
	Availability of ESAP-supported parent-teacher program
Curriculum:	Availability of ESAP-supported texts
	ESAP-supported ethnic classes and materials
	ESAP-supported nonethnic classes and materials
	ESAP-supported teacher training in curriculum
Extracurricular:	Availability of ESAP-supported recreational materials
	Availability of ESAP-supported drama teacher
	ESAP-supported student-to-student activities
Vocational:	Availability of ESAP-supported vocational program
Classroom Organization:	Availability of ESAP-supported underachiever classes
	Availability of ESAP-supported maladjusted classes

Tenth Grade--Continued

Teacher

Training: Availability of ESAP-supported teacher training program
Availability of ESAP-supported teacher training in
desegregation
Availability of ESAP-supported teacher training in
methods
Availability of ESAP-supported teacher training in
skills
Availability of ESAP-supported teacher training in
remedial methods
Availability of ESAP-supported teacher training
(overlap question)
ESAP-supported teacher training (another overlap)

Equipment: Availability of ESAP-supported teaching materials
Availability of ESAP-supported reading machine
Availability of ESAP-supported audio-visual equipment
Availability of ESAP-supported supplies
Availability of ESAP-supported furnishings
Availability of ESAP-supported renovation
Availability of ESAP-supported space
Availability of ESAP-supported audio-visual specialists
ESAP-supported material purchases
ESAP-supported locality improvements

Having coded the ESAP contributions to the experimental schools, we can begin to answer the question of what ESAP funds bought in the experimental schools, in an attempt to account for the significant effect of ESAP funds in tenth grade student achievement. We will consider the fifth grade for possible indications as to why ESAP funds did not appear to have an effect here.

The ESAP funded programs coded in the list above have different ranges, depending upon how many items could be bought as components for a given school program. We dichotomize these program indicators as:

0 = No ESAP support mentioned in any items

1 = One or more references to ESAP support for various
components

The results are given in Table A.15.

TABLE A.15

PER CENT OF ESAP-FUNDED SCHOOLS RECEIVING
PROGRAM SUPPORT LISTED FOR EACH PROGRAM

Program	Per Cent
<u>Fifth Grade:</u>	
Guidance	60.3
Team teaching	0.0
Teacher's aides	65.5
Teacher training	84.5
Reading	17.2
Classroom organization	3.4
Curriculum revision	77.6
Extracurricular	44.8
Tutorial	51.7
Equipment	65.5
<u>Tenth Grade:</u>	
Guidance	58.1
Human relations	35.5
Teacher's aides	71.0
Teacher training	64.5
Vocational program	9.7
Classroom organization	6.5
Curriculum revision	83.9
Extracurricular	25.8
Tutorial	58.1
Equipment	80.6

We can now compare the tenth grade program support shown in Table A.15 with the program comparison shown in Table A.14. Notice that the five programs which show near or above 10 per cent superiority in the ESAP schools (Table A.14)--guidance, human relations, teacher training, curriculum revision, and equipment--are also all programs which have received direct ESAP support in over 35 per cent of the experimental schools (Table A.15). Furthermore, three programs that show superior strength or no difference in strength in the control schools--vocational, classroom organization, and extracurricular--are the programs that received ESAP support in less than 30 per cent of the experimental schools. There are two anomalous cases--teacher's aides and tutorial--that received ESAP support but do not exist in greater number in the experimental schools.

It would appear that the tenth grade ESAP effect might be attributable to the five programs: guidance, human relations, teacher training, curriculum revision, and equipment. This finding should be tempered, however, by the fact that we do not know what fraction of the ESAP funds went to program support. Since we know only the number of times such support was applied to various schools, we cannot say whether these programs represent efficient instruments for achievement increases.

Technical Note

A comparison of Tables A.7 and A.3 raises questions that must be answered. The problem appears to arise because Table A.3, which presents score differences unadjusted, is interpreted as showing a consistently positive ESAP effect, whereas Table A.7, which presents score differences adjusted for covariates, is interpreted as showing an inconsistent covariate correction that differentially (and negatively) affects some of the student groups.

We note first that the signs of the score differences cannot be taken too seriously; the magnitude of the differences in every case for both tables is swamped by the standard error of the difference, with one important exception--the black male subpopulation. That the covariate corrections tip some of the differences into the negative should not, therefore, be seen as an interpretable finding but rather as the expected behavior of random variates. In other words, there is no evidence here that ESAP funds lower achievement.

The following analysis may serve to alleviate concern about the apparent decrease in score attributable to experimental funds. When the covariates were matched by race to the score groups, another ANCOVA led to the following results for the tenth grade sample:

TABLE A.16

TENTH GRADE SCORES FOR BLACK POPULATION CORRECTED
FOR BLACK COVARIATES ONLY

Race and Sex	No ESAP	ESAP	Difference	Standard Error of Difference
Black male . .	10.2	11.8	1.6	.84
Black female .	12.0	12.3	.3	1.1

Covariates (see list of background variables): mother's education, live with parents, number of siblings, and own home for black population

TABLE A.17

TENTH GRADE SCORES FOR WHITE POPULATION CORRECTED
FOR WHITE COVARIATES ONLY

Race and Sex	No ESAP	ESAP	Difference	Standard Error of Difference
White male . .	24.6	24.6	.00	1.5
White female .	28.1	26.8	-1.3	1.4

Covariates (see list of background variables): mother's education, live with parents, number of siblings, and read daily newspaper for white population

In Table A.16 we see that the apparent decrease in score for the black female subgroup disappears when white covariates are excluded. This would indicate that the distribution of white covariates was responsible for the negative effect reported in Table A.7. For example, had ESAP funds gone to schools characterized by high white covariates and low black covariates, we would expect to see this result when the white covariates were eliminated. (Overall correlations between the scores of the four student populations are high; what reduces one will tend to reduce the others.)

In Table A.17, we see that the decrease in white female scores reported in Table A.7 is still apparent (but still not significant). Eliminating the black covariates has evidently not affected the decrease. We would expect to see this result when ESAP funds went to schools characterized by high white covariates and low black covariates.

Decomposing the covariates by race reveals the following: The experimental schools tend to have slightly lower black SES and slightly higher white SES than do the control schools. Males of both races perform poorly when black SES is low, so that introducing these covariates increases the effect of ESAP on males. White students and black females perform well in schools with high white SES, but black males score low in these schools.

The result of using both sets of covariates, then, is to lower the achievement of females (whose experimental school scores are biased upward by the white SES bias, and unaffected by black SES), to leave unaffected white male performance (whose achievement is raised by the higher white SES, lowered by the lower black SES, with the two effects cancelling each other), but to raise black male achievement (since black males do poorly in low black SES/high white SES schools). None of the covariate effects can be taken seriously, however, since they are not statistically significant. If they were, they would not seem unreasonable; we have good reason to expect that males and females would be affected by school social status in different ways, and the idea that black males would have difficulty coping in high white SES schools seems plausible.

The evidence presented in these analyses does not warrant the assertion that ESAP funds were preferentially allocated to those schools attended by high SES whites and low SES blacks (if SES is what the covariates define). Had our results been significant, however, this might be a more reasonable interpretation than the conclusion that ESAP funds damaged achievement ratings of certain student groups.

APPENDIX B

THE EFFECTS OF SCHOOL PROGRAMS ON ACHIEVEMENT

This appendix presents an analysis of the degree to which the Emergency School Assistance Program and related educational activities affect achievement. Multiple regression is the basic method employed in the analysis. The format of the analysis, and of this appendix, is as follows:

1. Since we do not expect the ESAP program, or any related compensatory programs, to have an effect totally independent of other factors (i.e., characteristics of the students and of the schools), an effort is made to construct the best set of control variables for predicting achievement. The assumptions made in constructing this set of controls and the criteria used in evaluating them are described below.
2. An overall assessment of the effects of having the ESAP program is presented. First, we use multiple regression to see if the ESAP schools have higher achievement than schools that did not receive ESAP funds. Second, we decompose ESAP into the list of specific activities that ESAP schools tend to have, and look at the achievement of schools that have the "ESAP package" of activities.
3. We then offer an assessment of the effects on achievement of each of 61 different variables characterizing activities occurring in the schools. This assessment is also a two-stage process. First, each activity variable is tested individually. Second, a factor analysis is used to group the 61 activity variables into four overall "strategies," and the effects of these are measured.
4. The extensive set of regression equations described in (3) above is distilled and summarized. In this way, the best predictors of achievement among these 61 programs are selected.

5. Additional analysis is done to gain an understanding of the way in which particular activities affected achievement.

A Note on the Use of Weighting in the Analysis

In some of the schools that we studied, one source of sampling error was imbalance in racial composition. For example, a school 90 per cent white would normally have 52 white students, but only five black students, in the sample. The small number of black students means that the mean for that school has a relatively high sampling error. Fortunately, this source of sampling error is easily minimized.

When two means are to be compared, or when a regression analysis is carried out to predict the mean of some school test or attitude scale, cases with small n's must be discounted. The standard formula for doing so is given by Frederick Mosteller and Daniel P. Moynihan:¹

$$w_i = \frac{1}{V_B + \frac{V_w}{n_i}}$$

where:

n_i = number of students in school i

w_i = weight for school i

V_w = variance within schools

V_B = variance between schools

An examination of the formula reveals that small numbers of students provide reliable estimates only if the variation between schools is large relative to the variation within schools. That is to say, if every student in a particular school had exactly the same test score, there would be no point in collecting these test scores for more than one student. Conversely, at the opposite extreme, if there were no true

¹On Equality of Educational Opportunity (New York: Random House, 1972), p. 228.

differences between the means of schools on a particular test, then all schools would be assigned a weight of 0 and there would be no point in analyzing school differences.

David J. Armor observes, in the reference cited above, that on many variables measured in the Coleman report, the variance between schools was approximately 25 per cent of the total variance. In our study, we used the actual ratio of between-school to within-school variance on the achievement test as our weighting factor throughout; these weights were all approximately 3, which is identical to a ratio of 25 per cent.

Control Variables: The Predictors of Achievement

The first step of our analysis was to determine the best set of control variables to use in evaluating program impact. Since we want to assess the relative effects of a variety of programs in terms of whether or not they help to increase achievement, rather than create a comprehensive model that assesses the relative effects of all predictors of achievement, we have followed the procedure used in the Coleman report for the tables below by first controlling for a set of variables that we assume are prior to the programs being evaluated. We deviate from Coleman's analysis considerably though, because we are attempting to assess the effects of compensatory programs in practice during the 1971-72 school year. Thus, we control not only for characteristics of the students' family background, but also for some characteristics of the school. Only those characteristics of the school that can be assumed to be prior to the compensatory education programs are controlled.

The set of variables used in the control equations were obtained through the following procedure. First, the achievement test means for black students and white students were correlated against school characteristics and family background characteristics. This was in excess of 400 items for high schools, with slightly fewer items for grammar schools. All items that were significantly correlated with achievement were examined.

We did not include any of the attitudinal scales in this correlational analysis, as we did not feel safe in assuming that attitudes preceded or caused achievement. We did assume, however, that characteristics and attitudes of teachers and principals are logically prior to, rather than an effect of, achievement.

All significant correlates of achievement were then entered into a step-wise regression program that searched for the minimal number of significant predictors of achievement in a regression equation. These equations were then altered and rerun by deleting and adding variables until an equation was obtained in which (1) all the items that predicted achievement seemed reasonable (or at least not ridiculously unreasonable), and all were associated with achievement in the expected direction; (2) all could be assumed to be logically prior to achievement and to compensatory programs; and (3) when taken together, the variables all increased the per cent of variance explained without increasing the error of estimate.

The regression equations used as controls are presented in Tables B.1 through B.4. Table B.1 shows the equation for black students in the fifth grade; Table B.2, white students in the fifth grade; Table B.3, black students in the tenth grade; and Table B.4, white students in the tenth grade. In each table, the variables are listed in the order in which they entered the equation. Columns 1 and 2 give the multiple r and the r^2 , or variance explained, at each step. Column 3 notes the increment in r^2 contributed by the variable. Column 4 gives the zero-order correlation coefficient, and columns 5 and 6, the unstandardized regression coefficient (here called B) and the standardized regression coefficient (beta). The variables in Table B.1 explain only 17 per cent of variance for black students in the fifth grade, while those in Tables B.2 through B.4 explain 53 per cent of the variance for white students in the fifth grade, 41 per cent of the variance for blacks in the tenth grade, and 45 per cent of the variance for whites in the tenth grade. In all four cases, the majority of the explained variance is attributed to the social background of the student.²

²We considered several different explanations for the fact that the amount of variance explained was so much lower for blacks in the fifth

The particular variables that survived to be included in this equation, as well as the ordering of these variables, are interesting. The regression equation that we used enters variables in the order of the amount of variance explained by each; therefore, the ordering of the variables is a ranking of their impact on achievement. Thus, we can see that, for black students in the fifth grade, characteristics of their socioeconomic background are important predictors of achievement, but nowhere near as important as such characteristics are for black tenth graders or whites at the fifth grade and tenth grade levels. Four components of socioeconomic background status enter into the equation for black fifth grade students. Ranking first is the percentage of families that do not use food stamps; fourth is the percentage of students who own bicycles; sixth is the mean number of siblings that black students have; seventh is the percentage of students who live with both of their parents. If we enter only these four variables into a regression equation, we explain 13 per cent of the variance.

The variables that describe the characteristics of the schools or community of the students are also quite different for blacks in the fifth grade than they are for the other three groups. The superintendent selection process is a dummy variable--one if the superintendent is appointed, zero value if elected. In 83 per cent of the school districts the superintendent is appointed. The 17 per cent in which the superintendent is elected tend to be rural and in the Deep South. Thus, the superintendent selection process is partially a surrogate variable for the last two variables, and it is not surprising that achievement is 15 points lower in schools with elected school superintendents.

grade than for any other group. Other than the straightforward proposition that background characteristics simply do not determine achievement at this level to the extent that they do for others, we have no explanation. The achievement scores for fifth grade blacks show as much variance as the other groups, and the distribution is as close to normal as it is for them. See Appendix D for a detailed discussion of the problem.

TABLE B.1

SUMMARY OF REGRESSION OF ACHIEVEMENT TEST SCORES
OF FIFTH GRADE BLACK STUDENTS ON THE
BEST SET OF CONTROL VARIABLES

(Variables Assumed to Precede ESAP and
Other Compensatory Programs)

Variable	Multiple r	r^2	Unique r^2	Simple r	Unstandardized Regression Coefficient B	Standardized Regression Coefficient beta
Does family receive food stamps . .	0.31	0.09	0.09	0.31	0.47	0.19
Superintendent selection process .	0.35	0.12	0.03	0.20	16.38	0.11
Level of civil rights activity in LEA	0.37	0.14	0.01	0.17	1.55	0.12
Does student own a bicycle	0.38	0.15	0.01	0.20	0.24	0.07
Earliest grade student attended integrated school	0.39	0.15	0.01	-0.08	-0.53	-0.09
Number of siblings	0.40	0.16	0.01	-0.23	-5.16	-0.08
Does student live with both parents	0.40	0.16	0.01	0.14	0.28	0.08
Per cent of students who are Jewish	0.41	0.17	0.00	0.15	0.86	0.05
Per cent of students who are white	0.41	0.17	0.00	0.12	0.08	0.04
Per pupil dollars spent	0.41	0.17	0.00	0.11	0.01	0.02

TABLE B.2

SUMMARY OF REGRESSION OF ACHIEVEMENT TEST SCORES
OF FIFTH GRADE WHITE STUDENTS ON THE
BEST SET OF CONTROL VARIABLES

(Variables Assumed to Precede ESAP and
Other Compensatory Programs)

Variable	Multiple r	r^2	Unique r^2	Simple r	Unstandardized Regression Coefficient B	Standardized Regression Coefficient beta
Does family read newspaper	0.50	0.25	0.25	0.50	0.91	0.24
Number of siblings	0.60	0.35	0.10	-0.48	-21.35	-0.21
Does student live with both parents	0.64	0.41	0.05	0.35	1.30	0.22
Did student attend kindergarten . .	0.66	0.44	0.03	0.38	0.53	0.19
Does student own bicycle	0.68	0.46	0.02	0.48	0.71	0.13
Per cent of students who are Jewish	0.69	0.48	0.02	0.33	2.93	0.16
Per cent of teachers who think tests = achievement	0.71	0.50	0.02	0.22	0.41	0.13
Principal's rating of white teacher quality	0.72	0.51	0.01	0.10	0.21	0.11
Per cent urban in LEA	0.72	0.52	0.01	0.13	-0.23	-0.12
Does family receive food stamps . .	0.73	0.53	0.00	0.33	0.32	0.06

TABLE B.3

SUMMARY OF REGRESSION OF ACHIEVEMENT TEST SCORES
OF TENTH GRADE BLACK STUDENTS ON THE
BEST SET OF CONTROL VARIABLES

(Variables Assumed to Precede ESAP and
Other Compensatory Programs)

Variable	Multiple r	r^2	Unique r^2	Simple r	Unstandardized Regression Coefficient B	Standardized Regression Coefficient beta
Per cent of students whose mothers are high school graduates	0.50	0.25	0.25	0.50	0.77	0.33
Mean score on SES index (whites) . .	0.57	0.32	0.08	0.41	3.38	0.30
Per cent of students who live with parents	0.60	0.35	0.03	0.25	0.33	0.12
Superintendent selection process .	0.61	0.37	0.02	0.25	16.48	0.15
Per cent urban in LEA	0.62	0.38	0.01	0.23	-0.36	-0.27
Percent of families who receive newspaper	0.64	0.40	0.02	0.39	0.41	0.19
Per cent of families who own air conditioner	0.64	0.41	0.01	0.37	0.23	0.12

TABLE B.4

SUMMARY OF REGRESSION OF ACHIEVEMENT TEST SCORES
OF TENTH GRADE WHITE STUDENTS ON THE
BEST SET OF CONTROL VARIABLES

(Variables Assumed to Precede ESAP and
Other Compensatory Programs)

Variable	Multiple r	r^2	Unique r^2	Simple r	Unstandardized Regression Coefficient B	Standardized Regression Coefficient beta
Mean score on SES index (whites) . .	0.60	0.35	0.35	0.60	10.51	0.64
Per pupil dollars spent	0.61	0.37	0.01	0.18	0.02	0.06
Total number of pupils	0.61	0.38	0.01	0.19	-0.04	-0.39
Total number of full-time specialists	0.63	0.39	0.02	0.20	1.70	0.31
Mean score on SES index (blacks) . .	0.65	0.42	0.02	0.33	2.24	0.19
Total number of part-time specialists (1971)	0.65	0.43	0.01	0.16	1.15	0.09
Per cent urban in the school district	0.66	0.43	0.00	0.23	-0.14	-0.08
Per cent of white students who selected school	0.66	0.43	0.00	-0.22	0.17	0.08
Is the school tracked	0.66	0.43	0.00	0.14	0.25	0.04
Number of white in-transfers	0.66	0.43	0.00	-0.34	-0.12	-0.04

The fact that the level of civil rights activity in the community shows such a strong association with the achievement levels of black fifth graders is interesting. Again, this variable is partially a surrogate for the degree to which the school district is urban, but that is by no means the only reason the variable has an effect. But, while it is easy to speculate that the level of civil rights activity produces a motivational boost to the black students, it is very difficult to demonstrate, and such analysis is not within the scope of this appendix.

White social status does not enter the equation directly at all, although the variable measuring the percentage of Jewish students in a school does represent it to some degree. Both the percentage of white students and the number of years the white students of a school have experienced integration have small positive effects. It is most interesting that years of integration experience has a stronger effect than current integration situation. This is especially noteworthy in light of the criticism of the Coleman report for its reliance on current integration data.³

Finally, the significant though small contribution to the explanation of black achievement at the fifth grade level which is made by the per pupil dollars spent within the school is interesting, since no significant contribution is made by this variable either to whites at the fifth grade level or to blacks at the tenth grade level. Some contribution is made by this variable to the achievement of tenth grade whites.

The most important aspects of Table B.1, which need to be kept in mind in the subsequent analysis of the effects of programs on achievement, are the small proportion of variance explained and the rather diverse nature of the variables that do explain the achievement scores of blacks at the fifth grade level.

Table B.2, showing the best regression equation for the achievement scores of white fifth graders, is quite different than Table B.1.

³D. K. Cohen, T. F. Pettigrew, R. T. Riley, "Race and the Outcomes of Schooling" in F. Mosteller and D. P. Moynihan (eds.), On Equality of Educational Opportunity (New York: Random House, 1972).

The variables included in this equation explain approximately three times as much of the variance--53 per cent. The variables measuring socioeconomic status are much more important for this group than they are for blacks in the fifth grade. The per cent urban enters this equation directly, as do two characteristics of the schools themselves--the teachers' evaluation of the importance of tests and the principal's evaluation of the quality of white teachers.

If we consider having gone to kindergarten as a characteristic of socioeconomic background, then the first five variables that enter the equation are measures of socioeconomic background, and they account for 46 per cent of the variance, or 88 per cent of the explained variance. One might be tempted to consider the per cent Jewish as a characteristic of socioeconomic background, but since the per cent Jewish is so low (mean = .97 per cent, standard deviation = 2.92 per cent), the Jewish students' contribution to the variance in the achievement means comes not out of their own scores but, apparently, from their influence on others.

That the achievement scores of white students are higher in schools where teachers think tests are good indicators of achievement can be interpreted in different ways. It could mean that teachers in these schools teach students how to take tests. If this is so, they are more successful in this with white students than with blacks. Since these are, for the most part, schools that were previously all white, it may be that the teachers have been teaching whites how to take tests for a longer time period, or they may simply direct this teaching to whites. Alternately, since this attitude on the part of teachers predicts the achievement scores of only the white students in the fifth grade, it could be considered a form of racism in which the teachers interpret the better achievement scores of whites as indicative of superior underlying ability and in the process reinforce and intensify the existing differences.

The effect of urbanism is ambiguous. In this equation, and in both of the tenth grade equations, the per cent of the county population living in urban places is positively correlated with achievement, but

enters negatively in the regression equation. Does this mean that, all else being equal, living in an urban place lowers achievement? This is possible, of course, but not necessarily true. Residents in urban areas will have opportunities to score higher on the social status variables--receive a daily paper, attend kindergarten, go to school with Jewish students, and so forth. Thus, our social status measures and the urbanism variable are hopelessly confounded. Our best estimates of achievement are constructed by permitting urbanism to enter negatively, but this does not imply a direct negative effect.

In Tables B.3 and B.4 we shift to the tenth grade students. Table B.3 shows the regression equation for black students in the tenth grade, and Table B.4 the regression for white students in the tenth grade.

At the tenth grade level, it is possible to explain a much larger proportion of the variance in the achievement level of black students. For this group, most of the variance is explained by characteristics of the students' socioeconomic background, which is not the case for black students in the fifth grade. Of the seven variables that enter this equation, five are characteristics of socioeconomic background. This includes the first three variables, which enter the equation explaining 35 per cent of the variance, or 85 per cent of the explained variance. The most substantively interesting interpretation of this is that being black or being white makes such a difference in one's initial chance for success in school that even coming from a relatively well-off black family does not help until one has had several years to overcome cognitive deficiencies, test-taking difficulties, or psychological barriers. The simplest explanation is that our measures of socioeconomic background at the fifth grade level are not sensitive enough to tap the range of variance that does have an effect on achievement. The data do not allow us to test these two interpretations.

The superintendent selection process has a significant effect for tenth grade blacks (as was the case for fifth grade blacks). In fact, there is a 16-point difference in the achievement test scores of blacks

in the tenth grade between the 17 per cent in school districts with elected superintendents and the 83 per cent in other school systems. The difference for fifth graders is about the same--15 points. For tenth grade blacks, however, the superintendent selection process is apparently an even more important surrogate for the per cent urban in the district than it is for whether or not the school district is in the Deep South. The direction of the effect of per cent urban is reversed because the variable measuring the superintendent selection process enters the equation before the per cent urban.

Table B.4 presents the effects of characteristics that are prior to the effects of the compensatory programs for white students in the tenth grade. This table shows that the per cent of variance explained for white students in the tenth grade (45 per cent) is second only to that of white students in the fifth grade. It also shows a very different and more diverse range of variables explaining that variance than even that for black fifth graders. Socioeconomic background again has the greatest effect; 37 per cent of the variance, or 82 per cent of the explained variance, is accounted for by socioeconomic background characteristics.

The rest of the results for white tenth graders are quite divergent from those for the other groups of students. Total resources seems to have a much greater effect at this level; three variables that measure overall resources show significant effects on achievement levels of white tenth grade students. These are: total per pupil dollars spent, total number of part-time specialists, and total number of full-time specialists in the year preceding the year of the testing.

There is also an indication from this table that the high achieving white students are not only high in socioeconomic status, but that they are also volunteers for the school. This is indicated both by the significant contribution of variables measuring the per cent of white students who elected to go to their respective schools and the per cent of white students who have transferred into the school. There is a suggestion here that these are volunteers for desegregation, since these schools are

desegregated. It is quite possible, however, that these are simply good schools into which educationally aware families are sending their children. They are also large schools, and this tends to attract students. Thus, while the schools may be both effective and desegregated, the black and white students may be in separate classrooms that are quite different in their effectiveness. This is a point to which we shall return.

The four tables describing the effects of socioeconomic background, community characteristics, and school characteristics can be briefly summarized. For all groups, except black students in the fifth grade, approximately 50 per cent of the variance is explained by a combination of these characteristics. The combinations vary considerably from group to group, but the largest proportion of variance is explained by socioeconomic background characteristics for all groups, except, again, for blacks in the fifth grade. Racial integration has a significant though not a very strong effect, but a much more precise analysis of this is required and appears in Volume II of this report. Overall level of effort (dollars and personnel) has very slight effect, except for white students in the tenth grade, where it is moderate. Finally, there is a set of interrelated variables that reappear in these tables--per cent urban in school district, per cent Jewish in school, the superintendent selection process, and the level of civil rights activity--which all suggest that cumulative characteristics of local culture make a difference.

The Effects of ESAP: Introduction

ESAP is a "program"--a collection of school activities strategically selected. In this appendix we will analyze the data in terms of individual school "activities" and also in terms of clusters of activities that tend to occur together. We will call the latter "strategies."

Having developed the control equations, we can now begin evaluating ESAP. The first step is to determine whether schools that received ESAP funds had higher achievement than those that did not. Second, we will decompose the ESAP program into the collection of activities that

ESAP most often funds--the "ESAP strategy." Finally, we will turn our attention away from ESAP and look at the effects of individual activities. However, before we begin that analysis and discussion, we must outline the set of criteria used in assessing the importance of independent variables. The criteria are applicable not only to the discussion of the effects of the ESAP program, but also, in the next section, to the discussion of the effects of the various types of activities within ESAP and related to ESAP.

A caveat must be entered at this point: that an activity shows a negative effect even after controlling for socioeconomic background, community characteristics, and school characteristics, should not be interpreted as evidence of a negative effect of that activity. It should instead be viewed as an activity that is utilized extensively in the schools that have a low level of achievement because of the characteristics of the students, of the community, or of the school. It is not likely that programs so used will show a positive regression coefficient or even a zero regression coefficient. The reader familiar with psychological statistics will recognize the statistical problem as attenuation due to measurement error. Briefly, measurement error in the control variables prevents beta from being as different from r as it should be--the difference between beta and r is underestimated. Alternately, a negative beta may be real, but only in the sense that schools that make heavy investments in activity "a" may do so because they do not highly value achievement, and are therefore not trying to raise it as much as they are trying to accomplish other things; or their use of strategy "a" may be indicative of a poor quality of education. Even in this case, however, it is hard to argue that activity "a" is single-handedly driving achievement down.

Since it is clear that some programs are more extensively or exclusively used in schools with low levels of achievement--as they should be--it is necessary to review how we can recognize this. Essentially, this can be done through a comparison of the zero-order correlation coefficient between the program and achievement test scores with the standardized regression coefficient (beta). A set of hypothetical comparisons between r and beta that outlines likely outcomes is presented below.

The zero-order correlation between an activity and achievement indicates simply whether schools with a particular activity have higher achievement than do other schools, without regard to difference in school social class. Beta is a measure of the difference between schools with an activity and those without it, after they have been matched statistically on social class. This statistical matching is always imperfect, and we must keep this imperfection in mind. To do so, we should focus on the following elementary rule: If beta is more positive than r , this activity is concentrated in low-SES schools; if beta is more negative than r , the activity is more likely to be found in high-status schools. Thus, we would interpret those hypothetical combinations of beta and r as follows:

<u>r</u>	<u>beta</u>	
+ .10	+ .05	Program occurs in high-SES schools, so that high r is misleading. Given imperfect controls, true beta may be 0; in any case, it is smaller than .05.
+ .05	+ .05	The tendency of program to be in high-performance schools is not an SES effect; this .05 is more interesting than that above.
- .05	+ .05	Program is in low-SES schools, but controlling this reverses sign. This beta is definitely underestimated; true beta is higher than that in either case above. Evidence of a successful program.
+ .05	+ .10	Beta larger than r means program occurs in high-achievement schools, but not because they are high status. In fact, program is in high-performance, low-status schools. Evidence of success.
- .10	- .05	Most common case: program is in low-performance schools, but mostly or entirely because it is concentrated in low-SES schools. Effect probably not negative.

The criteria used in judging whether or not a program has an important influence on achievement are outlined below:

1. Beta must reach a minimum value of $\geq .07$ in order to be considered important. This is equivalent to just under one month in achievement level for black students, and equivalent to just over a month for white students. This result is statistically significant at the .05 level (one-tailed test) for elementary school programs, but is not significant for high school programs.
2. A minimum criterion is set to insure that the additional variance, which is added by the inclusion of the program variable in the regression equation after the control variables, must be at least .5 per cent. This means that at least .5 per cent of the variance in achievement must be unique to the variable in question.⁴
3. The step-wise regression must behave "reasonably." If the beta is larger than r , we must examine which control variable caused this change, and decide how far we trust that control.
4. Part of the "reasonable" criterion is that if $(\text{beta} - r)$ is negative, its absolute value must be smaller than $4 \times \text{beta}$, and ideally much smaller than that. Since the controls are imperfect, their effect is understated; if beta is much less than r , it can be assumed that it is even smaller than shown. Conversely, if $(\text{beta} - r)$ is positive, beta may be larger than the value shown.
5. For the same reasons as discussed above in (4), the ratio of the unique variance explained to r^2 should remain large, and certainly should not fall below .1. Values for this ratio are given whenever the unique variance added is .002 or greater.

⁴We set minimum criteria for portions of the explained variance uniquely accounted for by the program in question. The values are: for black students in the fifth grade, 2.9 per cent; for white students in the fifth grade, 1.0 per cent; for black students in the tenth grade, 1.2 per cent; for white students in the tenth grade, 1.1 per cent.

These are essentially quite conservative criteria, taking into account what we know concerning the dollar level of ESAP and the related compensatory programs under study, the short duration of these programs, that these programs represent a small proportion of educational resources, and our prior knowledge of the effects of socioeconomic background characteristics and other factors. If the ESAP program meets these criteria, or if other compensatory programs meet them, then we can be confident that they are having an effect on achievement.

The Effects of the ESAP Program

We now turn to Table B.5, which shows the results of the regression equations for the ESAP program itself. The independent variable here is simply whether or not the school received ESAP funds. While the regression analysis is not as accurate as the analysis of covariance, it is important to know if the results it yields are consistent with those of Appendix A, since this analysis is somewhat different in the control variables it uses and in the inclusion of the 300 supplemental schools. There are three equations for each of the four groups of students. First, there is an equation that enters the control variables and then the dummy variable describing whether or not there was an ESAP program in the academic year 1971-72. There is a second equation that enters the control variables first and then the dummy variable describing whether or not there was a program in the academic year 1970-71. Finally, there is an equation that enters the control variables and then both of the dummy variables for whether or not there were ESAP programs in both years. All twelve of these regression equations are summarized in Table B.5.

The results in Table B.5 are fairly consistent with the analysis of covariance. There is clear evidence that ESAP schools do not show higher achievement for fifth graders, or for tenth grade white students. The results are also consistent in that they show at least a weak effect for tenth grade black students as a result of having ESAP funds during the 1971-72 school year. Two of the criteria that we established are not

TABLE B.5

THE EFFECT OF ESAP ON ACHIEVEMENT: SUMMARY OF REGRESSION EQUATIONS
OF CONTROL VARIABLES AND ESAP PROGRAM ON ACHIEVEMENT TEST SCORES

Student Group and Variance Explained by Control Variables	Years in Which School Has ESAP Funding	Simple Corre- lation Coeffi- cient	Stan- dardized Regres- sion Coeffi- cient beta	Beta-r	Simple r^2	Unique r^2 After Controls	Unstan- dardized Regres- sion Coeffi- cient B	Number of Achieve- ment Months Gained (B)/5.8
Fifth grade black ($r^2 = 0.17$)	1970-1971	0.05	-0.01	-.06	0.00	0.00	-1.46	-0.25
	1971-1972	-0.00	0.00	.0	0.00	0.00	NS	NS
	1970-1972	0.03	-0.01	-.04	0.00	0.00	-0.77	-0.13
Fifth grade white ($r^2 = 0.53$)	1970-1971	0.02	0.00	-.02	0.00	0.00	NS	NS
	1971-1972	0.03	-0.01	-.04	0.00	0.00	-1.56	-0.27
	1970-1972	0.02	-0.01	-.03	0.00	0.00	-0.81	-0.14
Tenth grade black ($r^2 = 0.41$)	1970-1971	-0.03	-0.04	-.01	0.00	0.00	-4.39	-0.76
	1971-1972	0.07	0.06	-.01	0.01	0.00	6.55	1.13
	1970-1972	0.03	0.01	-.02	0.00	0.00	0.93	0.16
Tenth grade white ($r^2 = 0.43$)	1970-1971	-0.07	-0.09	-.02	0.01	0.01	-12.15	-2.09
	1971-1972	-0.09	-0.09	.00	0.01	0.01	-12.80	-2.21
	1970-1972	-0.11	-0.13	-.02	0.01	0.01	-12.23	2.11

met, however. First, the standardized regression coefficient falls below the minimum level of .07, though only slightly (beta equals .06). Second, having the ESAP program does not make a unique contribution of at least .5 per cent of the variance explained.

The fact that the mere presence of ESAP did not result in higher levels of achievement should not be surprising. ESAP was a relatively small program in relation to all of the other compensatory education programs funded by federal, state, and local governments. ESAP was an even smaller effort relative to the total resources at work in school systems. ESAP was in operation for a very short period of time--at most for two years. Finally, and most important for our purposes, the name "ESAP" is used to describe a widely varied group of policies, procedures, and activities. If we examine the experimental schools separately from the control schools, we find that the amount of variance in student characteristics, school board characteristics, and programs operating was as large among the ESAP schools as among the control schools. Thus, if there were effective programs and ineffective programs operating under the name of ESAP, the regression analysis for the mere presence of ESAP could not be expected to show results, unless there was a preponderance of either effective or ineffective programs. This is not the case, as we shall see below.

The Effects of Activities Frequently Funded by ESAP:
The ESAP Strategy

We saw in Chapter 1 that the experimental schools gave somewhat different answers to the 60 questions used to describe school activities. Thus, we have a good idea of what activities ESAP most frequently funded. Let us next make some assessment of what the effects would be if the particular constellation of school activities that ESAP programs were most likely to include had been used more extensively.⁵ To do this, we constructed a variable that measured the ESAP strategy--that particular

⁵The suggestion to incorporate this type of analysis was made by a group of consultants who reviewed draft analyses at a conference held

constellation of activities selected by the experimental schools, but not the control schools. In so doing, we made a rather unusual use of regression analysis. The question was framed backwards--which group of activities predicts whether or not a school will be an experimental school rather than a control school? A dummy variable was constructed in which experimental schools equaled one and control schools equaled zero. Then a step-wise multiple regression was run with this dummy variable as the dependent variable, and all of the questions dealing with activities, specialists, and physical resources as independent variables. The unstandardized regression coefficients for the more important variables were then used to weight these variables, which were then summed to create the ESAP strategy.

The activities that make up the ESAP strategy are presented below. The fifth and tenth grades are shown separately, with their respective weights (or regression coefficients).

<u>Fifth Grade</u>	<u>Tenth Grade</u>
.172 Remedial reading programs	.206 Gym teachers or coaches per pupil
.285 Counselor's aides per pupil	1.519 Drama or speech teachers per pupil
.037 Administrators per pupil	.649 Truant officers per pupil
.236 Demonstration or experimental classrooms	.216 Human or community relations literature
.057 Programs to improve inter-group relations among teachers	.251 Nurses per pupil
.111 Special classrooms for socially or emotionally maladjusted	.229 Additional space
.073 Social workers per pupil	.240 Administrators per pupil
	.232 Textbooks
	.269 Testing materials
	.137 Teacher's aides per pupil

at the Russell Sage Foundation. James S. Coleman made the specific suggestion to construct a variable representing the "ESAP strategy." The particular construction of this variable was done subsequent to the Russell Sage Conference.

<u>Fifth Grade</u>	<u>Tenth Grade</u>
.033 Library aides per pupil	.595 Audio-visual aides per pupil
.066 Teacher's aides per pupil	.428 Drama or speech teachers per pupil
.084 Special classrooms for underachievers	.257 Library aides per pupil
	.256 Music or art teachers per pupil
	1.226 Social workers per pupil
	1.562 Psychologists per pupil
	.427 Counselor's aides per pupil
	.054 Vocational education teachers per pupil
	.148 Remedial math teachers per pupil
	.111 School furnishings
	.104 Renovations
	.073 Remedial reading teachers per pupil
	.106 Librarians per pupil
	.010 Community relations specialists per pupil

The particular combinations of activities that are most likely to be utilized by ESAP-funded schools are quite diverse and do not lend themselves to simple categorization. They are not, taken individually, the activities most likely to improve achievement test scores (though it must be pointed out again that the central goal of ESAP need not be the improvement of achievement test results). The question is--do these activities improve achievement when taken in combination? The answer seems to be "yes and no" (Table B.6).

The two constructed ESAP strategy variables were entered into the same regression equations as in Table B.5. Thus, we first controlled for

TABLE B.6

THE EFFECT OF ESAP ON ACHIEVEMENT: SUMMARY OF REGRESSION EQUATIONS
USING BEST LINEAR APPROXIMATIONS OF ESAP-FUNDED ACTIVITIES

Student Group and Variance Explained by Control Variables	Simple Corre- lation Coeffi- cient	Stan- dardized Regres- sion Coeffi- cient beta	Beta-r	Simple r^2	Unique r^2 After Controls	Unique r^2 After Controls/ Simple r^2	Unstan- dardized Regres- sion Coeffi- cient B	Number of Achieve- ment Months Gained (B)/5.8
Fifth grade black ($r^2 = .17$)	.024	.026	.002	.0006	.0006	1.0	.04	.0
Fifth grade white ($r^2 = .53$)	--	--	--	--	--	--	--	--
Tenth grade black ($r^2 = .41$)	.042	.048	.006	.0017	.0022	1.3	1.76	.3
Tenth grade white ($r^2 = .43$)	.153	.047	-.106	.0234	.0022	.1	2.29	.4
Tenth grade black males	.088	.078	-.010	.0077	.0054	.7	2.81	.5

Note: Dashes (--) indicate results too small to be computed by regression program, $\beta \approx .00$.

predictors of achievement that were assumed to precede school activities. Table B.6 shows that the ESAP strategy variables do not meet our criteria for judging their contribution as significant for any of the four groups of students. Indeed, for white students in the fifth grade the regression program used does not even permit the variable to enter the equation. Thus, it seems likely that the selection of activities that distinguishes ESAP schools does not represent a coherent strategy aimed at the improvement of achievement test scores. If it does represent such a strategy, it is a failure.

The tenth grade regression equations, however, suggest the possibility of an effect. This led us to include the fifth row in Table B.6--the effect of the ESAP strategy on the achievement scores of black male students in the tenth grade--and here our criterion for the effectiveness of the strategy is met, consistent with the analysis of covariance results.⁶

The consistency of the analysis of covariance, the ESAP program presence regression, and now the ESAP strategy regression, is important. First, this suggests that our overall theory of the evaluation--that ESAP can be analyzed by breaking the program down into a set of activities--is sound. Second, this presents some evidence that the ESAP program was genuine. If the analysis of covariance results were a statistical fluke, doubling the sample size by including the supplementary schools in the analysis could be expected to destroy the effect. Finally, the consistency indicates that ESAP was not itself a "peculiar" program; the same collection of activities, funded in a different program, would show the same results. In fact, most of the activities that make up the ESAP strategy in the analysis are not ESAP-funded. A school contributes to the ESAP strategy to the

⁶In addition to the table discussed above, regression equations were run entering the ESAP strategy variable with prior controls, simultaneously entering the factor variables that are presented below in Tables B.12 through B.15. When this was done, the ESAP strategy variable showed a significant effect for both whites and blacks in the tenth grade, but did not even enter the equation at the fifth grade level. This suggests that there are distinct and significant effects from pursuing different strategies. However, the problems of multicollinearity have not been solved for such an analysis.

extent that it has an activity that is frequently funded by ESAP, regardless of whether that particular program is ESAP-funded or not.

The Effects of School Activities

We turn now to the analysis of specific activities carried out within the schools. This analysis is for all activities in operation, whether or not they were funded by ESAP. It is much more useful to know which programs are effective and which are not, by whatever name they are called, than to know only which ESAP programs were effective.

Tables B.7 through B.10 present results of the same types of regressions as shown in Table B.5, but now we are examining the effects of 61 different measures of school activities or use of specialized personnel. In some instances the measures are very closely related and thus may be measuring different aspects of the same program (e.g., whether or not a school has funds for equipment and how many audio-visual aides are working in a school). Table B.7 presents these regressions for fifth grade blacks, Table B.8 for fifth grade whites, Table B.9 for tenth grade blacks, and Table B.10 for tenth grade whites.

Tables B.7 through B.10 present a tremendous amount of information concerning the effects of compensatory programs. Each of the four tables contains eight items of information for each of 61 different program variables. Not only would it be extremely tedious to discuss these tables line by line and column by column, but this would not add to the understanding of the effects of these activities beyond what the tables themselves do. Thus, any reader concerned with all of the details of these tables would do better to read the tables themselves than to read our discussion of them. Each table consists of four parts. Part A presents results for 19 measures of the presence of certain activities. A positive beta indicates that the presence of an activity, as reported by the principal, is associated with higher achievement. Part B codes these same activities differently; here the code states whether the program was in existence in 1970-71, 1971-72, or both. An activity operating for two years may show results,

while the same activity may not show effects during its first year. Part C shows the impact of employing 19 different kinds of school specialists. Here the variable is the number of such specialists for each 1,000 pupils. Part D shows the achievement in schools that received materials or physical plant modifications. As in Part B, the scoring covers two years, with the highest value of the variable being for supplies received in both 1970-71 and 1971-72.

The tables give the following data: the zero-order correlation, the beta, and the difference; the total variance explained by this variable (r^2) and the amount of variance uniquely explained by the variable when it is entered in the regression equations after the controls; next, for all cases where $B > .035$, the ratio of the unique variance to the total variance; and finally, the unstandardized regression coefficient, expressed first on test score units (where 10 units = 1 additional correct response, so the score range is from 0 to 570) and then in number of achievement months gained. These last two columns are in a sense the most important, since they are the only columns that show the achievement gain one can expect. In Part A, this is the gain attributable to the existence of the program. In Part B, the numbers are usually smaller, but they show the gain in scores for each additional year the activity has been in existence. A school that did not have a specific activity in either year is scored zero; a school with an activity in the first year only is scored one; the second year only, two, and both years, three. Thus, the achievement in schools with two years of an activity is higher than in schools without the activity by an amount equal to three times the amount shown in the last two columns of Part B. Part C gives the gain attributable to one additional specialist for each 1,000 pupils, while Part D shows a per-year gain, as in Part B.

Using the more stringent criteria discussed earlier in this appendix, we find 14 program variables that demonstrate a significant effect on achievement test scores. Let us turn then to an examination of each of the four tables; we will focus on individual programs.

TABLE B.7
EFFECT OF SCHOOL ACTIVITIES ON ACHIEVEMENT, FIFTH GRADE BLACK STUDENTS

Part A: Principal's Report of Activity Existence

Activity ^a	Simple Corre- lation Coeffi- cient r	Stan- dardized Regres- sion Coeffi- cient beta	Beta-r	Total Variance Ex- plained: Simple r^2	Unique Variance Ex- plained: After Controls	Ratio: Unique Variance $\frac{\text{Unique Variance}}{\text{Total Variance}}$	Unstan- dardized Regres- sion Coeffi- cient B	Number of Achieve- ment Months Gained (B)/5.8
Guidance counselors	.01	.02	.01	.00	.00		2.52	.4
Social worker or home visitor	.05	-.01	-.06	.00	.00		-1.59	-.3
Team teaching	.02	-.02	-.03	.00	.00		-1.87	-.3
Teacher aides	-.06	.04	.10	.00	.00		3.99	-.7
Teacher workshops or in- service training for teachers or teacher aides	.06	.04	-.02	.00	.00		5.69	1.0
Remedial reading program . . .	-.08	.01	.09	.00	.00		0.74	.1
Ungraded classrooms	-.03	-.05	-.02	.00	.00		-6.83	-1.2
Demonstration or experimental classrooms	.06	.04	-.02	.00	.00		5.41	.9
Special classrooms for under- achievers	-.01	.04	.05	.00	.00		4.30	.7
Special classrooms for socially or emotionally maladjusted .	-.01	.02	.03	.00	.00		2.40	.4
Achievement grouping of classrooms	.01	.05	.04	.00	.00		5.11	.9

^aYes/No coding of activity existence.

Note: Dashes (--) indicate coefficients too small for computation, beta $\approx$.00; blanks indicate ratio not computable.

Table B.7, Part A--Continued

Activity	Simple Corre- lation Coeffi- cient r	Stan- dardized Regres- sion Coeffi- cient beta	Beta-r	Total Variance Ex- plained: Simple r^2	Unique Variance Ex- plained: After Controls	Ratio: Unique Variance Total Variance	Unstan- dardized Regres- sion Coeffi- cient B	Number of Achieve- ment Months Gained (B)/5.8
Achievement grouping within classes	-.03	-.02	.01	.00	.00		-4.10	- .7
Major curriculum revisions . .	-.03	-.05	-.02	.00	.00		-5.51	-1.0
Program for tutoring low achieving students	-.06	-.07	-.01	.00	.00		-7.26	-1.2
Special program to increase parent-teacher contact (e.g., conferences)	-.06	-.08	-.02	.00	.01	1.8	-8.56	-1.5
Program to improve inter- group relations among students	.01	-.02	-.03	.00	.00		-1.57	- .3
Program to improve intergroup relations among teachers . .	--	--	--	--	--	--	--	--
Equipment for students to use, such as reading machines, tape recorders, video tape machines, etc.	.01	.01	-.00	.00	.00		1.86	.3

TABLE B.7
EFFECT OF SCHOOL ACTIVITIES ON ACHIEVEMENT, FIFTH GRADE BLACK STUDENTS

Part B: Principal's Report of Activity Duration

Activity ^a	Simple Correlation Coefficient r	Stan- dardized Regres- sion Coefficient beta	Beta-r	Total Variance Ex- plained: Simple r ²	Unique Variance Ex- plained: After Controls	Ratio: Unique Variance Total Variance	Unstan- dardized Regres- sion Coefficient B	Number of Achieve- ment Months Gained (B)/5.8
Guidance counselors	.01	.02	.01	.00	.00		1.03	.2
Social worker or home visitor .	--	--	--	--	--	--	--	--
Team teaching	.01	-.03	-.04	.00	.00		-1.40	-.2
Teacher aides	-.04	.05	-.09	.00	.00		2.29	.4
Teacher workshops or in-service training for teachers or teacher aides	.11	.05	-.06	.01	.00	0.2	2.63	.4
Remedial reading program . . .	-.06	.03	.09	.00	.00		1.27	.2
Ungraded classrooms	-.03	-.06	-.03	.00	.00		-2.77	-.4
Demonstration or experimental classrooms	.05	.02	-.03	.00	.00		1.13	.2
Special classrooms for underachievers	-.02	.02	-.04	.00	.00		0.79	.1
Special classrooms for socially or emotionally maladjusted .	-.01	.00	-.01	.00	.00		0.31	.1
Achievement grouping of classrooms	.06	.06	.00	.00	.00		2.33	.4

^aActivity coding: 3: two years; 2: this year only; 1: last year only; 0: neither year.

Note: Dashes (--) indicate coefficients too small for computation, beta $\approx$.00; blanks indicate ratio not computable.

Table B.7, Part B--Continued

Activity	Simple Correlation Coefficient r	Stan- dardized Regres- sion Coefficient beta	Beta-r	Total Variance Ex- plained: Simple r^2	Unique Variance Ex- plained: After Controls	Ratio: Unique Variance <u>Total Variance</u>	Unstan- dardized Regres- sion Coeffi- cient B	Number of Achieve- ment Months Gained (B)/5.8
Achievement grouping within classes	--	--	--	--	--	--	--	--
Major curriculum revisions . .	-.04	-.07	-.03	.00	.00		-2.79	-.5
Program for tutoring low achieving students	-.05	-.06	-.01	.00	.00		-2.52	-.4
Special program to increase parent-teacher contact (e.g., conferences)	-.04	-.09	-.05	.00	.01	4.3	-3.30	-.6
Program to improve intergroup relations among students . .	.02	-.01	-.03	.00	.00		-0.26	-.6
Program to improve intergroup relations among teachers . .	.02	.00	-.02	.00	.00			.0
Equipment for students to use, such as reading machines, tape recorders, video tape machines, etc.	.08	.05	-.03	.01	.00	.4	4.21	.7

TABLE B.7

EFFECT OF SCHOOL ACTIVITIES ON ACHIEVEMENT, FIFTH GRADE BLACK STUDENTS

Part C: Auxiliary Personnel Per Pupil

Activity ^a	Simple Corre- lation Coeffi- cient r	Stan- dardized Regres- sion Coeffi- cient beta	Beta-r	Total Variance Ex- plained: Simple r ²	Unique Variance Ex- plained: After Controls	Ratio: Unique Variance Total Variance	Unstan- dardized Regres- sion Coeffi- cient B	Number of Achieve- ment Months Gained (B)/5.8
Remedial reading teacher	-.15	.01	.16	.00	.00		.24	.0
Remedial math teacher	-.02	.04	.06	.00	.00		1.70	.3
Music or art teacher	--	--	--	--	--	--	--	--
Drama or speech teacher	.01	-.03	-.04	.00	.00		-3.35	-.6
Gym teacher or coach	.03	.06	.02	.00	.00		2.00	.3
Vocational education teacher . .	.02	.08	.06	.00	.01	13.8	6.50	1.1
Counselor aides	-.10	-.05	.05	.01	.00	.3	-10.59	-1.8
Guidance counselor	.01	.04	.03	.00	.00		2.31	.4
Psychologist	-.06	-.09	-.03	.00	.01	2.1	-8.06	-1.4
Social worker	-.02	-.06	-.04	.00	.00		-4.51	-.8
Speech therapist	.05	.01	-.04	.00	.00		.69	.1
Teacher aides	--	--	--	--	--	--	--	--
Library aide or clerk	.04	.03	-.01	.00	.00		1.80	.3
Librarian	--	--	--	--	--	--	--	--
Nurse	.08	.13	.04	.01	.02	2.4	5.55	1.0
Audio-visual specialist	-.00	-.02	-.02	.00	.00		-4.06	-.7
Truant officer/home visitor .	--	--	--	--	--	--	--	--
Community relations specialist	-.00	-.03	-.03	.00	.00		-1.50	-.3
Administrator (not listed above)	-.06	-.01	.05	.00	.00		-.30	-.1

^aNumber of school specialists per pupil.

Note: Dashes (--) indicate coefficients too small for computation, $\beta \approx .00$; blanks indicate ratio not computable.

TABLE B.7

EFFECT OF SCHOOL ACTIVITIES ON ACHIEVEMENT, FIFTH GRADE BLACK STUDENTS

Part D: Funds Received for Materials and Plant

Activity ^a	Simple Corre- lation Coeffi- cient r	Stan- dardized Regres- sion Coeffi- cient beta	Beta-r	Total Variance Ex- plained: Simple r ²	Unique Variance Ex- plained: After Controls	Ratio: Unique Variance Total Variance	Unstan- dardized Regres- sion Coeffi- cient B	Number of Achieve- ment Months Gained (B)/5.8
School furnishings	-.03	-.01	.02	.00	.00		-.28	-.0
Renovations	--	--	--	--	--	--	--	--
Additional space	--	--	--	--	--	--	--	--
Extra text books	.04	.08	.04	.00	.01	4.7	3.66	.6
Extra testing materials . . .	-.01	.08	.09	.00	.01	61.5	3.40	.6
Human or community relations literature	.10	.05	-.05	.01	.00	.2	2.04	.4

^aReceipt of materials and supplies coding: 3: both years; 2: this year only; 1: last year only; 0: neither year.

Note: Dashes (--) indicate coefficients too small for computation, $\beta \approx .00$; blanks indicate ratio not computable.

TABLE B.8

EFFECT OF SCHOOL ACTIVITIES ON ACHIEVEMENT, FIFTH GRADE WHITE STUDENTS

Part A: Principal's Report of Activity Existence

Activity ^a	Simple Correlation Coefficient r	Standardized Regression Coefficient beta	Beta-r	Total Variance Explained: Simple r^2	Unique Variance Explained: After Controls	Ratio: Unique Variance Total Variance	Unstandardized Regression Coefficient B	Number of Achievement Months Gained (B)/5.8
Guidance counselors	-.01	.06	.07	.00	.00		9.28	1.6
Social worker or home visitor . .	-.02	-.02	-.00	.00	.00		-2.95	-.5
Team teaching	.16	.04	.02	.03	.00	.1	4.87	.8
Teacher aides	--	--	--	--	--	--	--	--
Teacher workshops or in-service training for teachers or teacher aides	.05	.02	-.03	.00	.00		3.91	.7
Remedial reading program	--	--	--	--	--	--	--	--
Ungraded classrooms	-.00	-.04	-.04	.00	.00		-6.85	-1.2
Demonstration or experimental classrooms	.06	-.01	-.07	.00	.00		-1.85	-.3
Special classrooms for underachievers	-.10	-.05	.06	.01	.00	.2	-6.66	-1.1
Special classrooms for socially or emotionally maladjusted . .	-.01	.02	.02	.00	.00		3.23	.6
Achievement grouping of classrooms	-.06	.02	.08	.00	.00		1.96	.4

^aYes/No coding of activity existence.

Note: Dashes (--) indicate coefficients too small for computation, beta $\approx$.00; blanks indicate ratio not computable.

Table B.8, Part A--Continued

Activity	Simple Correlation Coefficient r	Stan- dardized Regres- sion Coeffi- cient beta	Beta-r	Total Variance Ex- plained: Simple r^2	Unique Variance Ex- plained: After Controls	Ratio: Unique Variance Total Variance	Unstan- dardized Regres- sion Coeffi- cient B	Number of Achieve- ment Months Gained (B)/5.8
Achievement grouping within classes	.05	-.04	-.08	.00	.00		-7.36	-1.3
Major curriculum revisions . . .	-.01	-.06	-.06	.00	.00		-8.55	-1.5
Program for tutoring low achieving students	.12	.02	-.10	.01	.00	.0	2.61	.4
Special program to increase parent-teacher contact (e.g., conferences)	.06	-.04	-.10	.00	.00		-5.67	-1.0
Program to improve inter- group relations among students	.04	-.03	-.06	.00	.00		-3.42	-.6
Program to improve inter- group relations among teachers	-.02	-.06	-.04	.00	.00		-8.24	-1.4
Equipment for students to use, such as reading machines, tape recorders, video tape machines, etc.	.14	-.13	-.26	.02	.01	.6	-.25	.0

TABLE B.8

EFFECT OF SCHOOL ACTIVITIES ON ACHIEVEMENT, FIFTH GRADE WHITE STUDENTS

Part B: Principal's Report of Activity Duration

Activity ^a	Simple Correlation Coefficient r	Standardized Regression Coefficient beta	Beta-r	Total Variance Explained: Simple r ²	Unique Variance Explained: After Controls	Ratio: Unique Variance Total Variance	Unstandardized Regression Coefficient B	Number of Achievement Months Gained (B)/5.8
Guidance counselors	-.03	.05	.08	.00	.00		2.70	.5
Social worker or home visitor . .	-.01	-.02	-.01	.00	.00		-.95	-.2
Team teaching	.17	.04	-.13	.03	.00	.1	1.85	.3
Teacher aides	--	--	--	--	--	--	--	--
Teacher workshops or in-service training for teachers or teacher aides	--	--	--	--	--	--	--	--
Remedial reading program	-.09	-.01	.08	.01	.00	.0	-.41	-.1
Ungraded classrooms	-.00	-.04	-.04	.00	.00		-2.46	-.4
Demonstration or experimental classrooms	.07	-.01	-.08	.01	.00	.0	-.40	-.1
Special classrooms for under- achievers	-.10	-.05	.05	.01	.00	.2	-2.34	-.4
Special classrooms for socially or emotionally maladjusted . .	-.01	.03	.04	.00	.00		1.63	.3
Achievement grouping of classrooms	-.05	.03	.08	.00	.00		1.32	.2

^aActivity coding: 3: two years; 2: this year only; 1: last year only; 0: neither year.

Note: Dashes (--) indicate coefficients too small for computation, beta $\approx$.00; blanks indicate ratio not computable.

Table B.8, Part B--Continued

Activity	Simple Correlation Coefficient r	Stan- dardized Regres- sion Coeffi- cient beta	Beta-r	Total Variance Ex- plained: Simple r^2	Unique Variance Ex- plained: After Controls	Ratio: Unique Variance Total Variance	Unstan- dardized Regres- sion Coeffi- cient B	Number of Achieve- ment Months Gained (B)/5.8
Achievement grouping within classes	.07	-.02	-.09	.01	.00	.1	-1.02	-.3
Major curriculum revisions . . .	-.00	-.07	-.07	.00	.00		-3.19	-.6
Program for tutoring low achieving students	.14	.04	-.10	.02	.00	.1	1.93	.3
Special program to increase parent-teacher contact (e.g., conferences)	.04	-.07	-.11	.00	.00		-3.36	.6
Program to improve inter- group relations among students	.03	-.02	-.05	.00	.00		-.97	-.2
Program to improve inter- group relations among teachers	-.03	-.07	-.04	.00	.00		-3.00	-.5
Equipment for students to use, such as reading machines, tape recorders, video tape machines, etc.	.06	.01	-.05	.00	.00		.55	.1

TABLE B.8

EFFECT OF SCHOOL ACTIVITIES ON ACHIEVEMENT, FIFTH GRADE WHITE STUDENTS

Part C: Auxiliary Personnel Per Pupil

Activity ^a	Simple Correlation Coefficient r	Standardized Regression Coefficient beta	Beta-r	Total Variance Explained: Simple r^2	Unique Variance Explained: After Controls	Ratio: Unique Variance Total Variance	Unstandardized Regression Coefficient B	Number of Achievement Months Gained (B)/5.8
Remedial reading teacher.	-.23	-.02	.21	.05	.00	.0	-.69	-.1
Remedial math teacher	-.08	.06	.14	.01	.00	.6	3.38	.6
Music or art teacher	.05	.01	-.04	.00	.00		.28	.0
Drama or speech teacher	-.15	-.13	.02	.02	.01	.3	-3.49	-.6
Gym teacher or coach	.01	.02	.01	.00	.00		.57	.1
Vocational education teacher . . .	.01	.04	.04	.00	.00		5.21	.9
Counselor aides	-.08	.05	.13	.01	.00	.3	11.41	2.0
Guidance counselor	.02	.06	.06	.00	.00		4.10	.7
Psychologist.	-.02	-.01	.01	.00	.00		-.58	-.1
Social worker	-.02	-.01	.01	.00	.00		-.64	-.1
Speech therapist	.04	-.03	-.07	.00	.00		-2.50	-.4
Teacher aides	-.08	.06	.14	.01	.00	.5	.54	.1
Library aide or clerk	-.03	.01	.04	.00	.00		.68	.1
Librarian	.09	.03	-.06	.01	.00	.1	1.65	.3
Nurse	-.07	-.02	.07	.01	.00	.1	-.84	-.1
Audio-visual specialist	-.03	-.02	.02	.00	.00		-3.18	-.5
Truant officer/home visitor . . .	-.09	-.05	.04	.01	.00	.3	-1.75	-.3
Community relations specialist . .	-.01	.02	.03	.00	.00		.81	.1
Administrator (not listed above).	.02	.01	-.01	.00	.00		.17	.0

^aNumber of school specialists per pupil.

Note: Dashes (--) indicate coefficients too small for computation, beta $\approx$.00; blanks indicate ratio not computable.

TABLE B.8

EFFECT OF SCHOOL ACTIVITIES ON ACHIEVEMENT, FIFTH GRADE WHITE STUDENTS

Part D: Funds Received for Materials and Plant

Activity ^a	Simple Correlation Coefficient r	Standardized Regression Coefficient beta	Beta-r	Total Variance Explained: Simple r ²	Unique Variance Explained: After Controls	Ratio: Unique Variance Total Variance	Unstandardized Regression Coefficient B	Number of Achievement Months Gained (B)/5.8
School furnishings	-.08	-.06	.02	.01	.00	.5	-2.88	-.5
Renovations	-.05	-.06	-.01	.00	.00		-3.24	-.6
Additional space	-.09	-.08	.01	.01	.01	.9	-5.88	-1.0
Extra text books	-.04	-.01	.03	.00	.00		-.72	-.1
Extra testing materials	.00	.07	.07	.00	.01	∞	3.77	.6
Human or community relations literature	.11	.02	-.09	.01	.00	.0	.74	.1

^aReceipt of materials and supplies coding: 3: both years; 2: this year only; 1: last year only; 0: neither year.

Note: Dashes (--) indicate coefficients too small for computation, beta = .00; blanks indicate ratio not computable.

TABLE B.9

EFFECT OF SCHOOL ACTIVITIES ON ACHIEVEMENT, TENTH GRADE BLACK STUDENTS

Part A: Principal's Report of Activity Existence

Activity ^a	Simple Correlation Coefficient r	Standardized Regression Coefficient beta	Beta-r	Total Variance Explained: Simple r^2	Unique Variance Explained: After Controls	Ratio: Unique Variance Total Variance	Unstandardized Regression Coefficient B	Number of Achievement Months Gained (B)/5.8
Guidance counselors	-.01	-.04	-.03	.00	.00		- 5.89	-1.0
Social worker or home visitor program	.09	.11	.02	.01	.01	1.4	10.29	1.8
Teacher aides	--	--	--	--	--	--	--	--
Teacher workshops or in-service training for teachers or teacher aides	.04	.02	-.02	.00	.00		2.37	.4
Remedial reading program	--	--	--	--	--	--	--	--
Vocational training courses	-.19	.06	.12	.03	.00	.1	6.20	1.1
Minority group history or culture courses	.13	.05	-.07	.02	.00	.2	5.17	.9
Special classrooms for under- achievers	.02	.03	.00	.00	.00		2.54	.4
Special classrooms for socially or emotionally maladjusted	-.14	-.10	.04	.02	.01	.5	-11.50	-2.0
Achievement grouping of classrooms	.07	-.02	-.10	.01	.00	.0	- 2.40	- .4
Major curriculum revisions	.04	-.01	-.06	.00	.00		- 1.25	- .2

^aYes/No coding of activity existence.

Note: Dashes (--) indicate coefficients too small for computation, beta $\approx$.00; blanks indicate ratio not computable.

Table B.9, Part A--Continued

Activity	Simple Correlation Coefficient r	Stan- dardized Regres- sion Coeffi- cient beta	Beta-r	Total Variance Ex- plained: Simple r^2	Unique Variance Ex- plained: After Controls	Ratio: Unique Variance	Unstan- dardized Regres- sion Coeffi- cient B	Number of Achieve- ment Months Gained (B)/5.8
						Total Variance		
Extracurricular activities geared toward minority students	--	--	--	--	--	--	--	--
Late bus for students who stay late for extracurricular activities	--	--	--	--	--	--	--	--
Program for tutoring low achieving students	.08	-.03	-.11	.01	.00	.1	-2.70	-.5
Special program to increase parent-teacher contact (e.g., conferences)	.12	.05	-.07	.01	.00	.2	4.24	.7
Program to improve intergroup relations among students . . .	.08	-.01	-.09	.01	.00	.0	-1.18	-.2
Program to improve intergroup relations among teachers . . .	.12	.07	-.05	.01	.00	.3	6.43	1.1
Biracial advisory committee of students	--	--	--	--	--	--	--	--
Equipment for students to use, such as reading machines, tape recorders, video tape machines, etc.	.10	.05	-.05	.01	.00	.2	6.65	1.1

TABLE B.9

EFFECT OF SCHOOL ACTIVITIES ON ACHIEVEMENT, TENTH GRADE BLACK STUDENTS

Part B: Principal's Report of Activity Duration

Activity ^a	Simple Correlation Coefficient r	Stan- dardized Regres- sion Coefficient beta	Beta-r	Total Variance Ex- plained: Simple r ²	Unique Variance Ex- plained: After Controls	Ratio: Unique Variance	Unstan- dardized Regres- sion Coefficient B	Number of Achieve- ment Months Gained (B)/5.8
						Total Variance		
Guidance counselors	.00	-.06	-.06	.00	.00		-2.93	-.5
Social worker or home visitor program	.10	.11	.01	.01	.01	1.1	3.57	.6
Teacher aides	.02	.01	-.01	.00	.00		.48	.1
Teacher workshops or in-service training for teachers or teacher aides	.03	-.01	-.04	.00	.00		-.33	-.1
Remedial reading program	.02	.02	.00	.00	.00		.54	.1
Vocational training courses . . .	-.01	-.05	-.04	.00	.00		-2.12	-.4
Minority group history or culture courses	--	--	--	--	--	--	--	--
Special classrooms for under- achievers	--	--	--	--	--	--	--	--
Special classrooms for socially or emotionally maladjusted . .	-.12	-.08	.04	.01	.01	.5	-3.66	-.6
Achievement grouping of classrooms.	.10	-.02	-.12	.01	.00	.0	-.82	-.2
Major curriculum revisions . . .	.07	-.02	-.09	.01	.00	.1	-.71	-.1

^aActivity coding: 3: two years; 2: this year only; 1: last year only; 0: neither year.

Note: Dashes (--) indicate coefficients too small for computation, beta $\approx$.00; blanks indicate ratio not computable.

Table B.9, Part B--Continued

Activity	Simple Correlation Coefficient r	Stan- dardized Regres- sion Coeffi- cient beta	Beta-r	Total Variance Ex- plained: Simple r^2	Unique Variance Ex- plained: After Controls	Ratio: Unique Variance Total Variance	Unstan- dardized Regres- sion Coeffi- cient B	Number of Achieve- ment Months Gained (B)/5.8
Extracurricular activities geared toward minority students	-.01	-.01	.00	.00	.00		- .29	-.1
Late bus for students who stay late for extracurricular activities	--	--	--	--	--	--	--	--
Program for tutoring low achieving students	.09	-.03	-.12	.01	-.00	.1	- .91	.2
Special program to increase parent-teacher contact (e.g., conferences)	-.11	.05	.16	.01	.00	.2	1.63	-.3
Program to improve intergroup relations among students . . .	--	--	--	--	--	--	--	--
Program to improve intergroup relations among teachers . . .	.13	.08	-.05	.02	.01	.3	2.53	.4
Biracial advisory committee of students	-.08	-.01	.07	.01	.00	.0	- .29	.1
Equipment for students to use, such as reading machines, tape recorders, video tape machines, etc.	-.12	.04	.16	.01	.00	.1	2.16	.4

TABLE B.9

EFFECT OF SCHOOL ACTIVITIES ON ACHIEVEMENT, TENTH GRADE BLACK STUDENTS

Part C: Auxiliary Personnel Per Pupil

Activity ^a	Simple Correlation Coefficient r	Stan- dardized Regres- sion Coeffi- cient beta	Beta-r	Total Variance Ex- plained: Simple r^2	Unique Variance Ex- plained: After Controls	Ratio: Unique Variance Total Variance	Unstan- dardized Regres- sion Coeffi- cient B	Number of Achieve- ment Months Gained (B)/5.8
Remedial reading teacher	-.06	.11	.16	.00	.01	2.8	3.86	.7
Remedial math teacher	.03	.10	.07	.00	.01	9.3	5.35	.9
Music of art teacher	-.01	-.02	-.01	.00	.00		-.64	-.1
Drama or speech teacher	.10	.04	-.07	.01	.00	.2	3.25	.6
Gym teacher or coach	.02	.10	.08	.00	.01	20.0	2.16	.4
Vocational education teacher	-.10	-.03	.07	.01	.00	.1	-.31	-.1
Counselor aides	.04	-.06	-.10	.00	.00		-3.86	-.7
Guidance counselor	.07	-.04	-.11	.00	.00		-1.80	-.3
Psychologist	-.01	-.02	-.02	.00	.00		-3.67	-.6
Social worker	-.07	-.04	.03	.01	.00	.3	-4.36	-.8
Speech therapist	-.09	-.01	.08	.01	.00	.0	-1.50	-.3
Teacher aides	-.13	-.03	.10	.02	.00	.1	-.36	-.1
Library aid or clerk	-.06	-.11	-.05	.00	.01	3.4	-6.45	-1.1
Librarian	--	--	--	--	--	--	--	--
Nurse	.01	.01	-.00	.00	.00		.25	.0
Audio-visual specialist	.03	.08	.05	.00	.01	7.6	13.04	2.2
Truant officer/home visitor	--	--	--	--	--	--	--	--
Community relations specialist	-.10	-.03	.07	.01	.00	.1	-1.18	-.2
Administrator (not listed above)	-.08	.01	.09	.01	.00	.0	.33	.1

^aNumber of school specialists per pupil.

Note: Dashes (--) indicate coefficients too small for computation, beta $\approx$.00; blanks indicate ratio not computable.

TABLE B.9

EFFECT OF SCHOOL ACTIVITIES ON ACHIEVEMENT, TENTH GRADE BLACK STUDENTS

Part D: Funds Received for Materials and Plant

Activity ^a	Simple Correlation Coefficient r	Standardized Regression Coefficient beta	Beta-r	Total Variance Explained: Simple r ²	Unique Variance Explained: After Controls	Ratio: Unique Variance Total Variance	Unstandardized Regression Coefficient B	Number of Achievement Months Gained (B)/5.8
School furnishings	.06	.04	-.02	.00	.00		1.45	.2
Renovations	.13	.05	-.08	.02	.00	.1	1.63	.3
Additional space	.14	.09	-.05	.02	.01	.4	4.58	.8
Extra text books	-.00	-.05	-.05	.00	.00		-1.66	-.3
Extra testing materials	--	--	--	--	--	--	--	--
Human or community relations literature	--	--	--	--	--	--	--	--

^aReceipt of materials and supplies coding: 3: both years; 2: this year only; 1: last year only; 0: neither year.

Note: Dashes (--) indicate coefficients too small for computation, beta $\approx$.00; blanks indicate ratio not computable.

TABLE B.10

EFFECT OF SCHOOL ACTIVITIES ON ACHIEVEMENT, TENTH GRADE WHITE STUDENTS

Part A: Principal's Report of Activity Existence

Activity ^a	Simple Correlation Coefficient r	Stan- dardized Regres- sion Coeffi- cient beta	Beta-r	Total Variance Ex- plained: Simple r^2	Unique Variance Ex- plained: After Controls	Ratio: Unique Variance Total Variance	Unstan- dardized Regres- sion Coeffi- cient B	Number of Achieve- ment Months Gained (B)/5.8
Guidance counselors	.05	.03	-.03	.00	.00		5.01	.9
Social worker or home visitor program	.04	.01	-.03	.00	.00		1.55	.3
Teacher aides	-.01	.04	.06	.00	.00		5.07	.9
Teacher workshops or in-service training for teachers or teacher aides	.00	.06	.05	.00	.00		8.74	1.5
Remedial reading program	-.06	-.02	.04	.00	.00		-2.24	-.4
Vocational training courses . . .	--	--	--	--	--	--	--	--
Minority group history or culture courses	--	--	--	--	--	--	--	--
Special classrooms for under- achievers	--	--	--	--	--	--	--	--
Special classrooms for socially or emotionally maladjusted	-.10	-.03	-.07	.01	.00	.1	-4.76	-.8
Achievement grouping of classrooms	.08	.01	-.07	.01	.00	.0	1.53	.3
Major curriculum revisions . . .	.12	.05	-.07	.01	.00	.2	6.80	1.2

^aYes/No coding of activity existence.Note: Dashes (--) indicate coefficients too small for computation, $\beta \approx .00$; blanks indicate ratio not computable.

Table B.10, Part B--Continued

Activity	Simple Correlation Coefficient r	Stan- dardized Regres- sion Coefficient beta	Beta-r	Total Variance Ex- plained: Simple r^2	Unique Variance Ex- plained: After Controls	Ratio: Unique Variance Total Variance	Unstan- dardized Regres- sion Coefficient B	Number of Achieve- ment Months Gained (B)/5.8
Extracurricular activities geared toward minority students	.11	.05	-.06	.01	.00	.2	2.32	.4
Late bus for students who stay late for extracurricular activities	-.02	-.03	-.01	.00	.00		-2.31	-.4
Program for tutoring low achieving students	.15	.02	-.13	.02	.00	.0	.80	.2
Special program to increase parent-teacher contact (e.g., conferences)	.08	.04	-.04	.01	.00	.2	1.64	.3
Program to improve intergroup relations among students . .	.03	-.05	.02	.00	.00		-2.31	-.4
Program to improve intergroup relations among teachers . . .	.14	.05	-.09	.02	.00	.1	2.21	.4
Biracial advisory committee of students	.02	.03	.01	.00	.00		1.62	.3
Equipment for students to use, such as reading machines, tape recorders, video tape machines, etc.	.04	.03	-.01	.00	.00		2.08	.4

TABLE B.10

EFFECT OF SCHOOL ACTIVITIES ON ACHIEVEMENT, TENTH GRADE WHITE STUDENTS

Part C: Auxiliary Personnel Per Pupil

Activity ^a	Simple Correlation Coefficient r	Stan- dardized Regres- sion Coeffi- cient beta	Beta-r	Total Variance Ex- plained: Simple r ²	Unique Variance Ex- plained: After Controls	Ratio: Unique Variance Total Variance	Unstan- dardized Regres- sion Coeffi- cient B	Number of Achieve- ment Months Gained (B)/5.8
Remedial reading teacher	-.22	-.03	.19	.05	.00	.0	1.24	-.2
Remedial math teacher	-.05	.04	.10	.00	.00		2.69	.5
Music or art teacher	.15	.04	-.12	.02	.00	.1	1.62	.3
Drama or speech teacher	.12	.02	.10	.01	.00	.0	1.89	.3
Gym teacher or coach	.06	.06	.00	.00	.00		1.56	.3
Vocational education teacher	-.20	.04	.23	.04	.00	.0	-.45	-.1
Counselor aides	.13	.07	.04	.02	.01	.3	6.04	1.0
Guidance counselor	.12	.03	.09	.02	.00	.1	1.63	.3
Psychologist	--	--	--	--	--	--	--	--
Social worker	-.02	.02	.04	.00	.00		3.17	.5
Speech therapist	-.05	-.00	.04	.00	.00		-1.32	-.2
Teacher aides	-.09	.06	.15	.01	.00	.4	.98	.2
Library aide or clerk	-.01	-.05	-.04	.00	.00		-4.35	-.8
Librarian	-.10	.03	.13	.01	.00	.1	1.75	.3
Nurse	--	--	--	--	--	--	--	--
Audio-visual specialist	.17	.12	-.04	.03	.02	.5	25.19	4.3
Truant officer/home visitor	-.01	-.01	-.00	.00	.00		-1.40	-.2
Community relations specialist	--	--	--	--	--	--	--	--
Administrator (not listed above)	.04	.05	.01	.00	.00		2.41	.4

^a Number of school specialists per pupil.

Note: Dashes (--) indicate coefficients too small for computation, beta $\approx$.00; blanks indicate ratio not computable.

TABLE B.10

EFFECT OF SCHOOL ACTIVITIES ON ACHIEVEMENT, TENTH GRADE WHITE STUDENTS

Part D: Funds Received for Materials and Plant

Activity ^a	Simple Correlation Coefficient r	Stan- dardized Regres- sion Coeffi- cient beta	Beta-r	Total Variance Ex- plained: Simple r^2	Unique Variance Ex- plained: After Controls	Ratio: Unique Variance Total Variance	Unstan- dardized Regres- sion Coeffi- cient B	Number of Achieve- ment Months Gained (B)/5.8
School furnishings	0.03	0.05		0.00	0.00		2.44	.4
Renovations	0.14	0.07		0.02	0.01	.3	3.49	.6
Additional space	0.09	0.07		0.01	0.01	.7	3.75	.6
Extra text books	--	--	--	--	--	--	--	--
Extra testing materials . . .	-0.00	0.02		0.00	0.00		0.97	.2
Human or community relations literature	0.03	-0.03		0.00	0.00		-1.38	-.2

^aReceipt of materials and supplies coding: 3: both years; 2: this year only; 1: last year only; 0: neither year.

Note: Dashes (--) indicate coefficients too small for computation, beta $\approx$.00; blanks indicate ratio not computable.

Table B.7 shows the results for black students in the fifth grade. In this table there are four variables that exceed the criteria. They are the number of vocational education teachers and the number of nurses per 1,000 pupils, and the purchase of textbooks, and of testing materials in the past two years. These results are interesting, although not necessarily what one would expect from a reading of educational theory. In Parts A and B, none of the effects meet our criteria. The largest result in Part B is an unstandardized regression coefficient of 4.21, indicating a gain of .7 months in achievement, associated with the use of audio-visual equipment. There is no corresponding effect in Part A for this variable, probably because of the badly skewed marginals: 95 per cent of the schools claim to have such equipment. In an earlier analysis, a rough coding of the size of the program, taken from the principal's questionnaire, was used, and schools that had a "satisfactory" quantity of instructional equipment showed achievement gains of 7 points (1.2 months) over those with a less than satisfactory amount. This coding scheme was not used because this is the only one of the 70 cases where the coding made a difference, and we felt that more objective coding was generally preferable to subjective coding by size. We do, however, think that this one result is important.

A sixth result, in Part C of Table B.7, is worth citing. While the number of remedial reading teachers per 1,000 students shows a very small positive association (.01) with achievement, this is in contrast to a large negative zero-order association (-.15). Thus, the positive gain of beta over r is +.16, by far the largest in Table B.7. Given our suspicion that our control equation for fifth grade blacks is poor, this is an intriguing result, suggesting that remedial reading teachers may be making a difference.

When we turn to white students in the fifth grade we find only one variable that shows an effect on achievement--whether or not the school received money for testing materials. In this case, the achievement test score is improved by 3.77 points for each year the school received the materials. Four variables have $B = .06$, just below our criterion: number of remedial math teachers (which, like fifth grade black effects of remedial reading, shows a very large beta - r), guidance counselors in Table B.8, Part C, and a counseling program in Part A, and number of teacher's aides.

guidance counseling and intergroup relations activities for teachers for more than one year has a marginal impact on achievement.

As was the case with white students in the fifth grade, it is not possible to simply and precisely summarize the effects of this variety of activities on achievement. However, we do again have the same general pattern, with physical resources and audio-visual equipment being the best predictors of change, along with non-instructional guidance and counseling.

The consistency of the results is reflected in the summary in Table B.11. This table shows the results that meet our criterion, plus a few others that fall only slightly below. When we examine the 19 activities, we find that 12 of them appear more than once, and two appear three times. Of the 10 that appear twice, four show up for both races in one grade, four for both grades of one race, and only two show a match across opposite grade and race, the least desirable kind of consistency. The consistency of the results encouraged us to embark on the analysis of specific activities in Chapter 3.

Grouping of Activities into General "Strategies"

In another effort to ascertain whether or not these activities had an impact on achievement we analyzed the degree to which there were distinct strategies combining a few or several activities and assessed whether or not programs in combination had an impact on achievement. To do this, we conducted a two-stage factor analysis of the variables at both the fifth and tenth grade levels. The first stage of the factor analysis included all of the activity variables that were used in Tables B.7 through B.10. At the second stage, only those variables that had a strong positive loading on one of the four factors were included. This second stage provides us with somewhat "purer" factors, thus more accurately reflecting distinct strategies, if such exist. It eliminates random "noise."

TABLE B.11
POINTS OF CONSISTENCY IN EFFECTIVE ACTIVITIES
IN TABLES B.7 THROUGH B.10

Student Group	Activity
Both tenth grades, one fifth grade	Gym teachers ^a
Both tenth grades	Audio-visual, space, teacher relations
Both fifth grades	Testing
Both fifth grades, one tenth grade	Teacher's aides ^a
Both black groups	Vocational education, ^b remedial reading ^b
Both white groups	Guidance counseling, counseling aides ^b
Two groups, opposite grade and race	Remedial math, ^b teacher in-service education ^a
One group only	Social workers, renovations, human rela- tions literature, ^b nurses, textbooks, achievement grouping, ^b instructional equipment ^b

^aActivity below criterion for two groups.

^bActivity below criterion for one group.

The results of the factor analysis are not totally reflective of clear and distinct strategies, but they do make some sense as different orientations. The factor analysis is given in Appendix F.

At the fifth grade level, the four factors can be described as follows:

1. Programs and personnel aimed at non-instructional auxiliary services
2. Programs related to intergroup relations and curricular reorganization
3. Basic instructional services
4. Social work and guidance.

For the tenth grade, the four factors are somewhat different:

1. Programs involving intergroup relations and teacher training, teacher's aides
2. Basic instructional services
3. Intergroup relations programs and hardware
4. Guidance and counseling.

The next question is, of course, whether or not these different strategies or orientations toward compensatory education actually produce different achievement results. The answer, as shown in Tables B.12 through B.15, is basically no.

For black students in the fifth grade, Table B.12 shows that none of the variables constructed from these factor scores even comes close to meeting the criteria that we set down at the beginning of this section. The highest standardized regression coefficient is .04 for basic instructional services. For white students in the fifth grade (Table B.13), the same is true. None approach showing a significant effect, although again, basic instructional services comes closest.

Turning to the tenth grade, we again find that no variable approaches significance for either black students or white students. For black students (Table B.14), basic instructional services again shows

TABLE B.12

EFFECT OF SCHOOL ACTIVITIES ON ACHIEVEMENT,
USING A FACTOR-ANALYTIC GROUPING OF
ACTIVITIES INTO STRATEGIES

Fifth Grade Black Students

Factor	Simple Correlation Coefficient r	Standardized Regression Coefficient β	Beta- r	Total Variance Explained: Simple r^2	Unique Variance Explained: After Controls	Ratio: Unique Variance Total Variance
Group 1: Auxiliary Personnel, Non-Instructional	.02	.02	.00	.00	.00	
Group 2: Intergroup Relations and Curricular Reorganization	.02	.02	-.01	.00	.00	
Group 3: Basic Instructional Services	.02	.04	.02	.00	.00	
Group 4: Social Work and Guidance	.02	.02	.01	.00	.00	

Note: Blanks indicate ratio not computable.

TABLE B.13

EFFECT OF SCHOOL ACTIVITIES ON ACHIEVEMENT,
 USING A FACTOR-ANALYTIC GROUPING OF
 ACTIVITIES INTO STRATEGIES

Fifth Grade White Students.

Factor	Simple Corre- lation Coeffi- cient r	Stan- dardized Regres- sion Coeffi- cient beta	Beta-r	Total Variance Ex- plained: Simple r^2	Unique Variance Ex- plained: After Controls	Ratio: Unique Variance Total Variance
Group 1: Auxiliary Personnel, Non-Instructional	.05	.02	-.03	.00	.00	
Group 2: Intergroup Relations and Curricular Reorganization	.06	-.05		.00	.00	
Group 3: Basic Instructional Services	-.15	.03	.18	.02	.00	
Group 4: Social Work and Guidance	-.01	-.03	-.01	.00	.00	

Note: Blanks indicate ratio not computable.

TABLE B.14

EFFECT OF SCHOOL ACTIVITIES ON ACHIEVEMENT,
USING A FACTOR-ANALYTIC GROUPING OF
ACTIVITIES INTO STRATEGIES

Tenth Grade Black Students

Factor	Simple Correlation Coefficient r	Standardized Regression Coefficient beta	Beta-r	Total Variance Explained: Simple r^2	Unique Variance Explained: After Controls	Ratio: Unique Variance <u>Total Variance</u>
Group 1: Intergroup Relations, Teacher Training, Teacher's Aides	.09	.02	-.06	.01	.00	
Group 2: Basic Instructional Services	-.11	.04	.15	.01	.00	
Group 3: Intergroup Relations, Materials and Physical Plant	.10	.04	-.06	.01	.00	
Group 4: Guidance and Counseling	-.02	-.04	-.02	.00	.00	

Note: Blanks indicate ratio not computable.

TABLE B.15

EFFECT OF SCHOOL ACTIVITIES ON ACHIEVEMENT,
USING A FACTOR-ANALYTIC GROUPING OF
ACTIVITIES INTO STRATEGIES

Tenth Grade White Students

Factor	Simple Correlation Coefficient r	Standardized Regression Coefficient β	Beta- r	Total Variance Explained: Simple r^2	Unique Variance Explained: After Controls	Ratio: Unique Variance Total Variance
Group 1: Intergroup Relations, Teacher's Aides	.07	.05	-.02	.005	.00	.5
Group 2: Basic Instructional Services	-.17	.02	.19	.029	.00	
Group 3: Intergroup Relations, Hardware	.11	.04	-.07	.012	.00	.2
Group 4: Guidance and Social Work	.10	.03	-.07	.009	.00	

Note: Blanks indicate ratio not computable.

the strongest suggestion of an effect. However, for white students in the tenth grade (Table B.15), the consistency of this suggestion is broken--basic instructional services shows the weakest effect of all four strategies. Two factors--"intergroup relations with aides" and "intergroup relations with hardware"--show weak effects for white students in the tenth grade, with larger betas than any of the other three tables.

These tables do offer some suggestion that a more detailed and refined effort at analysis of differing educational strategies--including characteristics of the schools and types of activities--could be a fruitful path for further analysis of these data. The failure of the factor analysis, coupled with some of the consistencies we saw in Tables B.7 through B.10, suggests that there may indeed be strategies that "work" in raising achievement, but these strategies are probably not the strategies that various school administrators are now advocating.

In Pursuit of Spurious and Intervening Variables and Interaction Effects

At this point in the analysis, we attempted to find an explanation for the effect of programs on achievement. Several of these efforts proved to be fruitless. It is not very useful to review these blind alleys in detail, but certainly we should outline them in order to clarify how we did arrive at some explanations as to why these programs, or some of these programs, affected achievement. We pursued the notion that the duration of a program was very important; that very few programs could be expected to have an effect in a single year, but might over the duration of two years. Thus, we combined the principal's report on the adequacy of the program with the variable measuring the duration of the program. This was an additional effort to see if there was interaction effect that disguised actual impacts of programs, e.g., two year programs reported to be funded at an inadequate level, while adequately funded programs had only been in existence for one year. It turned out that no such interaction existed and the interaction of duration and adequacy had little impact on our

important at the fifth grade level are whether or not teachers find grouping of students by achievement level a helpful procedure and whether or not teachers use classroom discussion in teaching.

There is clearly a suggestion at this point in the analysis that the combination of impersonal teaching resources and individual personal counseling as effective programs is related both to the interracial atmosphere of the school and to permitting teachers to escape from the lecture and chalk-board style of teaching. However, an analysis of that would go beyond the immediate purpose of this analysis, and will not be pursued.

APPENDIX C

MULTIPLE REGRESSION ANALYSIS OF ATTITUDES TOWARD INTEGRATION

Selection of Control Equations

As a first step, the control variables for the analysis were located as follows:

1. All the variables in the study were correlated with attitude toward integration for each of the grade/race/location subgroups.

2. Those variables with significant correlations ($p < 0.05$) were run in regression equations. The variables were divided into three groups:

- (a) Those logically prior to school programs (such as community or student characteristics)

- (b) Those not logically prior to school programs, but logically prior to student racial attitudes (such as principal attitudes)

- (c) Those not prior to student attitudes (such as teacher reports of student behavior). These were discarded.

3. All variables in group (a) were combined in multiple regression equations; and those that contributed less than 0.5 per cent additional variance were dropped. The remainder became the control variables for the analysis of program impact. Then variables in group (b) were added, again discarding those which added less than 0.5 per cent to the variance explained.

Thus, two equations were generated for each student subgroup. These equations are given in Tables C.1 through C.8, which show first, the correlations; second, the betas when only group (a) variables (i.e., the control variables) were included; third, betas when both (a) and (b) variables were entered; and last, the variance added when the variable was entered in the order given in the table.

Analysis of School Programs

The relationships of attitudes toward integration with 43 school program variables were analyzed by introducing each program variable into the control variable equation. The per cent of variance explained was computed by entering the program variable after all the control variables were in the equation. The results are given in Tables C.9 through C.16. These tables show:

Column 1: The zero-order correlation of the program variable with the integration attitude scale

Column 2: The standardized regression coefficient when this program variable is combined with the control variable in a regression equation

Column 3: The difference between Columns 1 and 2, indicating the extent to which the control variables have changed the apparent impact of the program variable

Column 4: The correlation coefficient squared

Column 5: The explained variance uniquely added when the program variable is entered after the controls in the regression equation

Column 6: The ratio of Column 4 to Column 5, indicating again the impact of the control variables in reducing (if the ratio is under 1.0) or increasing (if it is over 1.0) the apparent effect of the program variable

TABLE C.1

CORRELATIONS, REGRESSION COEFFICIENTS, AND ADDITIONAL VARIANCE CONTRIBUTED BY PREDICTORS OF
FIFTH GRADE BLACK RURAL STUDENT RACIAL ATTITUDES, WHEN ENTERED IN THE ORDER LISTED

Variable Name	Predictor	Zero-Order Correlations	Standardized Regression Coefficients ^a		R ² Contributed
			Beta'	Beta	
<u>The Basic Equation:</u>					
PWHITE ^b	Per cent white in student body	-.03			.03
STATE	Border state (low category: Deep South)	.15	.02	-.00	
SES99W	White students' socioeconomic status	.02	.09	.09	
<u>Community-Demographic Variables:</u>					
GRADEW	Mean earliest grade white students integrated	-.27	-.24*	-.22	.05
BLWKHD	Early assignment of blacks to white school	.20	.13	.14	.03
BNEARD	Number of blacks reassigned for desegregation	.16	.29*	.27	.03
BUSREL	Little protest about school busing	.02	.21*	.21	.02
BICYCB	Per cent black students own bicycles	.15	.16*	.12	.02
RCHNGP	Racial composition of school did not change this year	-.15	-.12	-.16	.01
FOSTAB	Per cent black students who do not get food stamps	.00	-.10	-.17	.01
GRADEB	Mean earliest grade black students integrated	-.24	-.10	-.11	.01
NEWDEB	Per cent black students' families get newspaper regularly	.07	-.06	-.11	.00
<u>Teacher-Attitude Variables:</u>					
TIPNOT	No racial tipping point for school quality	.15		.17	.05
ETALKT	Amount of classroom discussion	.19		.17	.02
HIPDST	Principal likes integrated schools	.19		.05	.02
TWO(T)	Teachers like integrated schools	.16		.16	.00
Mean Achievement Test Score (Black Students)		.17		.13	.01
Black Students' Socioeconomic Status		.06		.11	.00
Low Level of Racial Tension		.04		.09	.00
Variance Explained			21%	32%	

^aBeta' is the coefficient obtained from the regression equation which includes only those variables which are used as controls in Chapter 3.

^bBetas omitted for student racial composition (PWHITP) which was entered with a quadratic term.

*Betas are significant at .025 level.

TABLE C.2

CORRELATIONS, REGRESSION COEFFICIENTS, AND ADDITIONAL VARIANCE CONTRIBUTED BY PREDICTORS OF
FIFTH GRADE BLACK URBAN STUDENT RACIAL ATTITUDES, WHEN ENTERED IN THE ORDER LISTED

Variable Name	Predictor	Zero-Order Correlations	Standardized Regression Coefficients ^a		R ² Contributed
			Beta'	Beta	
<u>The Basic Equation:</u>					
PWHITP ^b	Per cent white in student body	.04			
STATE	Border state (low category: Deep South)	.02	.04	-.03	.03
SES99W	White students' socioeconomic status	-.01	.02	.07	
SES99B	Black students' socioeconomic status	-.12	-.19*	-.25	
<u>Community-Demographic Variables:</u>					
GRADEB	Mean earliest grade black students integrated	-.12	-.15*	-.16	.02
WNEARD	Number of whites reassigned for desegregation	.08	.27*	.28	.03
GRADEW	Mean earliest grade white students integrated	-.11	-.13	-.07	.02
PRIORP	School was black before desegregation	.08	.07	-.04	.02
BLKWHd	Early assignment of blacks to white schools	-.05	-.13	-.14	.01
PRSEXP	Female principal	-.10	-.09	-.09	.01
CLSPSB	Per cent black students attending closest public school	.13	.11	.09	.01
BLACKL	Black community displeased with local schools	-.01	-.08	-.07	.00
<u>Principal-Teacher Attitude Variables:</u>					
TWO(T)	Teachers like integrated schools	.10		.15	.02
MEET9P	Number of school-community meetings about desegregation	.11		.11	.01
Mean Achievement Test Score (Black Students)		.19		.16	.02
Low Level of Racial Tension		.14		.11	.01
Variance Explained			14%	20%	

^aBeta' is the coefficient obtained from the regression equation which includes only those variables which are used as controls in Chapter 3.

^bBetas omitted for student racial composition (PWHITP) which was entered with a quadratic term.

*Betas are significant at .025 level.

TABLE C.3

CORRELATIONS, REGRESSION COEFFICIENTS, AND ADDITIONAL VARIANCE CONTRIBUTED BY PREDICTORS OF
FIFTH GRADE WHITE RURAL STUDENT RACIAL ATTITUDES, WHEN ENTERED IN THE ORDER LISTED

Variable Name	Predictor	Zero- Order Correlations	Standardized Regression Coefficients ^a		R ² Contributed
			Beta'	Beta	
<u>The Basic Equation:</u>					
PWHITP ^b	Per cent white in student body	-.26			
STATE	Border state (low category: Deep South)	.33	.23*	.09	.25
SES99B	Black students' socioeconomic status	-.10	-.07	-.08	
<u>Community-Demographic Variables:</u>					
GRADEW	Mean earliest grade white students integrated	-.48	-.35*	-.32	.11
PRACEP	Black principal	.30	.28*	.06	.04
RCHNGP	Racial composition of school did not change this year	-.23	-.19*	-.18	.04
WOTRAP	Per cent of white students who transferred out this year	.28	.15*	.10	.03
TOPUPP	Number of pupils in the school	-.11	-.18*	-.19	.02
DISADP	Per cent student body disadvantaged (gov't definition)	.08	-.25*	-.24	.02
BLSUPL	Black community opposed desegregation	-.18	-.14*	-.12	.01
PURBAN	Per cent urban in county/city (1960)	.11	.10	.07	.01
FOSTAW	Per cent white students who don't get food stamps	-.18	-.11	-.12	.01
TRANSW	Per cent white students who ride school bus	-.26	-.08	-.06	.01
PNONWH	Per cent nonwhite in county/city (1960)	.04		-.16	.00
NEWDEW	Per cent white students' families get newspaper regularly	.18		.08	.00
<u>Principal-Teacher Attitude Variables:</u>					
RATT9P	Principal has relatively liberal racial attitudes	.36		.18	.03
WCONTT	Much contact between teachers and white students	.02		.14	.01
(SES99W)	White students' socioeconomic status	-.10		-.20	.00
LNHIST	Teacher studied minority group history	.35		.09	.01
HIPDST	Principal likes integrated schools	.33		.08	.00
TWO(T)	Teachers like integrated schools	.05		-.05	.00
Mean Achievement Test Score (White Students)		.17		.18	.01
Variance Explained			54%	62%	

^aBeta' is the coefficient obtained from the regression equation which includes only those variables which are used as controls in Chapter 3.

^bBetas omitted for student racial composition (PWHITP) which was entered with a quadratic term.

*Betas are significant at .025 level.

TABLE C.4

CORRELATIONS, REGRESSION COEFFICIENTS, AND ADDITIONAL VARIANCE CONTRIBUTED BY PREDICTORS OF
FIFTH GRADE WHITE URBAN STUDENT RACIAL ATTITUDES, WHEN ENTERED IN THE ORDER LISTED

Variable Name	Predictor	Zero- Order Correlations	Standardized Regression Coefficients ^a		R ² Contributed
			Beta'	Beta	
<u>The Basic Equation:</u>					
PWHITP ^b	Per cent white in student body	.13			
STATE	Border state (low category: Deep South)	.10	.02	.02	.05
SES99B	Black students' socioeconomic status	.12	.06	-.02	
<u>Community-Demographic Variables:</u>					
FOSTAW	Per cent white students who don't get food stamps	.37	.30*	.33	.10
GRADEW	Mean earliest grade white students integrated	-.20	-.25*	-.21	.05
BICOML	Ineffective (or no) biracial committee on school desegregation	-.15	-.28*	-.25	.05
CATH9P	Per cent Catholics in student body	.23	.08	.10	.03
BICYCW	Per cent white students own bicycle	.27	.27*	.26	.02
INTYRD	Early desegregation of white schools	.15	.22*	.04	.03
SHABYO	School building is in good physical condition	.05		-.24	.01
GRADEB	Mean earliest grade black students integrated	-.20		-.12	.01
SIBLSW	Mean number siblings of white students	-.28		-.14	.00
SES99W	White students' socioeconomic status	.24		-.21	.01
KINDGW	Per cent white students who attended kindergarten	.21		.06	.00
<u>Teacher Attitude Variables:</u>					
IPROJT	School has intergroup relations projects	.22		.20	.04
TINTEO	Little informal interracial contact among teachers	-.18		-.21	.03
MCONTT	Much contact between teachers and minority students	.23		.15	.02
RDISCT	Many classroom discussions about race	.16		.04	.00
TWO(T)	Teachers like integrated schools	.17		-.06	.00
Mean Achievement Test Score (White Students)		.22		.14	.01
Low Level of Racial Tension		.02		-.04	.00
Variance Explained			32%	46%	

^aBeta' is the coefficient obtained from the regression equation which includes only those variables which are used as controls in Chapter 3.

^bBetas omitted for student racial composition (PWHITP) which was entered with a quadratic term.

*Betas are significant at .025 level

TABLE C.5

CORRELATIONS, REGRESSION COEFFICIENTS, AND ADDITIONAL VARIANCE CONTRIBUTED BY PREDICTORS OF
TENTH GRADE BLACK RURAL STUDENT RACIAL ATTITUDES, WHEN ENTERED IN THE ORDER LISTED

Variable Name	Predictor	Zero- Order Correlations	Standardized Regression Coefficients ^a		R ² Contributed
			Beta'	Beta	
<u>The Basic Equation:</u>					
PWHITP ^b	Per cent white in student body	-.13			.03
STATE	Border state (low category: Deep South)	.01	.13	-.01	
SES99W	White students' socioeconomic status	.03	.06	-.01	
<u>Community-Demographic Variables:</u>					
PPDOLD	Dollar expenditures per pupil (district average)	-.15	-.19	-.19	.03
WPROTD	No white protests this year	-.13	-.16	-.16	.02
RENEWB	Per cent black students' families get newspaper regularly	-.04	-.03	-.10	.00
PRAGEP	Principal's age	.08	.12	.16	.00
LONG9P	Principal's tenure at this school	-.16	-.22*	-.21	.04
<u>Teacher Variables:</u>					
REPMGT	Principal counsels teachers unfair to blacks	-.16		-.11	.02
EXTACT	Amount of integration of extracurricular activities	-.06		-.05	.00
TWO(T)	Teachers like integrated schools	.26		.18	.06
THREE(T)	Good informal interracial contact among students	.16		.22	.03
Mean Achievement Test Score (Black Students)		.20		.24	.04
Officers of Parent-Teacher Organization Are All One Race		.22		.20	.03
Variance Explained			11%	30%	

^aBeta' is the coefficient obtained from the regression equation which includes only those variables which are used as controls in Chapter 3.

^bBetas omitted for student racial composition (PWHITP) which was entered with a quadratic term.

*Betas are significant at .025 level.

TABLE C.6

CORRELATIONS, REGRESSION COEFFICIENTS, AND ADDITIONAL VARIANCE CONTRIBUTED BY PREDICTORS OF
TENTH GRADE BLACK URBAN STUDENT RACIAL ATTITUDES, WHEN ENTERED IN THE ORDER LISTED

Variable Name	Predictor	Zero- Order Correlations	Standardized Regression Coefficients ^a		R ² Contributed
			Beta'	Beta	
<u>The Basic Equation:</u>					
PWHITP ^b	Per cent white in student body	-.10			.02
STATE	Border state (low category: Deep South)	-.08	-.23	-.15	
SES99W	White students' socioeconomic status	-.03	.12	-.02	
<u>Community-Demographic Variables:</u>					
CRACTL	Much civil rights activity in community	.41	.44*	.38	.20
ONHOMB	Per cent of black students whose parents own their home	-.28	-.28*	-.30	.04
TOPUPP	Number of pupils in the school	.10	.24*	.21	.05
<u>Teacher-Principal Attitude Variables:</u>					
HISDST	Superintendent likes desegregation	-.28		-.30	.06
XTPART	More participation in extracurricular activities	.21		.27	.06
AGEGRT	Per cent of teachers under 36 years old	.27		.17	.03
REPWHT	Principal counsels teachers unfair to whites	-.13		-.18	.02
WHEADP	White students better off in integrated schools	.15		.17	.03
TWO(T)	Teachers like integrated schools	.06		-.07	.00
Mean Achievement Test Score (Black Students)		.19		.21	.03
Low Level of Racial Tension		.19		.04	.00
Variance Explained			31%	54%	

^aBeta' is the coefficient obtained from the regression equation which includes only those variables which are used as controls in Chapter 3.

^bBetas omitted for student racial composition (PWHITP) which was entered with a quadratic term.

*Betas are significant at .025 level.

TABLE C.7

CORRELATIONS, REGRESSION COEFFICIENTS, AND ADDITIONAL VARIANCE CONTRIBUTED BY PREDICTORS OF
TENTH GRADE WHITE RURAL STUDENT RACIAL ATTITUDES, WHEN ENTERED IN THE ORDER LISTED

Variable Name	Predictor	Zero-Order Correlations	Standardized Regression Coefficients ^a		R ² Contributed
			Beta'	Beta	
<u>The Basic Equation:</u>					
PWHITP ^b	Per cent white in student body	.20	.		
STATE	Border state (low category: Deep South)	.22	.11	.13	.14
SES99B	Black students' socioeconomic status	.04	-.07	-.02	
<u>Community-Demographic Variables:</u>					
PRIORP	School was black before desegregation	.26	.42*	.35	.12
NOINTW	Per cent no pre-high school integration	-.10	-.19*	-.14	.05
ALINTW	Per cent all education in integrated schools	.18	.16	.06	.01
PURBAN	Per cent urban in county/city (1960)	.12	.13	.14	.01
BLACKL	Black community displeased with local schools	-.04	-.07	-.09	.00
MOED1W	Per cent white mothers graduated from high school	.02	.19*	.13	.00
SES99W	White students' socioeconomic status	-.03	-.19*	-.14	.01
EXPERT	Per cent teachers never taught opposite race	.04		.07	.00
<u>Principal-Teacher Attitude Variables:</u>					
MABILT	Minority students' ability level	-.18		.23	.04
PREJUT	Teachers have relatively liberal racial attitudes	.22		.15	.02
LNHIST	Teacher studied minority group history	.10		.13	.01
ELITEP	Integrated student elite	.06		.12	.01
TWO(T)	Teachers like integrated schools	.19		.03	.00
Low Level of Racial Tension		.11		.16	.02
Mean Achievement Test Score (White Students)		.12		.06	.00
Variance Explained			35%	46%	

^aBeta' is the coefficient obtained from the regression equation which includes only those variables which are used as controls in Chapter 3.

^bBetas omitted for student racial composition (PWHITP) which was entered with a quadratic term.

*Betas are significant at .025 level.

TABLE C.8

CORRELATIONS, REGRESSION COEFFICIENTS, AND ADDITIONAL VARIANCE CONTRIBUTED BY PREDICTORS OF
TENTH GRADE WHITE URBAN STUDENT RACIAL ATTITUDES, WHEN ENTERED IN THE ORDER LISTED

Variable Name	Predictor	Zero- Order Correlations	Standardized Regression Coefficients ^a		R ² Contributed
			Beta'	Beta	
<u>The Basic Equation:</u>					
PWHITP ^b	Per cent white in student body	-.15			.26
STATE	Border state (low category: Deep South)	.28	-.03	.07	
SES99W	White students' socioeconomic status	.12	.29*	.13	
SES99B	Black students' socioeconomic status	.06	-.05	-.04	
<u>Community-Demographic Variables:</u>					
YEARIW	Per cent whites also students here last year	-.30	-.20*	-.18	.07
WHOFFP	Per cent white of school's faculty and staff	.16	.31*	.12	.05
BLACKL	Black community displeased with local schools	.33	.39*	.43	.06
INTYRD	Early desegregation of white schools	.08	.27*	.19	.05
PRIORP	School was black before desegregation	.30	.18	.42	.02
CRAC TL	Much civil rights activity in community	.32		.13	.01
RPTA9P	Officers of PTA are integrated	-.06		.40	.10
<u>Principal-Teacher Attitude Variables:</u>					
ELITEP	Integrated student elite	-.04		.20	.03
BTQUAP	Black teachers in this school are high quality	.25		.09	.02
PQUALT	Principal quality	.20		.19	.01
TWO(T)	Teachers like integrated schools	.15		-.09	.001
Mean Achievement Test Score (White Students)		.30		.28	.04
ONE(T)	Low level of racial tension	.39		.22	.03
Variance Explained			51%	77%	

^aBeta' is the coefficient obtained from the regression equation which includes only those variables which are used as controls in Chapter 3.

^bBetas omitted for student racial composition (PWHITP) which was entered with a quadratic term.

*Betas are significant at .025 level.

TABLE C.9

FIFTH GRADE BLACK RURAL PROGRAM EFFECTS^a ON STUDENT RACIAL ATTITUDES
AFTER TABLE C.1 BETA' CONTROLS HAVE BEEN ENTERED

Variable	Simple Corre- lation Coeffi- cient	Stan- dardized Regres- sion Coeffi- cient Beta	B - R	Simple R ²	Unique R ² After Controls	Unique R ² After Controls/ Simple R ²
Guidance counseling .	-.0691	-.0466	.0225	.0047	.0017	.3617
Social worker or home visitor program . .	.1002	.0831	-.0171	.0104	.0061	.5865
Teacher's aides program	-.0145	-.0491	-.0346	.0002	.0021	10.5000
Remedial reading program	-.0147	.0522	.0669	.0002	.0023	11.5000
Special classrooms for underachievers . . .	.0065	.0858	.0793	.0000	.0067	.0000
Special classrooms for socially or emotion- ally maladjusted . .	.0352	-.0326	-.0678	.0012	.0009	.7500
Achievement grouping of classrooms	-.1435	-.0790	.0645	.0205	.0054	.2634
Major curriculum revisions	.0290	.0553	.0263	.0008	.0028	3.5000
Extent of demonstra- tion classrooms . .	-.1733	-.1321*	.0484	.0300	.0163	.5433
Grouping within classrooms	-.1805	-.1519*	.0286	.0325	.0207	.6349
Program for tutoring low achieving students .	.0388	.0004	-.0384	.0015	.0000	.0000
Special program to in- crease parent-teacher contact (e.g., con- ferences)	-.0522	-.0497	.0025	.0027	.0022	.8148
Program to improve intergroup relations among students . . .	-.0032	.0086	.0118	.0000	.0000	.0000
Program to improve intergroup relations among teachers . . .	.0072	.0614	.0542	.0000	.0031	.0000

^aThe standardized coefficients in this table are not entered simultane-
ously. They represent the coefficient for each variable as if it were entered
immediately following the control equation.

*Betas are significant at .05 level.

(Continued)

TABLE C.9--Continued

Variable	Simple Corre- lation Coeffi- cient	Stan- dardized Regres- sion Coeffi- cient Beta	B - R	Simple R ²	Unique R ² After Controls	Unique R ² After Controls/ Simple R ²
Equipment for students to use, such as read- ing machines, tape recorders, video tape machines, etc.	-.0328	-.0642	-.0314	.0010	.0038	3.8000
Team teaching	.1123	.0758	-.0365	.0126	.0051	.4047
Extent of ungraded classrooms	-.1149	-.1103	.0046	.0132	.0113	.8560
Remedial reading teacher	-.0028	.0313	.0341	.0000	.0008	.0000
Remedial math teacher .	-.0220	.0453	.0673	.0004	.0016	4.0000
Music or art teacher . .	.2062	.1502*	-.0560	.0425	.0184	.4329
Drama or speech teacher.	.0716	.0632	-.0084	.0051	.0034	.6666
Gym teacher or coach . .	.1549	.1086	-.0463	.0239	.0104	.4351
Vocational education teacher	.0924	.0945	.0021	.0085	.0078	.9176
Counselor's aides	.0697	.0282	-.0415	.0048	.0007	.1458
Guidance counselor . . .	.0269	.0432	.0163	.0007	.0015	2.1428
Psychologist	.1802	.0413	-.1389	.0324	.0012	.0370
Social worker	.0237	.0113	-.0124	.0005	.0001	.2000
Speech therapist	.2108	.2578*	.0470	.0444	.0524	1.1801
Teacher's aides	.0432	.0606	.0172	.0018	.0031	1.7222
Library aide or clerk .	.1046	.0932	-.0114	.0109	.0068	.6238
Librarian	.2391	.1587*	-.0804	.0571	.0221	.3870
Nurse	.1156	.1365*	.0209	.0133	.0174	1.3082
Audio-visual specialist.	.1113	.0833				
Truant officer/home visitor	.0673	.0618				
Community relations specialist	.0558	.1032	.0494	.0031	.0103	3.3225
Administrator (not listed above)	.1389	.2308*				
Texts	.1037	.1480*	.0443	.0107	.0208	1.9439
Test materials	-.0059	.0648	.0707	.0000	.0037	.0000
Literature	.0868	.0519	-.0349	.0075	.0023	.3066
Furnishings	.0814	.0385	-.0429	.0066	.0013	.1969
Renovations	.1242	.0849	-.0393	.0154	.0060	.3896
Space	-.0626	-.0887	-.0261	.0039	.0071	1.8205

TABLE C.10

FIFTH GRADE BLACK URBAN PROGRAM EFFECTS^a ON STUDENT RACIAL ATTITUDES
AFTER TABLE C.2 BETA CONTROLS HAVE BEEN ENTERED

Variable	Simple Correlation Coefficient	Standardized Regression Coefficient Beta	B - R	Simple R ²	Unique R ² After Controls	Unique R ² After Controls/ Simple R ²
Guidance counseling	-.0403	-.0230	.0173	.0016	.0004	.2500
Social worker or home visitor program	-.0163	-.0143	.0020	.0002	.0001	.5000
Teacher's aides program .	.1033	.0744	-.0289	.0106	.0048	.4528
Remedial reading program .	.0086	.0086	.0000	.0000	.0000	.0000
Special classrooms for underachievers	.0139	-.0089	-.0228	.0001	.0000	.0000
Special classrooms for socially or emotion- ally maladjusted	.0804	.0871	.0067	.0064	.0070	1.0937
Achievement grouping of classrooms	.0521	.0266	.0056	.0027	.0005	.1851
Major curriculum revisions	.1596	.1043	-.0553	.0254	.0098	.3858
Extent of demonstration classrooms	.2241	.1887*	-.0354	.0502	.0322	.6414
Grouping within classrooms	-.1443	-.1604*	-.0161	.0208	.0227	1.0913
Program for tutoring low achieving students . . .	.0270	.0613	.0343	.0007	.0032	4.5714
Special program to increase parent-teacher contact (e.g., conferences) . .	.0483	.0692	.0209	.0023	.0040	1.7391
Program to improve inter- group relations among students	.0780	.0355	-.0425	.0060	.0011	.1833
Program to improve inter- group relations among teachers	.0371	.0175	-.0196	.0013	.0002	1538
Equipment for students to use, such as reading machines, tape recorders, video tape machines, etc.	.0388	.0243	-.0145	.0015	.0005	.3333

^aThe standardized coefficients in this table are not entered simultaneously. They represent the coefficient for each variable as if it were entered immediately following the control equation.

*Betas are significant at .05 level.

(Continued)

TABLE C.10--Continued

Variable	Simple Correlation Coefficient	Stan- dardized Regres- sion Coeffi- cient Beta	B - R	Simple R ²	Unique R ² After Controls	Unique R ² After Controls/ Simple R ²
Team teaching	.0572	.0025	-.0547	.0032	.0000	.0000
Extent of ungraded class- rooms	.2794	.2869*	.0075	.0780	.0696	.8923
Remedial reading teacher .	.0517	.0999	.0482	.0026	.0078	3.0000
Remedial math teacher . . .	.0648	.0702	.0054	.0041	.0044	1.0731
Music or art teacher	.0636	-.0058	-.0694	.0040	.0000	.0000
Drama or speech teacher . .	.0785	.0498	-.0295	.0061	.0020	.3278
Gym teacher or coach	.1128	.0186	-.0942	.0127	.0002	.0157
Vocational education teacher	-.0886	-.0731	.0155	.0078	.0050	.6410
Counselor's aides	.1272	.1155	-.0117	.0161	.0116	.7204
Guidance counselor	.0697	.0287	-.0410	.0048	.0007	.1458
Psychologist	.0209	.0843	.0634	.0004	.0058	14.5000
Social worker	.0242	.0315	.0073	.0005	.0007	1.4000
Speech therapist	.0230	.0327	.0097	.0005	.0008	1.6000
Teacher's aides	.1330	.1126	-.0204	.0176	.0098	.5566
Library aide or clerk	-.1248	-.1209*	.0039	.0155	.0131	.8451
Librarian	.1339	.1364*	.0025	.0179	.0147	.8212
Nurse	.1053	.0728	-.0325	.0110	.0052	.4727
Audio-visual specialist . . .	.1139	.0987	-.0152	.0129	.0091	.7054
Truant officer/home visitor	.0031	-.0262	-.0293	.0000	.0005	.0000
Community relations specialist	.0462	.0697	.0235	.0021	.0043	2.0476
Administrator (not listed above)	.1367	.0656	-.0711	.0186	.0036	.9135
Texts	-.0423	-.0719	-.0296	.0017	.0047	2.7647
Test materials	-.0285	-.0025	.0260	.0008	.0000	.0000
Literature	.0307	.0135	-.0172	.0009	.0001	.1250
Furnishings	-.0067	-.0838	-.0771	.0000	.0060	.0000
Renovations	.0752	.0556	-.0196	.0056	.0028	.5000
Space	-.0069	.0357	.0426	.0000	.0010	.0000

TABLE C.11

FIFTH GRADE WHITE RURAL PROGRAM EFFECTS^a ON STUDENT RACIAL ATTITUDES
AFTER TABLE C.3 BETA' CONTROLS HAVE BEEN ENTERED

Variable	Simple Correlation Coefficient	Standardized Regression Coefficient Beta	B - R	Simple R ²	Unique R ² After Controls	Unique R ² After Controls/ Simple R ²
Guidance counseling	.0712	-.0052	-.0764	.0050	.0000	.0000
Social worker or home visitor program	-.0201	-.0395	-.0194	.0004	.0014	3.5000
Teacher's aides program .	.0033	-.0836	-.0169	.0000	.0057	.0000
Remedial reading program .	-.0827	-.0498	.0329	.0068	.0022	.3235
Special classrooms for underachievers	-.0502	.0648	.0515	.0025	.0037	1.4800
Special classrooms for socially or emotion- ally maladjusted	.0173	-.0192	-.0365	.0002	.0003	1.5000
Achievement grouping of classrooms	-.1009	-.0668	.0341	.0101	.0037	.3663
Major curriculum revisions	-.0218	.0431	.0649	.0004	.0015	3.7500
Extent of demonstration classrooms	-.0655	-.0214	.0441	.0042	.0004	.0952
Grouping within classrooms	-.0827	-.0808	.0019	.0068	.0074	1.0882
Program for tutoring low achieving students	.0911	-.0282	-.1093	.0082	.0006	.0731
Special program to increase parent-teacher contact (e.g., conferences) . .	.0555	.0788	.0233	.0030	.0057	1.9000
Program to improve inter- group relations among students	-.0213	-.0631	-.0418	.0004	.0035	8.7500
Program to improve inter- group relations among teachers	-.1193	-.0525	.0668	.0142	.0024	.1690
Equipment for students to use, such as reading machines, tape recorders, video tape machines, etc.	-.0347	-.1242*	.0895	.0012	.0141	11.7500

^aThe standardized coefficients in this table are not entered simultaneously. They represent the coefficient for each variable as if it were entered immediately following the control equation.

*Betas are significant at .05 level.

TABLE C.11--Continued

Variable	Simple Corre- lation Coeffi- cient	Stan- dardized Regres- sion Coeffi- cient Beta	B - R	Simple R ²	Unique R ² After Controls	Unique R ² After Controls/ Simple R ²
Team teaching	.1214	.0558	-.0656	.0147	.0028	.1904
Extent of ungraded class- rooms	-.0091	.0013	.0104	.0001	.0000	.0000
Remedial reading teacher .	.0498	.0119	-.0379	.0024	.0001	.0416
Remedial math teacher . . .	.0018	.0659	-.0641	.0000	.0040	.0000
Music or art teacher	.1345	.0909	-.0436	.0180	.0070	.3888
Drama or speech teacher . .	.1136	.0676	-.0460	.0129	.0042	.3255
Gym teacher or coach	.0989	.0479	-.0510	.0097	.0020	.2061
Vocational education teacher	.1408	.0797	-.0611	.0198	.0054	.2727
Counselor's aides	.0248	-.0009	-.0257	.0006	.0000	.0000
Guidance counselor	.1832	.0974	-.0858	.0335	.0085	.2537
Psychologist	.2097	.0982	-.1115	.0439	.0078	.1776
Social worker	.0207	-.0397	.0190	.0004	.0014	3.5000
Speech therapist	.0356	.0426	.0070	.0012	.0013	1.0833
Teacher's aides	.1569	.1154*	-.0415	.0246	.0102	.4146
Library aide or clerk	.1125	-.0399	-.1524	.0126	.0012	.0952
Librarian	.1647	.0756	-.0891	.0271	.0048	.1771
Nurse	-.0069	.0482	.0551	.0004	.0021	5.2500
Audio-visual specialist . . .	.0440	-.0883	-.1323	.0000	.0064	.0000
Truant officer/home visitor	.0245	-.0165	-.0410	.0006	.0002	.3333
Community relations specialist	-.0084	.0051	.0135	.0000	.0000	.0000
Administrator (not listed above)	-.0093	.0572	.0665	.0000	.0028	.0000
Texts	-.0620	-.0161	.0459	.0036	.0030	.8333
Test materials	-.0626	-.0295	.0331	.0039	.0007	.1794
Literature	.1708	-.0602	-.2310	.0291	.0002	.0068
Furnishings	-.0461	-.1051*	.0590	.0021	.0105	5.0000
Renovations	.0724	.0055	-.0669	.0052	.0000	.0000
Space	-.0363	.0260	.0623	.0013	.0005	.3846

TABLE C.12

FIFTH GRADE WHITE URBAN PROGRAM EFFECTS^a ON STUDENT RACIAL ATTITUDES
AFTER TABLE C.4 BETA^a CONTROLS HAVE BEEN ENTERED

Variable	Simple Correlation Coefficient	Standardized Regression Coefficient Beta	B - R	Simple R ²	Unique R ² After Controls	Unique R ² After Controls/ Simple R ²
Guidance counseling	.0127	-.1094	-.1221	.0001	.0106	106.0000
Social worker or home visitor program	-.1449	-.0826	.0623	.0209	.0059	.2822
Teacher's aides program .	.0131	-.0040	-.0171	.0001	.0000	.0000
Remedial reading program .	.0228	.0055	-.0175	.0005	.0000	.0000
Special classrooms for underachievers	.1108	.0064	-.1044	.0122	.0000	.0000
Special classrooms for socially or emotion- ally maladjusted	-.1276	-.1382*	-.0106	.0162	.0170	1.0493
Achievement grouping of classrooms	-.1551	-.1229	.0322	.0240	.0140	.5833
Major curriculum revisions	.0640	.0294	-.0346	.0040	.0007	.1750
Extent of demonstration classrooms	.0662	.0718	.0056	.0043	.0047	1.0930
Grouping within classrooms	-.0607	-.1191	-.0584	.0036	.0134	3.7222
Program for tutoring low achieving students	.1247	.1229	.0018	.0155	.0134	.8645
Special program to increase parent-teacher contact (e.g., conferences) . . .	.0365	.0231	-.0134	.0013	.0004	.3076
Program to improve inter- group relations among students	.1583	.1705*	.0122	.0250	.0274	1.0960
Program to improve inter- group relations among teachers	.0170	.0092	-.0078	.0002	.0000	.0000
Equipment for students to use, such as reading machines, tape recorders, video tape machines, etc.	-.0174	-.0789	.0615	.0003	.0057	19.0000

^aThe standardized coefficients in this table are not entered simultaneously. They represent the coefficient for each variable as if it were entered immediately following the control equation.

*Betas are significant at .05 level.

TABLE C.12--Continued

Variable	Simple Corre- lation Coeffi- cient	Stan- dardized Regres- sion Coeffi- cient Beta	B - R	Simple R ²	Unique R ² After Controls	Unique R ² After Controls/ Simple R ²
Team teaching	.0941	.0729	-.0212	.0088	.0047	.5340
Extent of ungraded class- rooms	.0675	.0410	-.0265	.0045	.0013	.2888
Remedial reading teacher .	-.0312	.0343	.0655	.0009	.0009	1.0000
Remedial math teacher . . .	-.0289	-.0537	-.0248	.0008	.0027	.3375
Music or art teacher	.0927	.0255	-.0672	.0085	.0004	.0470
Drama or speech teacher . .	-.0174	.0165	.0339	.0003	.0002	.6666
Gym teacher or coach	.0287	-.0259	-.0546	.0008	.0005	.6250
Vocational education teacher	-.1233	-.0751	.0482	.0152	.0053	.3486
Counselor's aides	-.0747	-.0159	.0588	.0055	.0002	.0363
Guidance counselor	.0973	-.0142	-.1115	.0094	.0001	.0106
Psychologist	.0054	.0522	.0468	.0000	.0022	.0000
Social worker	-.0375	-.0010	.0365	.0014	.0000	.0000
Speech therapist	.0939	-.0130	-.1069	.0088	.0001	.0113
Teacher's aides	-.0068	-.0454	-.0386	.0000	.0016	.0000
Library aide or clerk	-.0229	-.0014	.0215	.0005	.0000	.0000
Librarian	.1697	.0216	-.1481	.0287	.0003	.0104
Nurse	.1190	.0986	-.0204	.0141	.0073	.5177
Audio-visual specialist . . .	.0156	.0131	-.0025	.0002	.0001	.5000
Truant officer/home visitor	-.0252	.0486	.0738	.0006	.0020	3.3333
Community relations specialist	-.0205	.0326	.0531	.0004	.0009	2.2500
Administrator (not listed above)	.0919	.0446	-.0473	.0084	.0013	.1547
Texts	.0111	.0083	-.0028	.0001	.0000	.0000
Test materials	.0022	-.0337	-.0359	.0000	.0010	.0000
Literature	.1518	.0997	-.0521	.0230	.0092	.4000
Furnishings	.1869	.1419*	.0450	.0349	.0188	.5386
Renovations	.0320	-.0603	-.0923	.0010	.0032	3.2000
Space	.1123	.0549	-.0574	.0126	.0027	.2142

TABLE C.13

TENTH GRADE BLACK RURAL PROGRAM EFFECTS^a ON STUDENT RACIAL ATTITUDES
AFTER TABLE C.5 BETA' CONTROLS HAVE BEEN ENTERED

Variable	Simple Corre- lation Coeffi- cient	Stan- dardized Regres- sion Coeffi- cient Beta	B - R	Simple R ²	Unique R ² After Controls	Unique R ² After Controls/ Simple R ²
Guidance counseling	.0128	-.0093	-.0221	.0001	.0000	.0000
Social worker or home visitor program	-.0017	.0056	.0073	.0000	.0000	.0000
Teacher's aides program .	.0147	.0519	.0372	.0002	.0021	10.5000
Teacher workshops or in- service training for teachers or teacher aides	.0373	-.0006	-.0379	.0013	.0000	.0000
Remedial reading program .	.0939	.0429	-.0510	.0088	.0016	.1818
Vocational training courses	.0254	.0280	.0026	.0005	.0006	1.2000
Minority group history or culture courses	-.2029	-.2070*	-.0041	.0411	.0399	.9708
Special classrooms for underachievers	.0863	.1723*	.0860	.0074	.0240	3.2432
Special classrooms for socially or emotionally maladjusted	-.0620	-.0375	.0245	.0038	.0013	.3421
Achievement grouping of classrooms	.0356	.0653	.0297	.0012	.0037	3.0833
Tracking ^b	.0833	.1749	.0918	.0069	.0238	3.4492
Major curriculum revisions	-.0941	-.1513	-.0572	.0088	.0203	2.3068
Extracurricular activities geared toward minority students	-.0710	-.0802	-.0092	.0050	.0059	1.1800
Late bus for students who stay late for extracur- ricular activities	.0706	.0379	-.0327	.0049	.0010	.2040
Program for tutoring low achieving students	-.1193	-.1487	-.0294	.0142	.0193	1.3591

^aThe standardized coefficients in this table are not entered simultaneously. They represent the coefficient for each variable as if it were entered immediately following the control equation.

^bSee Table E.15, Appendix E.

* Betas are significant at .05 level.

(Continued)

TABLE C.13--Continued

Variable	Simple Correlation Coefficient	Stan- dardized Regres- sion Coeffi- cient Beta	B - R	Simple R ²	Unique R ² After Controls	Unique R ² After Controls/ Simple R ²
Special program to increase parent-teacher contact (e.g., conferences)	.0039	-.0198	-.0237	.0000	.0003	.0000
Program to improve intergroup relations among students . .	-.0508	-.0426	.0082	.0025	.0016	.6400
Program to improve intergroup relations among teachers . .	-.0478	-.1107	-.0629	.0022	.0112	.5454
Biracial advisory committee of students	-.0813	-.0330	.0483	.0066	.0009	.1363
Equipment for students to use, such as reading machines, tape recorders, video tapes, etc.	-.1126	-.0549	.0577	.0126	.0026	.2063
Remedial reading teacher . . .	.0368	.0522	.0154	.0013	.0023	1.7692
Remedial math teacher	-.1213	-.1130	.0083	.0147	.0119	.8095
Music or art teacher	.0323	.0361	.0038	.0010	.0011	1.1000
Drama or speech teacher . . .	-.2227	-.2673*	-.0446	.0495	.0683	1.3797
Gym teacher or coach	.0696	.0604	-.0092	.0048	.0035	.7291
Vocational education teacher .	-.0291	-.0664	-.0373	.0008	.0035	4.3750
Counselor's aides	-.2336	-.2255*	.0081	.0545	.0470	.8623
Guidance counselor	.0404	.0385	-.0019	.0016	.0013	.8125
Psychologist	-.0589	-.0896	-.0307	.0034	.0074	2.1764
Social worker	-.0767	-.0696	.0071	.0058	.0046	.7931
Speech therapist	.0436	.0369	-.0067	.0019	.0011	.5789
Teacher's aides	-.1626	-.1175	.0451	.0264	.0111	.4204
Library aide or clerk	-.1578	-.1347	.0231	.0249	.0169	.6787
Librarian	-.1190	-.0688	.0502	.0141	.0037	.2624
Nurse	.1150	.1069	-.0081	.0132	.0097	.7348
Audio-visual specialist	.0016	.0340	.0324	.0000	.0010	.0000
Truant officer/home visitor .	-.0004	.0188	.0192	.0000	.0003	.0000
Community relations specialist	-.1017	-.0904	.0113	.0103	.0069	.6699
Administrator (not listed above)	.0708	.0959	.0251	.0050	.0071	1.4200
Texts	.1538	.0996	-.0542	.0236	.0090	.3813
Test materials	.0048	-.0048	-.0096	.0000	.0000	.0000
Literature	.0925	.0505	-.0420	.0085	.0019	.2235
Furnishings	-.0916	-.0645	-.1561	.0083	.0037	.4457
Renovations	-.0959	.1383	-.0424	.0091	.0175	1.9230
Space	.0586	.0288	-.0298	.0034	.0007	.2058

TABLE C.14

TENTH GRADE BLACK URBAN PROGRAM EFFECTS^a ON STUDENT RACIAL ATTITUDES
AFTER TABLE C.6 BETA¹ CONTROLS HAVE BEEN ENTERED

Variable	Simple Corre- lation Coeffi- cient	Stan- dardized Regres- sion Coeffi- cient Beta	B - R	Simple R ²	Unique R ² After Controls	Unique R ² After Controls/ Simple R ²
Guidance counseling	-.0156	.0501	.0657	.0002	.0002	10.0000
Social worker or home visitor program	.1292	-.0423	-.1715	.0166	.0013	.0783
Teacher's aides program . . .	.0241	-.0577	-.0818	.0005	.0029	5.8000
Teacher workshops or in-service training for teachers or teacher aides	-.0927	-.0448	.0479	.0085	.0018	.2117
Remedial reading program . .	-.1735	-.0666	.1069	.0301	.0044	.1461
Vocational training courses .	.0574	.0176	-.0398	.0032	.0002	.0625
Minority group history or culture courses	-.1741	-.0982	.0720	.0303	.0078	.2574
Special classrooms for under- achievers	-.1702	-.2212*	-.0510	.0289	.0398	5.1025
Special classrooms for socially or emotionally maladjusted.	-.2939	-.3278*	-.0339	.0863	.0915	1.0602
Achievement grouping of class- rooms	-.0278	.0673	.0951	.0007	.0045	6.4285
Tracking ^b	.0477	.0784	.0307	.0022	.0056	2.5454
Major curriculum revisions .	-.1827	-.1183	.0644	.0333	.0131	.3933
Extracurricular activities geared toward minority students	.1277	.0956	-.0321	.0163	.0084	.5153
Late bus for students who stay late for extracurricu- lar activities	.0466	.0713	.0247	.0021	.0050	2.3805
Program for tutoring low achieving students	-.0796	-.0185	.0611	.0063	.0003	.0476
Special program to increase parent-teacher contact (e.g., conferences)	-.2059	-.1522	.0537	.0423	.0219	.5177

^aThe standardized coefficients in this table are not entered simultaneously. They represent the coefficient for each variable as if it were entered immediately following the control equation.

^bSee Table E.15, Appendix E.

*Betas are significant at .05 level.

(Continued)

TABLE C.14--Continued

Variable	Simple Corre- lation Coeffi- cient	Stan- dardized Regres- sion Coeffi- cient Beta	B - R	Simple R ²	Unique R ² After Controls	Unique R ² After Controls/ Simple R ²
Program to improve intergroup relations among students . . .	-.0728	-.0167	.0561	.0052	.0002	.0384
Program to improve intergroup relations among teachers . . .	.0497	-.0538	-.1035	.0024	.0025	1.0416
Biracial advisory committee of students	.0349	.0668	.0319	.0012	.0035	2.9166
Equipment for students to use, such as reading machines, tape recorders, video tapes, etc. .	-.0170	.0194	.0364	.0002	.0003	1.5000
Remedial reading teacher	-.1459	.0131	.1590	.0212	.0001	.0047
Remedial math teacher	-.2057	-.1112	.0945	.0420	.0110	.2619
Music or art teacher	-.1045	.0539	.1584	.0109	.0020	.1834
Drama or speech teacher	-.0151	.1198	.1349	.0002	.0105	52.5000
Gym teacher or coach	-.0855	.1171	.2026	.0073	.0098	1.3424
Vocational education teacher . .	-.0164	.0336	.5000	.0002	.0010	5.0000
Counselor's aides	-.0135	.0268	.0403	.0001	.0005	5.0000
Guidance counselor	-.1533	-.1034	.0499	.0235	.0072	.3063
Psychologist	-.0935	-.0707	.0228	.0087	.0047	.5402
Social worker	-.0390	-.1773	-.1383	.0015	.0263	17.5333
Speech therapist	-.1845	-.1768	.0077	.0340	.0305	.8970
Teacher's aides	.0324	-.0390	-.0714	.0010	.0013	1.3000
Library aide or clerk	-.1482	-.0133	.1349	.0219	.0001	.0045
Librarian	.0372	.0202	-.0170	.0013	.0003	.1538
Nurse	.0413	-.0340	-.0753	.0017	.0011	.6470
Audio-visual specialist	-.1050	-.0265	.0785	.0110	.0005	.0454
Truant officer/home visitor . .	-.0948	-.1088	-.0140	.0089	.0010	1.2359
Community relations specialist .	-.0988	-.2440*	-.1452	.0097	.0462	4.7628
Administrator (not listed above)	-.1530	-.1444	.0086	.0234	.0199	.8504
Texts	-.0892	.0079	.0971	.0079	.0000	.0000
Test materials	-.0669	-.0386	.0283	.0044	.0013	.2954
Literature	.0802	.1224	.0422	.0064	.0130	2.0312
Furnishings	-.0239	.0448	.0687	.0005	.0019	3.8000
Renovations	-.0375	.1092	.1467	.0014	.0098	7.0000
Space	-.0108	.0041	.0149	.0001	.0000	.0000

TABLE C.15

TENTH GRADE WHITE RURAL PROGRAM EFFECTS^a ON STUDENT RACIAL ATTITUDES
AFTER TABLE C.7 BETA^a CONTROLS HAVE BEEN ENTERED

Variable	Simple Corre- lation Coeffi- cient	Stan- dardized Regres- sion Coeffi- cient Beta	B - R	Simple R ²	Unique R ² After Controls	Unique R ² After Controls/ Simple R ²
Guidance counseling	.0927	.0703	-.0224	.0085	.0045	.5294
Social worker or home visitor program	.0738	-.0155	-.0893	.0054	.0002	.0370
Teacher's aides program . . .	.0103	.0603	.0500	.0001	.0029	29.0000
Teacher workshops or in-service training for teachers or teacher aides	-.0697	.0627	.1324	.0048	.0032	.6666
Remedial reading program . .	.0211	.0040	-.0171	.0004	.0000	.0000
Vocational training courses .	-.0161	.0282	.0443	.0002	.0007	3.5000
Minority group history or culture courses	-.0084	-.0558	-.0474	.0000	.0029	.0000
Special classrooms for under- achievers	.0850	.0141	-.0709	.0072	.0001	.0138
Special classrooms for socially or emotionally maladjusted.	.1005	-.0027	-.1032	.0101	.0000	.0000
Achievement grouping of class- rooms	-.0482	-.1198	-.0716	.0023	.0121	5.2608
Tracking ^b	.1504	.0691	.0813	.0226	.0037	.1637
Major curriculum revisions .	.1976	.1014	-.0962	.0390	.0083	.2128
Extracurricular activities geared toward minority students	.1973	.0946	-.1027	.0389	.0077	.1979
Late bus for students who stay late for extracurricu- lar activities	-.0490	-.1230	-.0740	.0024	.0116	4.8333
Program for tutoring low achieving students	-.1405	-.0990	.0409	.0197	.0091	.4619
Special program to increase parent-teacher contact (e.g., conferences)	.0436	.0088	-.0348	.0019	.0000	.0000

^aThe standardized coefficients in this table are not entered simultaneously. They represent the coefficient for each variable as if it were entered immediately following the control equation.

^bSee Table E. 15, Appendix E.

*Betas are significant at .05 level.

(Continued)

TABLE C.15--Continued

Variable	Simple Correlation Coefficient	Stan- dardized Regres- sion Coeffi- cient Beta	B - R	Simple R ²	Unique R ² After Controls	Unique R ² After Controls/ Simple R ²
Program to improve intergroup relations among students . . .	-.0035	-.0249	-.0214	.0001	.0007	7.0000
Program to improve intergroup relations among teachers . . .	.0979	.1040	.0061	.0095	.0104	1.0947
Biracial advisory committee of students	-.1382	-.0516	.0866	.0190	.0022	.1157
Equipment for students to use, such as reading machines, tape recorders, video tapes, etc. .	-.1749	-.0492	.1257	.0305	.0021	.0688
Remedial reading teacher	.0221	.0926	.0705	.0004	.0059	14.7500
Remedial math teacher	-.0251	.0040	.0291	.0006	.0000	.0000
Music or art teacher	.0749	.0255	-.0494	.0056	.0005	.0892
Drama or speech teacher	-.0427	-.0268	.0159	.0018	.0006	.3333
Gym teacher or coach	.0674	.1517*	.0843	.0045	.0187	4.1555
Vocational education teacher . .	-.0055	-.0308	.0253	.0000	.0007	.0000
Counselor's aides	.0306	-.0471	-.0777	.0009	.0019	2.1111
Guidance counselor	.0796	.0467	-.0329	.0063	.0017	.2698
Psychologist	.1406	.0554	-.0852	.0197	.0026	.1319
Social worker	.0643	.0447	-.0196	.0041	.0017	.4146
Speech therapist	-.0016	.0671	.0687	.0000	.0039	.0000
Teacher's aides	-.0539	.0867	.9209	.0029	.0055	1.8965
Library aide or clerk	.0566	.0154	-.0412	.0032	.0002	.0625
Librarian	-.0585	.0823	.1408	.0034	.0046	1.3529
Nurse	.0631	.0372	.0259	.0039	.0012	.3076
Audio-visual specialist	.0536	-.0305	-.0841	.0028	.0008	.2857
Truant officer/home visitor . .	.1398	.1337	-.0061	.0195	.0154	.7897
Community relations specialist .	.0950	.0354	-.0596	.0090	.0010	.1111
Administrator (not listed above)	.0001	.1611*	.1610	.0000	.0198	.0000
Texts	.0864	.1684*	.0820	.0074	.0251	3.3918
Test materials	-.0646	.0844	.0198	.0041	.0054	1.3170
Literature	.0712	-.0919	-.1631	.0050	.0069	1.3800
Furnishings	.1202	-.0441	-.1643	.0144	.0016	.1111
Renovations	.0995	.0794	.0201	.0099	.0058	.5858
Space	.1373	.1206	-.0167	.0188	.0137	.7287

TABLE C.16

TENTH GRADE WHITE URBAN PROGRAM EFFECTS^a ON STUDENT RACIAL ATTITUDES
AFTER TABLE C.8 BETA¹ CONTROLS HAVE BEEN ENTERED

Variable	Simple Corre- lation Coeffi- cient	Stan- dardized Regres- sion Coeffi- cient Beta	B - R	Simple R ²	Unique R ² After Controls	Unique R ² After Controls/ Simple R ²
Guidance counseling	-.1385	-.0290	.1095	.0191	.0007	.0036
Social worker or home visitor program	.1679	-.0850	-.2529	.0281	.0037	.1316
Teacher's aides program . . .	.0854	.0111	-.0743	.0072	.0001	.0138
Teacher workshops or in-service training for teachers or teacher aides	.0818	.1058	.0240	.0066	.0085	1.2878
Remedial reading program . .	-.0809	-.0562	.0247	.0065	.0026	.4000
Vocational training courses .	-.1224	-.1080	.0144	.0149	.0103	.6912
Minority group history or culture courses	-.0774	-.1240	-.0466	.0059	.0128	2.1694
Special classrooms for under- achievers	.1938	.0372	-.1566	.0375	.0010	.0266
Special classrooms for socially or emotionally maladjusted.	-.2487	-.1100	.1387	.0610	.0094	.1540
Achievement grouping of class- rooms	.0750	.2150*	.1400	.0056	.0329	5.8750
Tracking ^b	.1629	.1088	-.0541	.0265	.0109	.4113
Major curriculum revisions .	.0463	.0346	-.0117	.0021	.0011	.5238
Extracurricular activities geared toward minority students	.0417	-.1293	-.1710	.0017	.0142	8.3529
Late bus for students who stay late for extracurricu- lar activities	-.1594	-.0212	.1382	.0254	.0003	.0118
Program for tutoring low achieving students	.0435	.0080	-.0355	.0018	.0000	.0000
Special program to increase parent-teacher contact (e.g., conferences)	.0943	.0243	-.0670	.0088	.0004	.0454

^aThe standardized coefficients in this table are not entered simultaneously. They represent the coefficient for each variable as if it were entered immediately following the control equation.

^bSee Table E.15, Appendix E.

*Betas are significant at .05 level.

(Continued)

TABLE C-16--Continued

Variable	Simple Corre- lation Coeffi- cient	Stan- dardized Regres- sion Coeffi- cient Beta	B - R	Simple R ²	Unique R ² After Controls	Unique R ² After Controls/ Simple R ²
Program to improve intergroup relations among students	.0946	.1625*	.0679	.0089	.0221	2.4831
Program to improve intergroup relations among teachers	.1521	.1932*	.0411	.0231	.0314	1.3593
Biracial advisory committee of students	.0041	.0257	.0216	.0000	.0005	.0000
Equipment for students to use, such as reading machines, tape recorders, video tapes, etc. . .	-.0313	.0504	.0817	.0009	.0020	2.2222
Remedial reading teacher	-.1012	.0112	.1124	.0102	.0001	.0098
Remedial math teacher	-.1002	-.0517	.0486	.0100	.0024	.2400
Music or art teacher	-.0326	.0251	.0577	.0010	.0004	.4000
Drama or speech teacher	.1710	.0383	-.1327	.0292	.0010	.0342
Gym teacher or coach	-.2379	-.2192*	.0187	.0565	.0332	.5876
Vocational education teacher . .	-.1144	-.0152	.0992	.0124	.0001	.0030
Counselor's aides	.1251	.1095	-.0156	.0156	.0097	.6217
Guidance counselor	-.0046	-.1581	-.1535	.0000	.0151	.0000
Psychologist	-.0116	-.0657	-.0541	.0001	.0038	38.0000
Social worker	.2925	-.0102	-.3027	.0850	.0000	.0000
Speech therapist	-.1592	-.1677*	-.0085	.0253	.0249	.9841
Teacher's aides	.0805	.0249	-.0556	.0064	.0005	.0781
Library aide or clerk	-.1078	-.0392	.0686	.0116	.0011	.0948
Librarian	-.0790	-.1214	-.0424	.0062	.0122	1.9677
Nurse	-.0915	-.0691	.0224	.0083	.0045	.5421
Audio-visual specialist	.0637	.0014	.0623	.0040	.0000	.0000
Truant officer/home visitor . .	.0064	-.0433	-.0497	.0000	.0017	.0000
Community relations specialist .	.0038	-.1300	-.1338	.0000	.0115	.0000
Administrator (not listed above)	.0313	-.0574	-.0887	.0009	.0025	2.7777
Texts	-.0703	-.0387	.0316	.0049	.0018	.3673
Test materials	-.0719	.0318	.1037	.0051	.0008	.1568
Literature	.0986	.0765	.0221	.0097	.0049	.5051
Furnishings	.0544	.0477	.0067	.0029	.0019	.6551
Renovations	.1186	.0530	-.0656	.0140	.0023	.1642
Space	-.1135	-.1362	-.0227	.0128	.0153	1.1953

APPENDIX D

NOTES ON THE VALIDITY AND RELIABILITY OF THE ACHIEVEMENT TESTS

The Survey Test of Educational Achievement (STEA) used in this study is a set of shortened versions of five of the subtests of the ETS STEP battery. Each of the subtests is normally approximately one hour in length; for this study, each component was cut to approximately 12 minutes so that the entire test would be 60 minutes in length. This was done because we were attempting to measure the effects of school upon achievement, and were not interested either in diagnosing the ability of individual students or in analyzing individual correlates of achievement. The analysis would be limited to looking at mean achievement scores in each school. A school mean based upon from five to fifty students is considerably more reliable than a score for a single student. Consequently, we felt we could trade off test length against the number of students tested to produce a test score for the school as a whole that was at least as reliable as the usual test scores developed for individual students.

The Survey Test of Educational Achievement is a brief test, constructed by Darrell F. Bock, University of Chicago, designed to measure average classroom achievement in several subject matter areas. It is not intended for use in the assessment of individual students. The test provides for comparison of classroom means with respect to general educational achievement (total score), five subject matter areas (part-scores), and, if desired, individual items (per cent correct). The subject matter areas covered are (1) Reading (vocabulary and paragraph reading), (2) Mechanics of writing (capitalization and punctuation), (3) Mathematics computation, (4) Mathematics basic concepts, and (5) Science. Forms of the test have been prepared for the fifth grade and tenth grade levels. Each form consists of 57 items and requires 42 minutes of testing time plus 8-10 minutes of instruction.

Items for the tests have been selected from the Sequential Tests of Educational Progress (STEP), Version II, Norming Edition, published by Educational Testing Service Cooperative Test Division in 1969. Items from Form 4A, 2A, and 2B were used. The rationale for the STEP tests is described in the Book of Norms for STEP and SCAT published by the Cooperative Test Division in 1970. Item content for the STEP tests was designed to sample content and cognitive levels defined in the Taxonomy of Educational Objectives by Benjamin S. Bloom, et al. Of the seven STEP tests, two were excluded from the STEA test. English Expression was excluded because it required recognition of features of nonstandard English which vary greatly among regions, ethnic groups, and social classes. Evaluation of this aspect of expression was judged inappropriate for between-school comparisons. Social Studies was excluded for much the same reason: many of the items required information and judgments too closely involved with regional and class differences.

Items were selected from the STEP tests on the basis of item difficulty (per cent correct) and item discriminating power (part-whole correlation or r_{bis}). Item statistics were based on a national probability sample of 1,000 students at the fifth grade and tenth grade levels and supplied by the Cooperative Test Division. Item difficulties were chosen to center about 62.5, which is the point of maximum item response information for four alternative items when guessing is permitted (subjects are instructed to guess if they do not know the answer). Because it was thought that a Southeast population might fall below the national norm in school achievement, the item distributions were weighted somewhat more heavily toward easier items. Within this range of item difficulties, items with the highest possible discriminating power were selected. For the most part it was possible to keep r_{bis} above .50.

A pilot test of the STEA was conducted with 58 fifth graders and 35 tenth graders in Savannah, Georgia, and 69 fifth graders and 53 tenth graders in Beeville, Texas.

Test Evaluation: Bias and Reliability

In the evaluation of a particular test, two questions need to be answered:

1. Does the test measure what it purports to measure, or does it measure something else?
2. Does the test measure what it purports to measure with reasonable accuracy?

The first question is a question of bias; the second is a question of degree of unbiased error, or lack of reliability.

With regard to the first question, the use of a well known and commonly used test relieves most of our anxieties about the content of the test. The 57 items used in each test were selected primarily on the basis of their high correlation with the other items in the longer test and because of their difficulty level. There is at best only a slight chance that the 57 items might represent a badly biased selection so that when combined into a single test they would fail to measure the principle components of the longer STEP battery.

The question of random error is more serious. Fundamentally, the question is, are 57 items enough to prevent the ability of the student from being swamped by random error?

The traditional method for analyzing such questions is to look at the correlations between the responses to various items and compute an overall reliability index. Since we are concerned, however, not with the reliability of individual scores, but of school means, this computation is not sufficient in itself. We have two additional techniques available to us: we can carry out an analysis similar to the computation of a reliability coefficient using school means, or we can carry out a cause and effect analysis of achievement to find out how much variance can be explained by causes of achievement, and how much remains possibly due to random error.

In terms of traditional individual-level reliability analysis, the shortened STEP test performs rather well. The reliability coefficients for tenth grade and fifth grade black and white boys and girls are shown in Table D.1. All of the reliability coefficients in this table are high enough to suggest that there should be no problems with the test. The values for black students are not as high as those for whites, especially at the tenth grade level. This is apparently because the test is too difficult. The means and standard deviations for the individual student scores

TABLE D.1

COEFFICIENTS OF GENERALIZABILITY (KR-20)

(For the STEA Test, Based on the ESAP-II
Evaluation Sample--NORC Sample)

Total Test	
<u>Fifth Grade:</u>	
White male	.94
White female	.92
Black male	.89
Black female	.90
<u>Tenth Grade:</u>	
White male	.91
White female	.90
Black male	.85
Black female	.84

Note: N = 1,000 for each group.

are given in Table D.2, and indicate that the mean score of black students is well below that of white students; furthermore, it is close to the zero-point of the test.

One problem with a short test is that it is difficult to use it to measure a wide range of abilities. STEA does perhaps as good a job in this respect as possible. Figure D.1, which gives the frequency distribution of individual fifth grade scores, shows a virtually flat distribution from one end of the scale to the other, with 5 per cent of the students making negative scores after correction for guessing. The test is perhaps more difficult than it might be; the alternative would be to make the test too easy for a significant number of students--and this might be preferable.

If we were to carry out an analogous analysis of reliability of the school means, we would obtain reliability coefficients that are extremely high. This is suggested by the data presented in Tables D.3 and D.4, which show the intercorrelations between the scores of the five subtests when means on the subtest are computed at the school level for one race. Each subtest is based on ten to fifteen questions, and the various subtests are in fact efforts to measure different components of achievement. Therefore we should expect that both random error and the differences in intent for each subtest should reduce the correlations. In fact, the correlations among the five subtests are quite high. Thus, we have no cause to be concerned about the quality of the tests.

When we subject the tests to the last requirement mentioned above--the ability of causal factors to predict achievement--an unfortunate problem arises. Table D.5 shows that the overall measure of the background of the black students in elementary schools does not predict their achievement nearly so well as background predicts achievement at the other grades. Furthermore, in Table D.6 we see that an attitude variable that does an extremely good job of predicting achievement for white students is only moderately good for tenth grade blacks, and quite poor for fifth grade blacks. Whether social background or the locus of control attitude is used, approximately one-fourth as much variance can be explained at the fifth grade level for black students as can be explained at the tenth grade level.

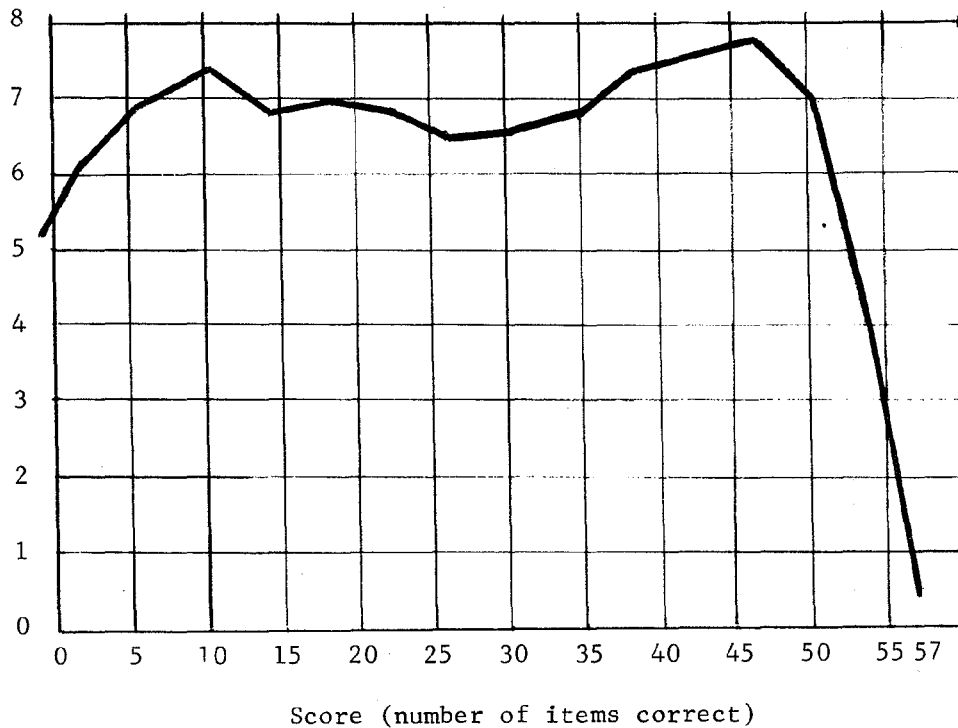
TABLE D.2

MEANS AND STANDARD DEVIATION OF THE ACHIEVEMENT TESTS, BY GRADE
AND RACE, AT THE INDIVIDUAL AND SCHOOL LEVEL

Grade and Race	Individual Level		School Level (Weighted)		Per Cent Variance Between Schools
	Mean	Standard Deviation	Mean	Standard Deviation	
Tenth grade white	269	134.4	266	60.9	20.5
Fifth grade white	341	147	332	63.9	19.0
Tenth grade black	116	105	118	46.5	19.6
Fifth grade black	170	132	171	53.3	16.2

Note: Score is 10 times the number of correct answers less
correction for guessing.

Per Cent
of all
Students



Notes: Maximum score is 57
Minimum score is negative due to correction
for guessing
N = 21,841

Fig. D.1--Distribution of Test Scores for All Fifth Grade Students

TABLE D. 3

INTERCORRELATIONS BETWEEN SUBTESTS FOR TENTH GRADERS,
BASED ON SCHOOLS WITH SIX OR MORE STUDENTS
OF EACH RACE TAKING TESTS

Subtest	Subtest				
	Reading	Language	Math Concepts	Math Computation	Science
<u>Whites:</u>					
Reading . .	x	.78	.75	.76	.80
Language . .		x	.74	.73	.71
Math concepts .			x	.88	.82
Math computation . .				x	.82
Science . .					x
Correlation with total score . .	.89	.89	.93	.92	.90
<u>Blacks:</u>					
Reading . .	x	.66	.57	.55	.59
Language . .		x	.61	.58	.53
Math concepts .			x	.64	.57
Math computation . .				x	.54
Science . .					x
Correlation with total score . .	.83	.87	.82	.78	.75

TABLE D.4

INTERCORRELATIONS BETWEEN SUBTESTS FOR FIFTH GRADERS,
BASED ON SCHOOLS WITH SIX OR MORE STUDENTS
OF EACH RACE TAKING TESTS

Subtest	Subtest				
	Reading	Language	Math Concepts	Math Computation	Science
<u>Whites:</u>					
Reading . .	x	.78	.68	.81	.82
Language . .		x	.73	.78	.80
Math concepts .			x	.80	.75
Math computation . .				x	.87
Science . .					x
Correlation with total score . .	.89	.92	.87	.93	.93
<u>Blacks:</u>					
Reading . .	x	.57	.50	.60	.62
Language . .		x	.64	.59	.58
Math concepts .			x	.68	.61
Math computation . .				x	.65
Science . .					x
Correlation with total score . .	.76	.85	.85	.83	.81

TABLE D. 5

CORRELATION OF SES SCALE WITH ACHIEVEMENT,
FOR EACH GRADE AND RACE

Grade and Race	School Level	Individual Level	N
Tenth grade white . .	.62	.27	6,165
Fifth grade white . .	.54	.27	1,038
Tenth grade black . .	.54	.24	3,492
Fifth grade black . .	.30	.17	7,072

TABLE D. 6

CORRELATION OF LOCUS OF CONTROL AND ACHIEVEMENT,
FOR EACH GRADE AND RACE

Grade and Race	School Level	Individual Level
Tenth grade white . . .	.51	.30
Fifth grade white . . .	.54	.28
Tenth grade black . . .	.28	.27
Fifth grade black . . .	.13	.12

There seem to be two reasons for this problem: (1) the correlation between social status and achievement is low for fifth grade blacks; (2) the fifth grade attitude test has a large amount of random error for black students. One reason why we believe that the problem is the measures of SES **and not the test for** this group of students is that when we look at the per cent of variance that can be explained by school--the amount that might conceivably be attributable to a "school effect," shown in Table D.2--we see that the amount of variance between schools for the fifth grade test is only slightly lower than that for the tenth grade test.

Another way to answer the questions, "Does the STEA test distinguish between fifth grade black student bodies?" and "Are the student-reported characteristics of the school the weak link in the fifth grade black analysis?" is to look at regression equations analyzing achievement. The regression equations presented in Appendix B indicate that only 17 per cent of the variance in fifth grade black achievement at the school level can be explained by student-reported social class characteristics. For fifth grade white students, the corresponding per cent of variance explained is 53 per cent. However, when we turn to characteristics of the school reported by the teachers and principal, we find that these variables predict fifth grade black performance as well as they do fifth grade white. If the fifth grade black achievement test had a large amount of error, we would not be able to find significant correlates of achievement in the teacher and principal data. That we can find these correlates in the teacher and principal data but not in the student data is further evidence that, taken together, the fifth grade black attitude questionnaire and the fifth grade black report of social class characteristics is the weak link. Of course, the fact that a small amount of variance in the fifth grade black test has been explained by social class means that it is easier for principal- and teacher-reported variables to "work." In order to allow for this factor, we estimated how much unexplained variance there was in the fifth grade black and fifth grade white tests. For fifth grade whites, perhaps one-fourth of the variance between the schools is merely sampling error resulting from the small number of white students interviewed in some schools. This, plus the large amount of variance explained by social status characteristics, means that there is perhaps one-half as much variance in the

fifth grade white test to explain as there is the fifth grade black test. Therefore, a variable that enters the regression equation with a standardized regression coefficient of .1 on the black test would be expected to enter the white regression equation with a regression coefficient of only .07. In our analysis, however, we found 15 variables that would enter the fifth grade black equation with a beta of .1, and 15 that would enter the fifth grade white equation with a variance of .07. This finding suggests that the principal and teacher variables are predicting black achievement just as well as they are predicting white achievement.

Tables D.7, D.8, D.9, and D.10 present the correlations between the components of the SES scale and the subtests of the STEA test. The first three tables--those for tenth grade black, tenth grade white, and fifth grade white--are generally similar. They tend to show that the percentage of students living with both parents is a weak predictor of achievement. In addition, they tend to show that all the subtests are approximately equally well correlated with various indicators of social class. The fifth grade black test (Table D.10) is more interesting. First, we see that the only correlations between SES items and test scores that are above .3 are for the reading subtest. However, if the reader refers back to Table D.4, he will see that the reading subtest is itself poorly correlated with the total test score. Apparently, the achievement test for fifth grade blacks has a two-factor solution, with the reading subtest comprising one of the factors and the other four tests comprising the other factor. Thus, one of the reasons why the social status variables predict achievement poorly for the fifth grade black subgroup is the presence of this peculiar split in the achievement test.

It thus seems likely that measurement error is not the whole story; social status simply does not predict achievement for fifth grade blacks as well as it does for the other groups. One hypothesis comes to mind that might explain the peculiar results for this one subgroup. Obviously, blacks are different from whites, and elementary school students are different from high school students. Social status should predict achievement for two reasons: first, native ability is highly correlated with social class; and second, higher status students are less likely to be aggressive or

TABLE D.7

CORRELATIONS BETWEEN INDIVIDUAL SES ITEMS AND SUBTEST SCORES
FOR TENTH GRADE WHITES

Item	SES Variable						
	Total SES	Mother's Educa- tion	Own Home	Live With Both Parents	Own Air Condi- tioner	Mean Number of Siblings	Daily News- paper
<u>Subtest:</u>							
Reading . .	.62	.64	.16	.23	.36	-.43	.43
Language . .	.53	.47	.24	.32	.25	-.36	.35
Math con- cepts. . .	.50	.50	.17	.23	.31	-.32	.31
Math compu- tation . .	.49	.50	.11	.21	.30	-.33	.32
Science. . .	.59	.62	.19	.25	.33	-.38	.37
Total achieve- ment . . .	.60	.59	.20	.28	.34	-.40	.38
Total SES .	x	.84	.41	.30	.72	-.65	.73
<u>Individual SES:</u>							
Mother's education		x	.26	.09	.59	-.44	.62
Own home . .			x	.23	.08	-.11	.07
Live with both parents .				x	-.00	-.12	.07
Own air condi- tioner . .					x	-.26	.44
Siblings . .						x	-.52
Newspaper .							x

TABLE D.8

CORRELATIONS BETWEEN INDIVIDUAL SES ITEMS AND SUBTEST SCORES
FOR TENTH GRADE BLACKS

Item	SES Variable						
	Total SES	Mother's Educa- tion	Own Home	Live With Both Parents	Own Air Condi- tioner	Mean Number of Siblings	Daily News paper
<u>Subtest:</u>							
Reading . . .	.53	.49	.07	.19	.40	-.36	.39
Language. . .	.44	.39	.02	.22	.36	-.31	.32
Math con- cepts . . .	.39	.35	.00	.17	.25	-.36	.24
Math compu- tation. . .	.43	.36	.11	.09	.34	-.34	.27
Science . . .	.31	.29	.18	.11	.21	-.19	.17
Total achieve- ment . . .	.52	.47	.07	.21	.40	-.39	.36
Total SES . .	x	.74	.28	.33	.78	-.70	.70
<u>Individual SES:</u>							
Mother's education .		x	.03	.09	.62	-.27	.53
Own home . .			x	.20	.04	-.48	-.12
Live with both parents . .				x	.07	.07	.04
Own air condi- tioner . .					x	-.00	.51
Siblings . .						x	-.50
Newspaper . .							x

TABLE D. 9
CORRELATIONS BETWEEN INDIVIDUAL SES ITEMS AND SUBTEST SCORES
FOR FIFTH GRADE WHITES

Item	Total SES	Food Stamps	News- paper	Live With Both Parents	Bicycle	Number of Siblings
<u>Subtest:</u>						
Reading . . .	.62	.34	.55	.25	.50	-.55
Language . . .	.61	.24	.53	.35	.52	-.47
Math concepts.	.44	.15	.38	.28	.36	-.38
Math computa- tion	.59	.27	.53	.30	.47	-.49
Science . . .	.61	.25	.54	.32	.50	-.47
Total achieve- ment	.63	.28	.55	.34	.52	-.51
Total SES . .	x	.55	.70	.60	.77	.70
<u>Individual SES:</u>						
Food stamps .		x	.32	.24	.37	-.31
Newspaper . .			x	.21	.49	-.50
Live with both parents . .				x	.43	-.16
Bicycle . . .					x	-.51
Number of siblings . .						x

TABLE D.10

CORRELATIONS BETWEEN INDIVIDUAL SES ITEMS AND SUBTEST SCORES
FOR FIFTH GRADE BLACKS

Item	Total SES	Food Stamps	News- paper	Live With Both Parents	Bicycle	Number of Siblings
<u>Subtest:</u>						
Reading . . .	.16	.41	.36	.20	.34	-.32
Language . . .	.09	.30	.19	.13	.12	-.16
Math concepts.	.00	.27	.14	.07	.10	-.12
Math computa- tion . . .	.11	.30	.17	.12	.22	-.23
Science . . .	.14	.24	.25	.02	.17	-.20
Total achieve- ment . . .	.11	.36	.26	.12	.20	-.23
Total SES . .	x	.71	.66	.50	.59	-.56
<u>Individual SES:</u>						
Food Stamps .		x	.40	.32	.30	-.32
Newspaper . .			x	.11	.37	-.38
Live with both parents . .				x	.11	.04
Bicycle . . .					x	-.36
Number of siblings . .						x

delinquent. For blacks, however, we suspect that there is not a strong correlation between social class and native ability, especially in the South, where opportunities for occupational advancement are still sharply limited for blacks. There is less opportunity for blacks of superior ability to locate jobs appropriate to that ability. One might expect to find many black sharecroppers' sons with as much native ability as black doctors' sons. For whites, we expect to find all aspects of social class working concurrently; that is, that middle class students have more native ability, fewer needs to act aggressively in the classroom, and more support for learning in the home. For blacks, however, we expect to find that middle class students have fewer problems with aggression and receive more educational support in the home, but not that they are necessarily of clearly superior learning ability. In high school, where adolescent delinquency is a critical problem, we might expect to find the middle-class student sorting himself out from his equally intelligent lower-class peers as they become more delinquent and he plays the role of the college-oriented student. At the elementary school level, where delinquency is not such a problem and all students like school reasonably well, the middle-class student has the advantage of coming from a more literate family and thus being able to read better. His lower-class classmates, however, often have as strong a native ability and consequently can be expected to do as well on other parts of the test. This is a highly speculative hypothesis, but it could be subject to test in some future study, and is therefore worth stating at this time.

A Note: General and Specific Components of the Achievement Subtest

The fact that we can correlate white and black scores on the test gives us a simple device to determine the degree to which the different subtests are related to school variables. If a subtest has a relatively

low white-black correlation, we can argue that the test is not measuring materials specific to the curriculum of the school. If the correlation is high, we can argue that the cause of the high correlation is the common school experience of the white and black student. Table D.11 gives the intercorrelations between the white and black scores on all the tests. First, we see that the scores on the main diagonal are higher than those off the diagonal in all cases. This is as it should be. However, we also see that in two cases--the science test and the arithmetic test--the diagonal entries are not much higher than the off-diagonal entries. The correlation between the black and white science test scores is as high as the correlation between the math concepts test and the black science score. This would lead us to conclude that for the fifth grade, the science and math tests are not strongly affected by differences between schools in the way these subjects are taught. On the other hand, the language arts subtest and the math concepts subtest are the most school-specific. Surprisingly, the reading test also shows a slightly higher correlation than the science and arithmetic tests. However, this may be due to the fact that in the fifth grade, the reading test is more closely correlated with social class, and black and white social class are correlated in the schools.

TABLE D.11
CORRELATIONS OF BLACK AND WHITE SUBTEST SCORES
(Mean for Fifth Grade)

	White					
	Reading	Language	Science	Math Concepts	Arithmetic	Total
Black Reading	.28	.25	.22	.18	.20	.21
Black Language	.21	.30	.17	.18	.16	.18
Black Science	.23	.23	.24	.24	.22	.23
Black Math Concepts	.17	.23	.16	.33	.17	.18
Black Arithmetic	.24	.22	.21	.22	.24	.22
Black Total	.21	.23	.19	.20	.19	.29

APPENDIX E

SCALES

TABLE E.1

TENTH GRADE SOCIAL CLASS SCALE

Part A: Questions and Weights^a

Questions	Coding Weights
How much education does your mother have? (If you don't know, it's all right to guess.)	
Did not go to high school	0
Went to high school but didn't graduate	2
Graduated from high school	4
Attended college	6
Blank	2
Do you live with both of your parents?	
Yes	4
No	0
Blank	0
How many brothers and sisters do you have?	
One	8
Two	7
Three	6
Four	5
Five	4
Six	3
Seven	2
Eight or more	1
None	9
Blank	6
Does your family get a newspaper regularly?	
Yes	4
No	0
Blank	0
Does your family own their home?	
Yes	4
No	0
Blank	0
Does your home have an air conditioner?	
Yes	4
No	0
Blank	0

^aCoding scheme: Sum weighted responses and divide by 6. Do not score if 2 or more not answered. Enter whole digit plus first decimal.

TABLE E.1--Continued

Part B: Item Means and Standard Deviations

Item	Tenth Grade Black (N=145)		Tenth Grade White (N=160)	
	Mean	Standard Deviation	Mean	Standard Deviation
Mother's education . .	36.35	20.00	62.42	18.23
Live with both parents.	60.15	16.70	82.84	9.96
Number of siblings . .	47.70	8.84	.29	.06
Read newspaper	66.80	21.12	82.27	13.29
Own home	61.41	18.37	78.57	12.45
Own air conditioner . .	29.47	23.27	70.77	19.04

Part C: Item Intercorrelations

(Tenth grade white above diagonal, tenth grade black below)

Item	Mother's education	Live with both parents	Number of siblings	Read news- paper	Own home	Own air condi- tioner
Mother's education .		.12	-.45	.50	.24	.57
Live with both parents . .	.18		-.20	.14	.33	-.03
Number of siblings .	-.48	.02		-.48	-.12	-.30
Read newspaper .	.48	.07	-.44		.10	.42
Own home . .	.08	.24	.10	-.09		.08
Own air condi- tioner . .	.56	.06	-.46	.46	.04	

TABLE E.2

FIFTH GRADE SOCIAL CLASS SCALE

Part A: Questions and Weights^a

Questions	Coding Weights
Do you own a bicycle?	
Yes	4
No	0
Blank	0
How many brothers and sisters do you have?	
One	8
Two	7
Three	6
Four	5
Five	4
Six	3
Seven	2
Eight or more	1
None	9
Blank	6
Do you live with both of your parents?	
Yes	4
No	0
Blank	0
Did anyone at home read to you when you were little-- before you started school?	
Yes	4
No	0
Blank	0
Does your family own their home?	
Yes	4
No	0
Blank	0
Does your family buy groceries with food stamps or get surplus food?	
Yes	0
No	4
Blank	0
Does your family get a newspaper regularly?	
Yes	4
No	0
Blank	0

^aCoding scheme: Sum weighted responses and divide by 7. If 2 or more not answered, do not score.

TABLE E.2--Continued

Part B: Item Means and Standard Deviations

Item	Fifth Grade Black (N=269)		Fifth Grade White (N=299)	
	Mean	Standard Deviation	Mean	Standard Deviation
Child owns a bicycle . . .	65.0706	15.365	86.3017	11.4920
Number of siblings	4.418	.873	2.7945	.6143
Live with both parents . .	63.9316	16.0593	84.9390	10.6561
Own home	66.93	20.75	72.0966	17.6904
No food stamps	64.455	21.874	84.8125	12.6633
Read newspaper	63.2528	21.2023	76.0821	16.6095

Part C: Item Intercorrelations

(Fifth grade white above diagonal, fifth grade black below)

Item	Own bicycle	Number of siblings	Live with both parents	Own home	No food stamps	Read news- paper
Own bicycle		-.47	.24	.34	.33	.38
Number of siblings	-.32		-.15	-.29	-.35	-.37
Live with both parents	.10	.04		.46	.21	.18
Own home	.13	.04	.35		.31	.31
No food stamps	.33	-.30	.32	.23		.26
Read news- papers	.31	-.39	.09	.03	.39	

TABLE E.3

COMMUNITY LEADERS' REPORT OF COMMUNITY CIVIL RIGHTS ACTIVITY

Part A: Questions and Weights^a

Questions	Coding Weights
How much civil rights activity ^b has there been in (NAME OF CITY OR COUNTY) in the past ten years? Would you say a great deal, a moderate amount, or relatively little?	
Great deal	3
Moderate amount	2
Relatively little (or none)	1
In some communities civil rights activity has resulted in trouble--meaning either very bitter feelings, or many arrests, violence on the part of police or demonstrators, or property damage. Has there been, in your judgement a great deal of trouble here in the past decade, some trouble, or almost none?	
Great deal	3
Some	2
Almost none (or none)	1

^aCoding scheme: Mean of civil rights activity score. If one not answered, do not score.

^bCivil rights activity can include: Committee presenting demands, filing a suit, demonstrations, or anything the respondent wants to consider as civil rights activity.

Part B: Means and Standard Deviations

	Fifth Grade	Tenth Grade
Mean	16.599	16.238
Standard deviation .	3.925	3.980

TABLE E.4

TEACHERS' ASSESSMENT OF WHITE/MINORITY GROUP STUDENTS' ABILITY

Part A: Questions and Weights^a

Questions	Coding Weights
What proportion of your (white/minority group) students would you say are performing adequately by the same standards?	
Almost all are doing adequate work	4
More than half are doing adequate work	3
Less than half are doing adequate work	2
Very few are doing adequate work	1
Does not apply	0
What proportion of your (white/minority group) students would you say have the potential to attend the largest state university in your state?	
Almost all	4
More than half	3
Less than half	2
Very few	1
Does not apply	0

^a Coding scheme: Sum weighted responses and divide by 2. Do not score if either not answered.

Part B: Means and Standard Deviations

	Fifth Grade	Tenth Grade
Mean	18.776	19.208
Standard deviation .	3.829	2.983

TABLE E.5

TEACHERS' REPORT OF TEACHER CONTACT WITH WHITE OR MINORITY GROUP STUDENTS
(Fifth Grade)

Part A: Questions and Weights^a

Questions	Coding Weights
We would like some additional information about two pupils in your class.	
First, think of the (white/minority group) student whose name is first in alphabetical order. Please answer each of the following about that child.	
Does that child talk to you a lot about what he or she is doing?	
Yes	1
No	0
Don't know	0
Does not apply	0
Does that child have a special interest in some school project?	
Yes	1
No	0
Don't know	0
Does not apply	0

^aCoding scheme: Sum weighted responses and divide by 2. If either blank, do not score.

Part B: Means and Standard Deviations

	Contact with:	
	White Students	Minority Students
Mean	5.296	3.709
Standard deviation .	1.815	1.419

TABLE E.6
TEACHERS' REPORT ON DISCUSSION ABOUT RACE

Part A: Questions and Weights^a

Questions	Coding Weights
Do you feel that you should let your students know how you feel about race relations, or would that be improper?	
I should let them know	2
That would be improper	1
How often do you have class discussions about race?	
Once a week or more	4
Once a month	3
Once every few months	2
No such discussions so far	1

^aCoding scheme: Sum weighted responses and divide by 2. If either blank, do not score.

Part B: Means and Standard Deviations

	Fifth Grade	Tenth Grade
Mean	16.906	18.052
Standard deviation .	2.619	2.596

TABLE E.7

TENTH GRADE STUDENT REPORTS OF CONTACT WITH OTHER RACE

Part A: Questions and Weights^a

Questions	Coding Weights
Think for a moment about the three students you talk with most often at this school. Are they the same race as you?	
Yes, all same race as me	1
No, one or more is from another race	4
Have you ever called a student of a different race on the phone?	
Yes	2
No	1
This school year, have you helped a student from another race with school work?	
Yes	2
No	1
This school year, have you asked a student from another race to help you with your homework?	
Yes	2
No	1

^aCoding scheme: Sum and divide by 4. If more than 1 blank, do not score.

TABLE E.7--Continued

Part B: Item Means and Standard Deviations

Item	Tenth Grade Black (N=145)		Tenth Grade White (N=160)	
	Mean	Standard Deviation	Mean	Standard Deviation
Talked with friends of other race	34.81	17.98	18.20	14.91
Phoned different race students	39.49	18.54	24.11	14.13
Helped different race students with homework	63.84	21.83	61.17	18.06
Asked different race students for homework help	49.65	22.66	32.23	16.39

Part C: Item Intercorrelations

(Tenth grade white above diagonal, tenth grade black below)

Item	Talked with friends of other race	Phoned different race students	Helped dif- ferent race students with homework	Asked differ- ent race students for homework help
Talked with friends of other race		.52	.53	.52
Phoned different race students	.24		.52	.58
Helped different race students with homework	.49	.40		.74
Asked different race students for homework help	.35	.45	.66	

TABLE E.8

LEVEL OF RACIAL TENSION
(Combined principal, teacher, and student reports)

Part A: Questions and Weights^a

Questions	Coding Weights
The amount of violence varies from community to community and school to school. Thinking about the entire current school year here at (NAME OF SCHOOL), how many instances of each of the following have occurred?	
A. <u>Principal Reports:</u> ^b	
A student being hurt in a fight seriously enough to require hospitalization?	
None	4
One	3
Two	2
Three	1
Four or more	0
A student being hurt seriously enough in a fight to require attention by a doctor or nurse?	
None	4
One	3
Two	2
Three	1
Four or more	0
A student's locker being broken into?	
None	4
One	3
Two	2
Three	1
Four or more	0
How many instances of a student being robbed by a gang or group of other students have occurred this school year?	
None	4
One	3
Two	2
Three	1
Four or more	0
A teacher being attacked by a student?	
None	4
One	3
Two	2
Three	1
Four or more	0
A robbery of school property worth over \$50?	
None	4
One	3
Two	2
Three	1
Four or more	0

Table E.8--Continued

Questions	Coding Weights
B. <u>Teacher Reports:</u> On the whole, how would you evaluate the way in which desegregation is working out in your school? Almost no problems Some minor problems Some serious problems Many serious problems Does not apply	Value is per cent answering "almost no problems" and "some minor problems"
C. <u>Teacher Reports:</u> Here is a list of things that have happened in some desegregated schools. Please indicate whether or not each of these things happened at your school. A greater amount of fighting than before desegregation? Yes No Does not apply	Value is per cent answering "yes"
D. <u>White Student Report</u> On the whole, how would you say things are working out with both blacks and whites in the school? Almost no problems Some minor problems Some serious problems Many serious problems School does not have both black and white students Blank	4 3 2 1 0 0
E. <u>Black Student Reports</u>^c The way things are going between blacks and whites in this school, do you think things will be better or worse next year? Better Same Worse School does not have both black and white students Blank	3 2 1 0 0

^aCoding scheme: Value of each was divided by standard deviation, then combined (A + B - C + D + E) for score.

^bCoding scheme: Sum and divide by 6. If 2 or more blanks, do not score.

^cSum and divide by 2. If either blank, do not score.

TABLE E.8--Continued

Part B: Item Means and Standard Deviations

Item	Tenth Grade Black (N=136)		Tenth Grade White (N=154)	
	Mean	Standard Deviation	Mean	Standard Deviation
Principal report of little violence	32.22	6.80	32.31	6.86
Teacher report of no problems	80.16	18.40	80.64	18.14
Teacher report of greater fighting	27.93	24.57	28.39	24.41
White race relations . . .	9.27	2.20	9.12	2.20
Black race relations . . .	8.78	2.65	8.75	2.50
Blacks attacking whites .	33.14	26.39	42.45	30.30
Whites attacking blacks .	25.06	22.92	14.25	14.82
Favoritism to blacks . . .	31.29	15.81	53.06	19.36
Favoritism to whites . . .	62.68	20.38	60.83	19.21
Tension problems	48.59	18.11	51.97	21.43

Part C: Item Intercorrelations

(Tenth grade white above diagonal, tenth grade black below)

	Little vio- lence	No prob- lem	Great- er fight- ing	Black race rela- tions	White race rela- tions	Blacks attack- ing whites	Whites attack- ing blacks	Favor- itism to blacks	Favor- itism to whites	Ten- sion prob- lems
Principal report of little violence		.43	-.32	.20	.30	-.47	-.38	-.12	-.27	-.30
Teacher re- port of no problems	.42		-.57	.39	.47	-.48	-.30	-.31	-.40	-.50
Teacher report of greater fighting	-.30	-.59		-.45	-.46	.55	.44	.27	.37	.47
Black race relations	.19	.40	-.47		.63	-.59	-.61	-.43	-.48	-.60
White race relations	.23	.41	-.45	.67		-.76	-.65	-.84	-.83	-.91
Blacks attack- ing whites	-.46	-.49	.58	-.65	-.58		.70	.54	.60	.74
Whites attack- ing blacks	-.13	-.29	.41	-.74	-.55	.66		.39	.37	.53
Favoritism to blacks	.03	-.24	.19	-.61	-.50	.24	.38		.62	.74
Favoritism to whites	-.24	-.29	.32	-.70	-.49	.40	.26	.22		.70
Tension problems	-.19	-.33	.39	-.72	-.38	.46	.36	.28	.43	

TABLE E.9

TEACHER ATTITUDES TOWARD INTEGRATED SCHOOLS

Part A: Questions and Values^a

Questions	Values
As far as you know, how do each of the following feel about desegregation?	
A) Most white teachers in this school:	
Like it very much	
Like it somewhat	Value is per
Do not care	cent answering
Dislike it somewhat	"Like it very
Dislike it very much	much" and "Like
Don't know	it somewhat."
Does not apply	
B) Most minority teachers in this school:	
(Same as above)	(Same as above)
C) Teacher prejudice (See Table E.10)	
D) Some people say that black students would really be better off in all-black schools. Others say that black students are better off in racially mixed schools. What do you think?	
Most black students are better off in all-black schools	Value is per
Most black students are better off in mixed schools	cent answering
	"mixed schools."
E) What about white students--do you think that white students are better off in all-white schools, or are they better off in racially mixed schools?	
Most white students are better off in all-white schools	Value is per
Most white students are better off in mixed schools	cent answering
	"mixed schools."

^aValue of each was divided by standard deviation, then summed (A + B + C + D + E) for score.

TABLE E.9--Continued

Part B: Item Means and Standard Deviations

Item	Fifth Grade		Tenth Grade	
	Mean	Standard Deviation	Mean	Standard Deviation
White teacher attitudes to desegregation .	32.89	22.56	27.40	20.11
Minority teacher attitudes to desegregation .	47.66	23.02	45.50	22.05
Teacher prejudice.	21.28	3.12	22.00	3.46
White students better off in mixed schools .	57.56	22.57	60.42	20.95
Black students better off in mixed schools .	74.29	22.01	73.49	18.01

TABLE E.10

TEACHER AND PRINCIPAL PREJUDICE SCORE^a

Part A: Questions and Weights^b

Questions	Coding Weights				
	Strongly agree	Agree somewhat	Disagree somewhat	Strongly disagree	Blank
Now I will read some statements other people have made. For each, please tell whether you strongly agree, agree somewhat, disagree somewhat, or strongly disagree.					
First, the amount of prejudice against minority groups in this country is highly exaggerated	1	2	3	4	2
You would like to live in an integrated neighborhood	4	3	2	1	3
The civil rights movement has done more good than harm	4	3	2	1	3
Blacks and whites should not be allowed to intermarry	1	2	3	4	2
If you have to choose one factor which accounts most for failure of the Negro to achieve equality, which would you choose--a lack of initiative and drive, or the restrictions imposed by a white society?					
A lack of initiative and drive			1		
Restrictions imposed by a white society			3		
Blank			2		

^aIdentical questions and scale used for teacher interview and principal interview.

^bCoding scheme: Sum and divide by 5. If more than 2 blank, do not score.

TABLE E.12

PRINCIPAL'S REPORT OF PROGRAMS

(Questions and Weights)^a

A) Now I want to ask you about some programs, courses, and personnel. First, please look at this list and tell me which of these programs you don't have here at (NAME OF SCHOOL). Now, let's go through the list of those you do have. Considering the size, composition, and needs of your particular student body, tell me for each one if it is large enough or too small.	Large enough . 1 Too small . . 2 None 3
Guidance counselors Social worker or home visitor Team teaching^b Teacher aides Teacher workshops or in-service training for teachers or teacher aides Remedial reading program Ungraded classrooms^b Demonstration or experimental classrooms^b Vocational training courses^c Minority group history or culture courses^c Extracurricular activities geared toward minority students^c Late bus for students who stay late for extracurricular activities^c Biracial advisory committee of students^c Special classrooms for underachievers Special classrooms for socially or emotionally maladjusted Achievement grouping of classrooms Achievement grouping within classrooms^b Major curriculum revisions Program for tutoring low achieving students Special program to increase parent-teacher contact (e.g., conferences)	Asked for Each Item Unless Response Was "None": B) Is that program available to (fifth/tenth) graders? Yes 4 No 5 C) Did the school have that program last year (1970-71)? Yes 6 No 7
Programs to improve intergroup relations among students Programs to improve intergroup relations among teachers Equipment for students to use, such as reading machines, tape recorders, video tape machines, etc.	(Weights are identical for each item.)

^aCoding schemes: Size of Program--if Col. A = 1 and Col. B = 4, then score 2.
if Col. A = 2 and Col. B = 4, then score 1.
if Col. A = 3 or Col. B = 5, then score 0.

Years of Program--if Col. B = 4 and Col. C = 6, then score 3.
if Col. B = 4 and Col. C = 7, then score 2.
if Col. B = 5 and Col. C = 6, then score 1.
if Col. B = 5 and Col. C = 7, then score 0.

^bFifth grade only.

^cTenth grade only.

TABLE E.13

PRINCIPAL'S REPORT OF SCHOOL SPECIALIST PERSONNEL

Questions	Value
First, I'd like to ask some questions about various categories of personnel at this school.	
How many full-time and part-time staff members in each of the categories on the card are currently working at this school?	
Remedial reading teacher	Value for each group (and for grand total) is number of full-time plus one-half the number of part-time staff.
Remedial math teacher	
Music or art teacher	
Drama or speech teacher	
Gym teacher or coach	
Vocational education teacher	
Counselor aides	
Guidance counselor	
Psychologist	
Social worker	
Speech therapist	
Teacher aides	
Library aide or clerk	
Librarian	
Nurse	
Audio-visual specialist	
Truant officer/home visitor	
Community relations specialist	
Administrator (not listed above)	
Other (What?)	
Total	

TABLE E.14

PRINCIPAL'S REPORT OF NEW SUPPLIES/EQUIPMENT

(Questions and Weights)^a

Questions	Coding Weights			
	A. 1971-72		B. 1970-71	
	Yes	No	Yes	No
A. During the 1971-72 school year, did this school receive any [ITEMS (1) - (6)]				
B. How about last year (1970-71), did this school receive any [ITEMS (1) - (7)]				
(1) School furnishings?	1	2	1	2
(2) Funds for renovation?	1	2	1	2
(3) Funds for additional space?	1	2	1	2
(4) More text books than usual?	1	2	1	2
(5) More testing materials than you usually do?	1	2	1	2
(6) Human or community relations literature?	1	2	1	2
(7) Buses?	1	2	1	2

^aCoding scheme: For each item where A equals 1 and B equals 1, score 3; where A equals 1 and B equals 2, score 2; where A equals 2 and B equals 1, score 1; where A equals 2 and B equals 2, score 0.

TABLE E.15

PRINCIPAL'S REPORT ON AMOUNT OF TRACKING (FIRST SCORE)

Part A: Questions and Weights^a

Questions	Coding Weights
When your present 10th graders were in 7th and 8th grades, approximately how many of them went to schools which had ability-grouping? Would you say almost all, over half, less than half, or very few?	
Almost all	4
Over half	3
Less than half	2
Very few	1
Here is a card which lists three ability-grouping procedures. Which best describes the ability-grouping procedure used in this school?	
Students are placed into programs--college preparatory, vocational, etc., by their own choice.	
Students are placed into programs or academic tracks primarily on the basis of test scores or teachers' recommendations.	
We don't have academic programs or tracks, either because the school is too small or because we disapprove of tracking.	
*Approximately what proportion of the 10th grade academic classes--English, Math, Social Studies, etc.--are separated by program, so that students are in class only with students in their ability-group level or program?	
All	4
More than half	3
About half	2
Less than half	1
*Are the non-academic classes, such as home room, gym, health, music, art--separated by ability-group levels or tracks?	
Yes, all are separated	3
Some are separated	2
None are separated	1
*How many different levels of 10th grade English are there in this school?	
One	1
Two	2
Three	3
Four	4
Five	5
Six	6
Seven or more	7

^aCoding scheme: Sum and divide by 4. If more than 2 blanks, do not score.

* Asked if school had tracking.

Part B: Means and Standard Deviations

	Mean	Standard Deviation
Tenth grade . . .	26.645	9.740

APPENDIX F

SAMPLING OF SCHOOL DISTRICTS, EXPERIMENTAL-CONTROL PAIRS, AND SUPPLEMENTARY SCHOOLS

The sample consists of 555 schools, selected from 103 school districts in the South that received ESAP funds. ESAP funds were awarded at several different times during the summer of 1971; each time an award was made, a group of school districts (LEAs) were selected by sampling.

The strategy of the sampling was to stratify the LEAs by size and percentage minority, sampling each stratum with equal probability. Since large districts and districts with large percentage black enrollments were more likely to qualify for ESAP, the decision to sample with equal proportions from all strata at first seemed likely to produce enough large school districts for analysis. After the first group of ESAP awards were sampled, however, we decided to sample with certainty all school districts with enrollments of over 10,000 after that. In addition, we assumed that approximately 40 per cent of the districts sampled would be dropped from the final study for one reason or another. For example, districts in which four or fewer schools would receive ESAP funds would be dropped from the study because the selection of a control school would be somewhat more difficult under these circumstances. In addition, we assumed that some fraction--on the order of 25 per cent--would refuse to participate in the study. Consequently, a final sample of 173 school districts was selected. Fifty-three per cent of the school districts containing less than 10,000 students were sampled; 75 per cent of all districts with enrollments over 10,000 were sampled. The distribution of the final sample of LEAs by percentage minority and school enrollment size is shown in Table F.1.

TABLE F.1

DISTRIBUTION OF FINAL SAMPLE (LEAs) BY PER CENT
BLACK AND BY SCHOOL ENROLLMENT

Per Cent Minority	Enrollment			
	0-9,999	10,000-24,999	25,000+	Total
45+	94	9	9	112
	49	7	6	62
30-44	70	19	12	101
	37	15	8	60
0-29	40	26	11	77
	23	21	7	51
Total	204	54	32	290
	109	43	21	173

Note: In each cell, the lower number is the sample, and the upper figure is the number eligible.

School districts were contacted by letter. The letter informed them that they had been awarded funds and stated that participation in the evaluation was a mandatory condition. As quickly as possible thereafter (usually within 10 days), the superintendent was contacted, told that an experimental design would be used for the evaluation, and asked to submit a list of schools that he would like to receive funds. He was further asked to group the schools in pairs on the basis of social characteristics. Exactly how he was to make this grouping was not specified, but most superintendents took this as an instruction to match on social class and racial composition of the schools. At this point, some school districts refused to participate in the evaluation. No doubt many superintendents realized that the power of the Office of Education to withdraw funds was essentially an empty weapon, as indeed it was; the ESAP legislation required districts to submit to evaluation, but said nothing about requiring the use of an experimental design.

Pairs of schools were sampled randomly from the school districts containing two or more pairs. One-half of the pairs (again, selected randomly) were designated as experimental-control pairs, and one of the two was randomly designated as not eligible for ESAP funds. The superintendents were notified by letter which schools would not be permitted to receive funds. Eighteen additional districts withdrew at this point, leaving a final sample of 107 school districts. Four of these school districts were dropped, some because the selected pair of schools was badly mismatched on racial composition and others because possible peculiarities in the selection process may have resulted in an unanticipated bias. In four cases, we finally decided to match an experimental school in one district with a control school in another district. These matches were always within the same state (usually within the same region within the state), and the superintendent of one of the districts was contacted for advice about the decision.

When these procedures were completed, one-half of the sample schools had been selected. The school districts had been designated and the experimental and control schools selected.

The next step was to select the additional 100 ESAP-funded high schools and 200 ESAP-funded elementary schools in order to increase the sample size for the cross-sectional regression analysis. These schools were selected from the same districts as the experimental-control schools, but with a slightly different set of sampling priorities. It was deemed necessary to increase the amount of variation in the racial composition of schools and to increase the number of schools in the study that were desegregating in the fall of 1971. Most of the schools in the sample were predominantly white but with a significant black minority. This meant that the study of desegregation would be hampered--there would be too many schools that were 60-90 per cent white and too few that were 50 per cent or more black, or less than 10 per cent black. In addition, there were only eight school districts in the sample that were undergoing a significant amount of desegregation. For these reasons, the additional 300 schools were sampled using procedures that differed from those used for the experimental-control schools.

If the additional 300 schools (we will call them the supplemental sample) had been selected in the same manner as the experimental and control schools, with every school having an equal probability of falling into the sample once the school districts had been selected, we would simply select "n" supplemental schools in a district that had "n" experimental and control schools. Instead, we divided the school districts into two strata. Stratum I consisted of the eight school districts in which at least one school had changed its racial composition significantly between the fall of 1970 and the fall of 1971. By "significantly," we mean that the population of the smallest ethnic group (white, black, or Mexican-American) doubled and also increased by 10 per cent. Thus, a change from 10 per cent black to 20 per cent black is significant, or a change from 2 per cent white to 12 per cent white is significant, but a change from 2 per cent to 4 per cent for any group is not, since that would not be a 10 per cent increase. This stratum consisted of a group of schools in the Upper South. We

decided to oversample the schools in Stratum I by a 4-3 ratio. Since there were 46 control and experimental elementary and high schools in these eight districts, and 234 in the remaining 92 districts of Stratum II, we selected 57 schools from Stratum I (a 24 per cent oversample) and 234 schools from Stratum II (an 11 per cent undersample) for the supplemental sample. Thus, 1.24 schools were selected for every control or experimental school in the desegregating LEAs in Stratum I, and .89 schools for every experimental or control school in the Stratum II LEAs.

After the total number of schools to be sampled from each school district had been determined as described above, the next step was to divide this sample into high schools and elementary schools, by designating two-thirds of the sample in each district as elementary schools and one-third as high schools. The schools were then drawn, and were weighted in order to overselect schools with certain kinds of racial experiences. Finally, schools were selected with probabilities proportional to these weights.

This sampling procedure occasionally fails; it requires, for example, that we select high schools from districts where all the ESAP funds went to elementary schools or where only two high schools exist and therefore had already been selected as experimental and control schools. In the final stage, we selected additional schools to bring the sample to completion by resampling all of the unselected high schools--sampling from each school district proportional to the number of schools already selected from that district, and again using the weights for racial experience indicated above. Note 1, at the end of this appendix, presents a more formal explanation of the sampling process for the supplemental sample outlined above.

The effect of this sampling procedure was to produce two intentional biases and one unintentional bias. First, there is a bias toward the selection of large school districts. Furthermore, since experimental and control schools were selected with constant probability,

those districts with more ESAP-funded schools would produce more schools in the final sample. Thus, schools in large urban districts are over-represented. The other intentional bias was the overselection of schools that were 50 per cent or more black, or 90 per cent or more white--schools that are underrepresented in the process of funding schools via ESAP.

The unintentional bias occurred as a result of the refusal to participate of approximately one-fourth of the school districts contacted; some of these districts did so after learning which school would be the control school. This means that the experimental-control design is seriously hampered since, for example, schools that had particularly effective parent groups pressing the school system, or schools perceived by the school superintendent as particularly needy, perhaps were not permitted to become control schools. Note 2, at the end of this appendix, discusses this problem in more detail. This circumstance also produces a bias resulting from the fact that those school superintendents least sympathetic to evaluation research would have no schools at all in the sample. Obviously, the final sample is unrepresentative of Southern desegregated schools, but the degree to which it is so cannot be analyzed. We do not know the effects of the sample losses; further, we do not know how the ESAP-funded schools differ from all Southern schools. For these reasons, we made no attempt to weight the sample (although we could have weighted the schools in the analysis so as to produce a sample representative of all ESAP-funded schools whose superintendent was willing to cooperate with the analysis). The fact that we did not weight the sample means that the simple frequency distribution of many of the variables should be interpreted cautiously, since we have no accurate way of knowing how these frequency distributions should be modified to represent the total sample. In our description of ESAP programs, we will weight the frequencies back to represent the total universe of ESAP-funded school districts with cooperative superintendents. Even here, results should be interpreted cautiously, since we do not know whether this particular universe of ESAP-funded schools would be representative of ESAP schools funded

the preceding year. In the correlational analysis in the rest of the report we will use unweighted results (or more correctly, results weighted only to correct for sampling error within the schools), since it is our opinion that the gains in representation of a weighted sample would be more than offset by the loss of statistical reliability.

The final ESAP sample was drawn from 11 states. In the most densely sampled state, 8.7 per cent of the universe of schools was selected. The number of schools sampled in each of the 11 states and the sampling ratios are shown in Table F.2.

TABLE F.2
NUMBER OF SCHOOLS SAMPLED AND
SAMPLING RATIOS, BY STATE

State	Sampled	State Sampling Ratios (Per Cent)
<u>Deep South:</u>		
State 1 . . .	39	2.7
State 2 . . .	35	3.6
State 3 . . .	44	2.3
State 4 . . .	88	6.4
State 5 . . .	104	8.7
<u>Peripheral South:</u>		
State 6 . . .	7	0.6
State 7 . . .	52	1.2
State 8 . . .	55	2.9
State 9 . . .	47	2.2
State 10 . .	52	2.8
State 11 . .	68	3.6

If the two largest school districts in each of 10 states (and one in the eleventh) are designated as representing the 21 largest districts stratified by state, we find that 110 of our sample schools are from these districts, representing a sampling ratio of 3.9 per cent. Thus the largest school districts are oversampled by slightly over 50 per cent.

Sampling of Community Leaders, Teachers, and Students

The four community leaders were interviewed in order to gain a measure of community opinion toward the school as well as a measure of community activity vis á vis race relations and school desegregation that would not be biased by the viewpoint of the school system. The four community leaders were selected so as to increase inter-informant agreement; the four were designed to be as representative as possible of the moderate political view of the community. The selection was made by first asking a black man listed on the school district biracial committee for that school district to consent to a telephone interview. If he refused, other black males were substituted until one interview was completed. This informant was then asked to designate a white business or professional man in the community whom he would recommend as a respondent. After this white man was interviewed, he in turn was asked to recommend a black woman respondent. Finally, the black woman was asked to designate the name of a white woman. Thus the four interviews always represented two blacks and two whites; in almost all cases, they represented two men and two women. Since every respondent was designated by someone of the opposite race, this form of snowball sampling minimized the possibility of a respondent of racist views, either white or black, being interviewed. These four interviews turned out to be very important in the analysis; for example, the pooled response for each community in reporting the total level of civil rights activity turned out to be an effective predictor in several of our analyses.

The 50 students were selected from three classes. At the elementary school level, three fifth grade classes were selected; at the high school level, three tenth grade English classes were selected.

Since we were not sure whether the schools were tracked by achievement or not (and were not sure whether such tracking would reflect a pro- or anti-black bias), we felt it was necessary to sample the classrooms after stratifying them by racial composition. Hence, the senior interviewer in the school was asked to obtain the racial composition of every fifth grade classroom or every tenth grade English class. After ranking them on a scale ranging from those classrooms with the fewest black students to those with the most, one classroom was selected from the center of the distribution and one from near each end, according to a preordained formula. The effect of this was to produce a sample that is very close to the racial composition of that grade and that minimizes the possibility of selecting (by sampling variability) unusually high or low achieving classes. In some schools with unusually large classes it was necessary to select only two classes, and in some very small schools there was only one fifth grade class.

The 10 teachers in the elementary school were sampled by first selecting the three teachers of the three classrooms in which the students were interviewed. Then other teachers were sampled, with an effort to select those teachers who were most likely to have had these same students in their classes. Thus, other fifth grade teachers were not interviewed, but fourth grade and third grade teachers were. If the school had a guidance counselor, that person was also interviewed. Finally, a remedial reading teacher, if present, was selected for interview, as was the gym teacher. The selection of this group of teachers was designed (1) to maximize the possibility of the surveyed students having been in contact with the teacher; (2) to maximize the data collection from those teachers whose behavior would be most likely to affect the entire school and the climate of school opinion among the staff.

At the tenth grade level, a similar pattern was used, with the exception that all teachers selected were teachers who taught mainly in the tenth grade. The three English teachers whose classes were being interviewed were selected for interview; in addition, three math teachers,

two history or social studies teachers, a gym teacher, and a counselor were interviewed. Various formulas for the substitution of alternates when these teachers were not available were worked out in advance.

Note 1: Selecting Supplementary Schools
in ESAP Evaluation Survey

This section describes the procedure for selecting those schools that are neither experimental nor control schools in the ESAP evaluation study. The sample of LEAs and the sample of control schools and experimental schools were selected by the Office of Education. For the sampling of the supplementary schools, the frame consisted of all of the schools, not already members of matched experimental-control pairs, located within 100 school districts. The LEAs were selected at a prior stage. Each district of unmatched schools constituted a stratum from which a number n_i of schools were selected ($i = 1, 2, \dots, 100$).

For purposes of determining overall sample sizes, the districts in turn were grouped into two super-strata, Stratum I consisting of 8 LEAs, and Stratum II consisting of the remaining 92.

1. It was decided that 57 schools would be selected out of N_I , the number of unmatched schools in Stratum I. From the N_{II} unmatched schools in Stratum II, a sample of 234 was desired.

2. In each district of Stratum I, the number n_i to be selected from District i was determined by an allocation of the 57 proportional to the number of matched schools in each district. The same method of allocation was used for the sample of 234 from Stratum II.

3. For a given District i , the desired sample n_i was further decomposed into n_{i1} and n_{i2} ($n_i = n_{i1} + n_{i2}$), where n_{i1} is the number of elementary schools to be selected from District i , and n_{i2} is the number of high schools to be selected. The sample n_i was allocated according to $n_{i1} = 2n_{i2}$.

4. Then the actual selection within each district was made from separate high school and elementary school substrata. Before selection, however, the schools in each stratum in the district (high school and elementary) were weighted in accordance with the following scheme:

	<u>Weight</u>
Schools experiencing significant racial change (as defined earlier)(in Stratum I districts only)	6
Schools of 1 per cent to 9 per cent minority (black, Mexican-American, etc.)	3
Schools of 10 per cent to 39 per cent minority	1
Schools of 40 per cent to 49 per cent minority	2
Schools of 60 per cent to 99 per cent minority	3

Then, selection was made for high schools and elementary schools independently, with probabilities proportional to the weights above.

5. As an example, let f_{ilj} be the selection rate for the i th elementary school in District i of Stratum I. Assume that there are N_i schools in all in that district, each carrying a weight based on racial experience, w_{ilj} or w_{i2j} . It follows that

$$f_{ilj} = \frac{w_{ilj} n_{il}}{\sum_j w_{ilj}}$$

where

$$n_{il} = \left(\frac{2}{3}\right) \left(\frac{N_i}{N_1}\right) (57)$$

6. There is a problem with this approach, in that there may be some values n_{i2} for which an insufficient number of high schools exist in the district. The method used to supplement the sample of high schools short by X units, was to select X out of the high schools already chosen in the super-stratum. Then, an additional high school was selected from the district in which the high school selected for the second time was located.

Note 2: The School Districts that Withdrew from the Study

It was possible for districts to drop out of the experimental design after they had been told which school was chosen as a control and would not receive ESAP money. Districts that refused to go along with this plan were still given their ESAP grant. If the school districts which refused to cooperate at this point did so because the control

school was particularly in need of funds, then the final sample of control schools would be biased in favor of richer schools.

Of the 173 districts that were initially selected, 18 asked to be dropped from the sample after controls were selected. All of these sent written requests to be dropped, and listed their reasons. One district indicated that ESAP had indeed chosen their poorest school as the control. None of the others gave this reason. Some said that school board members represented separate parts of the district, and leaving one school unfunded would create political tensions. Other districts said that there had been a lot of racial unrest in their area and that the funding scheme would only serve to rock the boat even more.

Most of the 18 superintendents felt ethically committed to giving every school an equal share of money. Some went on to say quite bluntly that if one school were left out of ESAP funding, they would make up the difference with Title I or local money.

Although it is possible that more of these 18 districts were reacting to the particular poverty of the control school, only one actually gave this as a reason. The others seemed to be reacting more to the local political situation and their own principles. On the basis of their statements, the control sample would not appear to be biased by the withdrawal of these districts.

APPENDIX G

CORRELATIONS BETWEEN PROGRAMS AND THE FACTOR ANALYSIS

This appendix presents the correlation matrices of the program variables used in this analysis, followed by a factor analysis of the programs.

The variables used in the analysis are described below. The first group of variables use the notation 729XPP, and refer to counts of the number of specialist (non-classroom teacher) personnel available in the school in 1972 computed on a per pupil basis. The variables ending in "Y" refer to the size of special programs in the school, and the variables ending in "Z" refer to purchases of materials and other tangible objects. The 729XPP variables are as follows:

RR729XPP	Remedial reading
RM729XPP	Remedial math
MU729XPP	Music and art teachers
GY729XPP	Gym teachers
VO729XPP	Vocational education instructors
CO729XPP	Counselor's aides
GU729XPP	Guidance counselors
PS729XPP	Psychologists
SO729XPP	Social workers
SP729XPP	Speech therapists
TE729XPP	Teacher's aides
LA729XPP	Library aides
LI729XPP	Librarian
NU729XPP	Nurses
AU729XPP	Audio-visual specialists
TR729XPP	Truant officers and home visitors
CR729XPP	Community relations specialists
AD729XPP	Administrators
DR729XPP	(High school only) drama and speech teachers

The "Y" variables are as follows:

GUIDSY Guidance counselors
SOCWSY Social work programs
TEAMSY (Elementary school only) team teaching
AIDESY Teacher's aides
TTRASYS Teaching training
READSY Remedial reading
UNGRSY (Elementary school only) ungraded classrooms
DEMNSY (Elementary school only) demonstration classes
UACHSY Special classrooms for underachievers
MALASY Special classrooms for maladjusted students
GRRMSY Grouping of classrooms by achievement
GRCLSY (Elementary school only) use of achievement grouping
within classrooms
CREVSY Curriculum revision
XACTSY (High school only) extracurricular activities
XBUSSY Late transportation for after school extracurricular activities
TUTRSY Tutoring programs
PARESY Parent community relations program
SRELSY Student intergroup relations
TRELSY Teacher intergroup relations programs
EQUPSY Instructional equipment for students to use

All of the above variables are coded 0 if the school has no program, 1 if the principal considers the program inadequate in size, and 2 if he considers it adequate in the factor analysis that follows. In the report, the variable is also coded as a simple yes-no variable and, in addition, on a scale from 3 to 0: 3 if the school has had the program for two years, 2 if the program is new this year, 1 if the program was in existence last year but since has been cancelled, and 0 if it had no program either year.

The "12Z" variables refer to tangible supplies, and are coded 0 if none were provided in the last two years, 1 if they were provided for one of the last two years, and 2 if they were provided for both of the last two years. The "12Z" variables are:

TEX12Z Text books
TST12Z Testing materials
LIT12Z Human relations literature
FUR12Z Furnishings
REN12Z Renovations
SPA12Z Space

In the tenth grade listing below, a variable TYPE99 is shown. This variable is coded 1 if the school is an experimental school and 0 if it is a control school which did not receive ESAP funds. Thus, its

correlation with other programs is an indication of the extent to which particular programs were concentrated in particular high schools, with a high correlation indicating a high concentration in the experimental schools.

TABLE G.1

CORRELATIONS BETWEEN PROGRAM VARIABLES, FIFTH GRADE

	KK729XPP	KM729XPP	MU729XPP	GY729XPP	VO729XPP	CU729XPP	GU729XPP	PS729XPP	SO729XPP	SP729XPP
KK729XPP	1.00000	0.40120	-0.02341	0.07030	0.26216	0.02595	0.17441	-0.00961	-0.06178	-0.09176
KM729XPP	0.40120	1.00000	-0.00828	0.18500	0.01762	0.01732	0.10939	-0.11258	-0.03690	-0.05419
MU729XPP	-0.02341	-0.00828	1.00000	0.56195	0.01504	0.07783	0.50559	0.29899	0.07865	0.43738
GY729XPP	0.07030	0.18500	0.56195	1.00000	0.12037	0.04120	0.46108	0.10735	0.03261	0.28643
VO729XPP	0.26216	0.01762	0.01504	0.12037	1.00000	0.00174	0.18842	0.01404	-0.03473	-0.04211
CU729XPP	0.02595	0.01732	0.07783	0.04120	0.00174	1.00000	0.09300	0.10920	0.07010	0.03599
GU729XPP	0.17441	0.10939	0.50559	0.46108	0.18842	0.09300	1.00000	0.00136	0.03285	0.21531
PS729XPP	-0.00961	-0.11258	0.29899	0.10735	0.01404	0.10920	0.00138	1.00000	0.28238	0.41011
SO729XPP	-0.06178	-0.03690	0.07865	0.03261	-0.03473	0.02010	0.03285	0.23239	1.00000	0.12042
SP729XPP	-0.09176	-0.05419	0.43738	0.28643	-0.04311	0.03999	0.21531	0.41011	0.12042	1.00000
TE729XPP	0.23057	0.10472	0.27403	0.11708	0.11474	0.10664	0.24695	0.15509	0.14893	0.12267
LA729XPP	0.09006	0.05745	0.02765	0.05364	-0.00306	-0.02181	-0.07425	0.08083	-0.01257	0.00966
LI729XPP	-0.01025	0.04110	0.55603	0.46947	-0.01678	0.03572	0.42294	0.21514	0.09106	0.41031
NE729XPP	0.11755	0.05116	0.43917	0.30375	0.09100	-0.00363	0.29937	0.22909	0.05942	0.21634
AU729XPP	0.09524	0.09499	0.05305	0.10968	0.17725	0.07328	0.09925	0.13531	0.11741	0.01365
TR729XPP	0.05936	0.00555	0.02998	0.05505	0.00233	-0.02011	-0.01426	0.18467	0.03653	0.19537
CP729XPP	-0.05022	-0.04625	0.03366	0.00158	0.02071	-0.01850	0.04274	0.06956	0.13441	0.07427
AD729XPP	0.11577	0.00594	0.50113	0.42150	0.01521	0.06320	0.45066	0.00511	-0.00073	0.36146
GUIDSY	0.06755	0.05571	0.05086	0.08810	0.07220	0.12836	0.58027	-0.05859	-0.04352	-0.06253
SOCESY	-0.05426	-0.07195	0.05137	0.04109	0.00645	0.07622	-0.00419	0.22724	0.37761	0.14741
TEACHSY	-0.05400	0.04025	0.06882	0.10008	0.01918	0.03742	0.07337	0.06792	0.12796	0.07515
AIDFSY	0.19521	0.05228	0.06519	0.06618	0.09244	0.04929	0.09866	0.01413	-0.10217	0.00284
TREASYS	-0.03354	0.04782	-0.02167	-0.09241	-0.04632	-0.13794	0.06786	-0.08985	0.02178	-0.10011
READSY	0.43070	0.24156	0.05025	0.13340	0.07017	0.06484	0.14912	-0.03205	-0.01355	-0.02775
UNGRSY	-0.06275	-0.02357	0.07612	0.01858	-0.03003	0.06740	0.10372	0.07891	0.03240	0.11156
DEMSY	-0.04781	0.05074	0.10388	0.01801	-0.00759	0.05443	0.02016	0.02759	0.04597	-0.04412
UACHSY	0.22073	0.20025	-0.01599	0.10414	0.03251	-0.00926	0.08374	0.01471	-0.06124	0.00230
MALASY	0.11517	0.19510	-0.00736	0.05012	0.00219	-0.01100	0.07808	0.05761	0.02724	-0.00238
GRMSY	0.10559	0.07390	0.02858	0.05054	0.10398	-0.02807	0.09772	0.05155	0.17727	-0.05214
GRCLSY	0.02110	-0.01576	0.03154	-0.04675	-0.02177	0.01339	0.05175	-0.03580	0.02360	0.00161
CRCSY	0.03404	-0.01275	0.07963	0.09378	0.04865	-0.04974	0.10941	-0.00680	0.11777	0.04209
TUISY	-0.03067	0.06402	0.00242	-0.04361	-0.03515	-0.03532	-0.03425	0.05411	0.04272	-0.05043
PAESY	-0.04096	0.00591	0.02727	0.04478	0.04991	-0.00502	-0.02607	-0.03510	0.08319	0.00031
SEFISY	-0.00561	0.02085	0.03793	0.05246	-0.02325	-0.01293	0.03612	0.09541	0.04393	0.00582
TEFLSY	0.06936	0.04079	0.02791	0.01215	0.01409	-0.07745	-0.00707	0.02090	0.12798	-0.03772
ECUPSY	-0.02259	-0.00675	0.04685	0.06556	-0.10137	-0.00020	0.07074	0.02403	0.06620	0.12250
TEX12Z	0.05785	-0.00263	0.07574	0.03482	0.06497	0.02175	0.11925	-0.01910	0.01778	0.01738
IST12Z	0.17352	0.09129	0.05379	-0.01347	0.13649	0.07403	0.21893	-0.03573	0.03370	-0.04560
LIT12Z	-0.07379	-0.00482	0.09242	0.10263	0.00301	0.00675	0.00737	0.12307	0.02581	0.11773
FUR12Z	0.05475	0.05196	0.04531	0.05482	0.05365	0.00723	0.03721	0.06260	0.03116	0.05530
REN12Z	0.01510	0.00089	0.08427	0.05641	0.00623	-0.02905	0.02902	0.10744	0.05961	0.04453
SPA12Z	0.06640	0.00051	-0.08037	-0.03635	0.04253	-0.09508	0.03053	0.03856	0.04488	-0.03657

TABLE G.1--Continued

	TE729XPP	LA729XPP	LI729XPP	NU729XPP	AU729XPP	TR729XPP	CR729XPP	AD729XPP	GUIDSY	SOCWSY
RF729XPP	0.23037	0.09008	-0.01825	0.11758	0.09924	0.05986	-0.05022	0.11577	0.08755	-0.05426
RM729XPP	0.10472	0.09743	0.04110	0.03118	0.09299	0.00533	-0.04623	0.00594	0.03671	-0.07195
MU729XPP	0.27403	0.02765	0.55603	0.43917	0.05305	0.02998	0.03368	0.50113	0.05686	0.05137
GY729XPP	0.11708	0.05364	0.46947	0.30875	0.10968	0.05505	0.00158	0.42150	0.06810	0.04109
VO729XPP	0.11474	-0.00306	-0.01678	0.09300	0.17725	0.00233	0.02071	0.01521	0.07220	0.00945
CO729XPP	-0.10084	-0.02161	0.03572	-0.00363	0.02338	-0.02011	-0.01350	0.05320	0.12836	0.07022
GU729XPP	0.24695	-0.07425	0.42294	0.29937	0.09325	-0.01426	0.04274	0.45066	0.56027	-0.00419
PS729XPP	0.15509	0.08083	0.21514	0.22809	0.13331	0.18467	0.06956	0.00611	-0.05859	0.22724
SO729XPP	0.14893	-0.01257	0.09106	0.05942	0.11341	0.03663	0.13441	-0.00073	-0.04352	0.37761
SP729XPP	0.12267	0.00986	0.41031	0.31634	0.06306	0.19337	0.07427	0.38146	-0.08253	0.14741
TE729XPP	1.00000	0.09740	0.18904	0.20579	0.02315	-0.00891	0.06066	0.30493	0.09734	0.00376
LA729XPP	0.09740	1.00000	-0.15657	0.01466	0.06417	-0.02123	-0.04562	0.00485	-0.05329	-0.01951
LI729XPP	0.18904	-0.15657	1.00000	0.33243	-0.02249	0.13213	0.03769	0.21161	-0.01537	0.07306
NU729XPP	0.20515	0.01466	0.33243	1.00000	0.06221	0.13737	0.04233	0.26360	0.00273	0.07789
AU729XPP	-0.00891	0.00417	-0.02249	0.06221	1.00000	0.08189	0.02615	0.02288	0.02921	0.12744
TR729XPP	0.06066	-0.02123	0.13213	0.13737	0.08189	1.00000	0.02343	0.01924	-0.03610	0.14912
CR729XPP	0.30493	-0.04562	0.03769	0.04233	0.02615	0.02343	1.00000	-0.01099	0.00435	0.09252
AD729XPP	0.09734	0.00485	0.31161	0.26360	0.02288	0.01924	-0.01099	1.00000	0.04535	-0.09708
GUIDSY	0.09734	-0.05329	-0.01537	0.00273	0.02921	-0.03610	0.00435	0.04535	1.00000	0.07483
SOCWSY	0.00376	-0.01951	0.07306	0.07789	0.12744	0.14912	0.09252	-0.09708	0.07483	1.00000
TEAMS	0.10784	0.00435	0.06870	0.08902	0.09329	-0.03794	-0.01783	0.06150	-0.01220	0.11518
AIGES	0.33086	0.01817	-0.00520	0.08772	0.02932	0.06711	-0.04058	0.07182	0.18183	-0.04842
TTRAS	0.01753	-0.07023	-0.01212	-0.00267	0.00546	-0.08281	0.02295	-0.06393	0.03452	-0.04760
REABS	0.19443	-0.03339	0.00072	0.09738	0.01160	-0.05484	0.03435	0.12258	0.17649	0.04611
UNGRS	0.11493	0.08837	0.01236	0.04689	0.05928	-0.08886	-0.02163	0.15536	0.05704	0.03100
DEMNS	0.12953	0.00529	0.01011	-0.03585	0.05287	-0.06793	-0.02481	0.00308	0.04302	0.04649
UACHS	0.14586	0.11014	0.00935	0.09630	0.12782	-0.03847	-0.03047	0.13431	0.05340	0.00699
MALAS	0.03403	0.18197	0.06566	-0.04926	0.18368	-0.04972	-0.04555	-0.02007	-0.01632	0.00814
GRAMS	0.13932	-0.13089	0.05592	-0.02090	0.16462	-0.03591	0.04476	-0.00112	0.10014	0.15936
GACLS	-0.03866	-0.02117	0.10385	0.02376	0.07561	0.01882	0.05638	0.01712	0.00747	0.09023
CRVVS	0.06240	-0.08923	0.02706	0.06732	0.15666	0.06500	-0.04731	0.10378	0.03032	0.08330
TUTPS	-0.04995	0.00706	0.01861	-0.06607	0.12010	-0.01385	-0.03716	-0.07605	0.10212	0.11112
PASES	0.01072	0.04423	0.03265	-0.06532	0.04615	-0.09491	0.04499	0.04317	-0.00939	0.05646
SRELS	-0.06433	0.03410	0.04006	0.03575	0.07866	-0.04299	-0.01041	-0.04801	0.05365	0.10320
TRLS	0.07439	0.03024	-0.00426	0.04127	0.04013	-0.08320	-0.04365	-0.02469	0.05020	0.08952
EQUPS	-0.03304	-0.06233	0.09957	-0.14333	0.05300	0.07075	0.02446	0.02697	0.08055	0.09257
TEX12Z	0.13329	-0.07414	0.05499	0.04599	-0.01904	0.05053	-0.01692	0.09625	0.05655	0.09317
TST12Z	0.24373	-0.10000	0.05541	0.06888	-0.05999	-0.07861	-0.03951	0.06997	0.21519	0.10334
LIT12Z	-0.02323	-0.04232	0.12043	0.02009	0.05270	-0.00648	0.01590	0.01987	0.00122	0.18537
FUR12Z	0.11274	-0.07883	0.08144	0.10569	-0.02909	0.11736	-0.00426	0.06405	0.02568	0.11753
REN12Z	0.01041	0.14393	0.04790	0.08901	0.12830	0.03755	-0.04685	0.04671	-0.01427	0.09402
SPA12Z	0.00902	-0.07657	-0.04395	-0.01489	0.05625	-0.00488	-0.05241	-0.00616	0.01486	0.06129

TABLE G.1--Continued

	TEAMS	AIDES	TTRAS	READS	UNGRS	DEMNS	UACHS	MALAS	GRFMS	GACLS
RP729XPP	-0.05400	0.19621	-0.03334	0.43070	-0.06273	-0.04761	0.22673	0.11317	0.16544	0.02110
RM729XPP	0.04623	0.05526	0.04782	0.24156	-0.02357	0.05074	0.20825	0.19610	0.07390	-0.01176
MU729XPP	0.00888	0.06519	-0.02167	0.05025	0.07612	0.10388	-0.01599	-0.00756	0.02658	0.03154
GY729XPP	0.10068	0.06618	-0.09241	0.13340	0.01858	0.01801	0.10414	0.05012	0.05094	-0.04475
VO729XPP	0.01618	0.05244	-0.04632	0.07017	-0.03003	-0.00859	0.03231	0.09219	0.10348	-0.02177
CO729XPP	0.03742	0.04927	-0.13794	0.06484	0.05740	0.05443	-0.00936	-0.01100	-0.02807	0.01389
GU729XPP	0.01337	0.05865	0.06786	0.14812	0.19372	0.02016	0.08374	0.07308	0.05772	0.01175
PS729XPP	0.06792	0.01423	-0.08935	-0.03205	0.07591	0.02759	0.01471	0.05761	0.05155	-0.02580
SO729XPP	0.12296	-0.10217	0.02178	-0.01355	0.03240	0.04597	-0.04124	0.02224	0.12727	0.02360
SP729XPP	0.02318	0.00284	-0.10011	-0.02775	0.11156	-0.04412	0.00830	-0.00828	-0.05214	0.00181
TE729XPP	0.10704	0.05888	0.01753	0.19445	0.11493	0.12698	0.14586	0.03465	0.13932	-0.03408
LA729XPP	0.00436	0.01817	-0.07025	-0.03539	0.06837	0.00529	0.11614	0.16197	-0.13049	-0.02117
LI729XPP	0.00870	-0.00520	-0.01212	0.00072	0.01236	0.01011	0.00935	0.06576	0.05502	0.11585
NU729XPP	0.08402	0.08772	-0.00267	0.09738	0.04689	-0.03585	0.09630	-0.04928	-0.02093	0.02176
AU729XPP	0.09329	0.02932	0.00546	0.08160	0.05928	0.05287	0.12782	0.16368	0.16462	0.02561
TR729XPP	-0.03794	0.00711	-0.08281	-0.05484	-0.03886	-0.06793	-0.03847	-0.04972	-0.03591	0.01882
CR729XPP	-0.01763	-0.04058	0.02295	0.03435	-0.02163	-0.02481	-0.03047	-0.04555	-0.06476	0.05038
AD729XPP	0.00150	0.07182	-0.06893	0.12258	0.15536	0.00808	0.13431	-0.02007	-0.00112	0.01712
GUIDS	-0.01220	0.18183	0.03452	0.17639	0.05704	0.04302	0.05340	-0.01632	0.10014	0.00787
SECWS	0.11518	-0.04842	-0.04760	0.04611	0.03100	0.04649	0.00699	0.00814	0.15986	0.05023
TEAMS	1.00000	0.12966	0.05492	0.09367	0.30416	0.33927	0.15699	0.16693	0.07630	0.07406
AIDES	0.12786	1.00000	-0.02204	0.27634	0.08143	0.10868	0.13885	0.02032	0.14238	0.01573
TTRAS	0.05492	-0.02204	1.00000	0.04637	0.01121	0.10409	0.00846	0.03358	-0.04454	0.14261
READS	0.04367	0.27634	0.04637	1.00000	-0.00466	0.03374	0.22031	-0.01050	0.23511	0.10212
UNGRS	0.30416	0.08143	0.01121	-0.00466	1.00000	0.23256	0.09128	0.01657	0.06787	0.01886
DEMNS	0.33927	0.10868	0.10409	0.03374	0.23256	1.00000	0.05551	0.06822	0.07701	0.07939
UACHS	0.15699	0.13885	0.00846	0.22031	0.09128	0.05551	1.00000	0.13902	0.18768	0.02125
MALAS	0.16693	0.02032	0.03358	-0.01090	0.01657	0.06822	0.18902	1.00000	0.10391	-0.00278
GRFMS	0.07630	0.14238	-0.04454	0.23511	0.06787	0.07701	0.18768	0.10391	1.00000	0.02674
GACLS	0.07406	0.01573	0.14261	0.10212	0.01886	0.07939	0.03125	-0.00228	0.23511	1.00000
CFEVS	0.30005	0.05105	0.08609	0.05117	0.22598	0.24116	0.09965	0.04034	0.10883	0.02493
TUTRS	0.17385	0.11610	0.07499	0.06830	0.09750	0.15258	0.11032	0.02312	0.03967	0.05580
PARFS	0.20515	-0.04805	0.32689	0.05102	0.15784	0.19606	0.08539	0.05150	0.04120	0.13756
SRELS	0.16724	0.05620	0.09743	0.08192	0.14592	0.21018	0.09721	-0.01404	0.06180	0.05192
TRELS	0.11034	0.05235	0.24696	0.09773	0.11557	0.13659	0.06113	0.01652	0.03795	0.01417
ECUPS	0.01664	0.10205	0.00309	0.06039	0.02058	0.09509	0.02409	0.04364	0.05125	0.17596
TFX12Z	0.15461	0.15400	0.01860	0.07905	0.01068	0.13041	0.08712	0.03905	0.10550	0.05154
TST12Z	0.02000	0.22370	0.00310	0.21376	0.09136	0.07056	0.08050	-0.02658	0.14523	0.02414
LIT12Z	0.16104	0.09874	0.00418	0.06821	0.03454	0.16565	0.01664	-0.09448	0.03563	0.07554
FUR12Z	0.07170	0.07127	-0.06743	0.20857	0.05418	0.06605	0.01528	-0.01204	0.02133	0.03870
REN12Z	0.10991	0.02940	0.00643	0.06457	0.02038	0.04516	0.19865	0.12240	0.03228	0.02137
SPA12Z	0.06309	-0.02636	0.03701	0.03987	0.03461	0.07300	0.06312	0.03659	0.05893	0.02557

TABLE G.1--Continued

	CREVSY	TUTRSY	PARFSY	SRELSY	TRELSY	EQUFSY	TEX12Z	TST12Z	LIT12Z	FUR12Z
RR729XPP	0.03404	-0.03007	-0.04098	-0.00581	0.06986	-0.02239	0.02769	0.17382	-0.07879	0.04975
KM729XPP	-0.01273	0.08402	0.00551	0.02686	0.04079	-0.03673	-0.00266	0.09129	-0.08482	0.03198
MU729XPP	0.07983	0.00242	0.02727	0.03793	0.02791	0.04685	0.07574	0.05379	0.00242	0.04531
GY729XPP	0.09378	-0.04361	0.04478	0.05246	0.01215	0.06556	0.03482	-0.01347	0.10263	0.05482
VQ729XPP	0.04683	-0.03515	0.04991	-0.02325	0.01409	-0.10137	0.08497	0.13649	0.00301	0.05265
CG729XPP	-0.04974	0.03532	-0.00502	-0.01293	-0.07745	-0.00020	0.02175	0.07403	0.00675	0.00723
GU729XPP	0.10941	-0.03425	-0.02697	0.03612	-0.00707	0.07074	0.11925	0.21893	0.00737	0.03721
PS729XPP	-0.00680	0.05411	-0.03510	0.09541	0.02090	0.02403	-0.01910	-0.03573	0.12307	0.00260
SO729XPP	0.11777	0.04272	0.08319	0.09307	0.12798	0.06620	0.01678	0.03370	0.02561	0.03116
SP729XPP	0.04809	-0.03963	0.00001	0.00562	-0.03272	0.13250	0.01738	-0.04560	0.11673	0.05580
TE729XPP	0.06340	-0.04595	0.01672	-0.06433	0.07439	-0.03304	0.12329	0.24373	-0.02323	0.11274
LA729XPP	-0.00923	0.00708	0.04425	0.03418	0.05024	-0.06255	-0.07414	-0.10860	-0.04262	-0.07663
LI729XPP	0.02708	0.01801	0.03265	0.04006	-0.00426	0.09557	0.05490	-0.05541	0.12643	0.08144
NU729XPP	0.08782	-0.06807	-0.06532	0.03575	0.04127	-0.14333	0.04599	0.06888	0.02099	0.10569
AU729XPP	0.15980	0.12010	0.04615	0.07866	0.06013	0.05300	-0.01904	-0.05999	0.05270	-0.02909
TR729XPP	0.00900	-0.01369	-0.09491	-0.04299	-0.08330	0.07075	0.05053	-0.07861	-0.00645	0.11736
CF729XPP	-0.04731	-0.03710	0.04499	-0.01041	-0.04085	0.02446	-0.01692	-0.03451	0.01590	-0.00426
AD729XPP	0.10078	-0.07805	0.04317	-0.04801	-0.02469	0.02697	0.08625	0.06997	0.01987	0.06405
GUIDSY	0.03032	0.10212	-0.00939	0.05365	0.05820	0.08055	0.08955	0.21519	0.00122	0.02568
SOCWSY	0.08330	0.11112	0.05646	0.10320	0.08552	0.09257	0.09317	0.10384	0.19537	0.11753
TEAMSY	0.00005	0.17365	0.20515	0.18724	0.11034	0.01664	0.15461	0.02666	0.16104	0.07176
AIDFSY	0.05103	0.11610	-0.04605	0.03620	0.00235	0.10205	0.15400	0.22376	0.09874	0.07127
TIDFSY	0.00809	0.07487	0.32639	0.09743	0.24686	0.00309	0.01850	0.00310	0.00419	-0.00743
REAFSY	0.05117	0.08830	0.05102	0.08192	0.09773	0.08079	0.07905	0.21376	0.05821	0.20557
UNGRSY	0.22598	0.09750	0.15784	0.14592	0.11557	0.02058	0.01068	0.08136	0.03454	0.05418
DEMNSY	0.24116	0.15256	0.19606	0.21018	0.13659	0.09509	0.13041	0.07096	0.16965	0.06605
UACHSY	0.09985	0.11032	0.08589	0.09721	0.06113	0.02809	0.08712	0.08050	0.01664	0.01528
MALASY	0.04034	0.02312	0.05190	-0.01404	0.01632	0.04364	0.03905	-0.02658	-0.05448	-0.01204
GRMSY	0.10883	0.03907	0.04120	0.06180	0.03748	0.05125	0.10580	0.14583	0.03583	0.02173
GRCLSY	0.04653	0.05590	0.13756	0.09592	0.04517	0.13596	0.07164	0.03414	0.07384	0.03320
CREVSY	1.00000	0.11372	0.22131	0.18370	0.19380	0.00100	0.16732	0.13587	0.03904	0.11682
TUTRSY	0.11372	1.00000	0.20569	0.21951	0.06248	0.13936	0.05056	0.10112	0.16685	-0.01000
PARFSY	0.22131	0.20569	1.00000	0.33289	0.41795	0.07582	0.07206	0.03834	0.14928	0.02605
SRELSY	0.18370	0.21951	0.33289	1.00000	0.50435	0.06822	0.03751	0.09916	0.24125	0.07676
TRELSY	0.19380	0.06248	0.41795	0.50435	1.00000	0.03272	0.04932	0.05707	0.18168	0.02310
EQUFSY	0.00100	0.13936	0.07582	0.06822	0.03272	1.00000	-0.00059	0.05493	0.11799	0.07810
TEX12Z	0.16732	0.05056	0.07206	0.03751	0.04932	-0.00059	1.00000	0.38315	0.23660	0.27290
TST12Z	0.13587	0.10112	0.03834	0.09916	0.05707	0.05493	0.38315	1.00000	0.18452	0.18647
LIT12Z	0.03904	0.16685	0.14928	0.24125	0.18168	0.11799	0.23660	0.18452	1.00000	0.30381
FUR12Z	0.11682	-0.01000	0.02605	0.07676	0.02310	0.07810	0.27290	0.18647	0.30381	1.00000
REN12Z	0.07519	0.05029	0.10943	0.12887	0.02927	0.09549	0.14910	0.09925	0.10716	0.15730
SPA12Z	0.16182	0.05254	0.07345	0.07989	0.03782	0.09310	0.12147	0.12294	0.05711	0.16997

TABLE G.1--Continued

	REN12Z	SPA12Z
RE729XPP	0.01510	0.00640
KM729XPP	0.00009	0.00051
MU729XPP	0.08427	-0.03037
GY729XPP	0.05641	-0.03635
VO729XPP	0.00023	0.04253
CO729XPP	-0.02905	-0.09306
GU729XPP	0.02702	0.03053
PS729XPP	0.10744	0.03850
SG729XPP	0.05981	0.04480
SP729XPP	0.04455	-0.03657
TE729XPP	0.01041	0.00902
LA729XPP	0.14375	-0.07657
LI729XPP	0.04790	-0.04395
NU729XPP	0.06901	-0.01489
AU729XPP	0.12830	0.00025
TR729XPP	0.03755	-0.00480
CF729XPP	-0.04885	-0.05241
AD729XPP	0.04871	-0.00016
GUTDSY	-0.01427	0.01486
SCCWSY	0.09402	0.00129
TEAMSY	0.10391	0.00309
AIDESY	0.02740	-0.02850
TIKASY	0.00043	0.03701
RIKASY	0.00457	0.03807
UNGFSY	0.02030	0.03401
DEMNSY	0.04516	0.07300
UACHSY	0.19085	0.00312
MALASY	0.12240	0.03059
GERMSY	0.03228	0.08898
GFCLSY	0.02557	0.02757
CHEVSY	0.07519	0.10185
TUTRSY	0.03829	0.05254
PARESY	0.10343	0.07345
SPELSY	0.12087	0.07989
TRELSY	0.02727	0.08702
EGUPSY	0.09549	0.09310
TFX12Z	0.14910	0.12147
TST12Z	0.09925	0.12294
LIT12Z	0.10710	0.05711
FUR12Z	0.15730	0.18997
REN12Z	1.00000	0.14090
SPA12Z	0.14090	1.00000

TABLE G.2

CORRELATIONS BETWEEN PROGRAM VARIABLES, TENTH GRADE

	TYPE99	RR729X	KM729X	MU729X	CR729X	GY729X	VO729X	CJ729X	GU729X	PS729X	SN729X	SP729X
TYPE99	1.00000	-0.02333	-0.04561	0.05574	0.12338	0.17663	-0.06551	-0.01160	0.06512	-0.03759	-0.09473	-0.15152
RR729X	-0.02333	1.00000	0.40127	0.00072	0.02609	0.07837	0.05042	0.04720	-0.05548	0.10716	0.17997	0.18239
KM729X	-0.04561	0.40127	1.00000	-0.03437	0.12693	0.02907	-0.09639	0.00634	0.03690	0.08117	0.12088	0.22138
MU729X	0.05574	0.00072	-0.03437	1.00000	0.06093	0.28477	0.14561	0.14038	0.46073	0.16027	0.09425	0.06284
CR729X	0.12338	0.02609	0.12693	0.06093	1.00000	0.06272	-0.13039	0.19371	0.14815	0.04090	0.09002	-0.13513
GY729X	0.17663	0.07837	0.02907	0.28477	0.06272	1.00000	0.12443	0.00214	0.22505	-0.00439	-0.03100	0.00802
VO729X	-0.06551	0.05042	-0.09639	0.14561	-0.13039	0.12443	1.00000	0.02116	0.05926	0.26671	0.12205	0.16343
CJ729X	-0.01160	0.04720	0.00634	0.14038	0.19371	0.00214	0.02116	1.00000	0.23489	0.12543	0.12310	-0.00527
GU729X	0.06512	-0.05548	0.03690	0.46073	0.14815	0.22505	0.05926	0.23489	1.00000	0.15031	0.17408	0.01842
PS729X	-0.03759	0.10716	0.08117	0.16027	0.04090	-0.00439	0.26671	0.12543	0.15031	1.00000	0.43476	0.41621
SN729X	-0.09473	0.17997	0.12088	0.09425	0.09002	-0.03100	0.12205	0.12310	0.17408	0.43476	1.00000	0.44932
SP729X	-0.15152	0.18239	0.22138	0.06284	-0.13513	0.00802	0.16343	-0.00527	0.01842	0.41621	0.44932	1.00000
TE729X	0.02484	0.36484	0.22129	-0.09819	-0.02431	0.11678	0.12017	0.20813	-0.01422	0.20052	0.34337	0.40722
LA729X	0.00644	-0.02483	-0.05325	-0.03636	0.11228	-0.04295	0.08045	0.23734	0.04895	0.11834	0.24729	-0.06036
LI729X	0.04955	0.09338	0.18394	0.06122	-0.14694	0.31607	0.00049	-0.08028	0.11786	0.04163	0.07201	0.13383
NU729X	-0.12102	0.07328	0.21827	-0.00404	-0.03883	-0.04111	-0.10292	0.01336	0.03448	0.01762	0.05409	0.10809
AU729X	-0.03735	0.04333	0.04530	0.10765	0.13242	0.04741	-0.04589	0.20107	0.12313	0.18548	0.28108	0.04931
TR729X	0.09024	0.09522	0.19545	-0.02033	0.13432	0.05905	0.02784	-0.04948	0.03883	0.29583	0.27246	0.35020
CR729X	0.05833	0.17547	0.09491	0.04696	0.21464	0.23470	-0.04197	0.02489	0.10200	0.23580	0.21056	0.11340
AD729X	0.04493	0.00833	-0.00018	-0.11553	-0.00609	0.10260	-0.25909	0.09492	0.13073	-0.10444	-0.01213	-0.04510
TEX12Z	-0.02713	-0.03285	0.08032	-0.02997	-0.08008	0.02819	0.02733	0.12719	0.03009	0.10304	0.13851	0.04701
TST12Z	0.07349	0.14760	0.15273	-0.14182	-0.07788	-0.02552	-0.08047	-0.01219	-0.00096	-0.04642	0.02520	0.09412
LIT12Z	0.11892	-0.13092	-0.11679	0.05433	0.10326	-0.11002	-0.07521	0.14400	0.17513	-0.05773	0.02565	-0.16099
FUP12Z	0.08068	-0.01209	0.06236	-0.01896	0.03213	0.03302	0.05585	0.10063	0.02736	-0.17476	-0.04706	-0.00923
KEN12Z	0.04900	-0.00594	-0.07048	-0.01275	0.08190	-0.06945	0.14150	0.21845	0.02126	-0.02762	0.05399	-0.00142
SPA12Z	0.10372	0.03394	0.08140	-0.05959	0.00951	0.04565	-0.00282	0.07694	-0.02893	-0.05236	0.07022	0.02850
GUIDSY	-0.02222	0.04241	0.04522	0.11340	0.01838	-0.10646	0.09134	0.00778	0.23690	0.10596	0.06193	0.03222
SOCASY	0.09166	0.04103	0.01832	-0.00427	0.16036	-0.04521	0.00555	0.04718	0.21999	0.25289	0.26666	0.14393
AIDESY	-0.00563	0.22529	0.16047	-0.03088	-0.00280	0.01896	0.10225	0.22932	0.02556	0.16326	0.14595	0.15447
TTRASY	0.04146	-0.00266	-0.01480	-0.05890	0.02145	-0.05502	0.07612	0.02798	-0.09528	0.10246	0.09310	0.03364
READSY	-0.10738	0.33940	0.35303	-0.01854	0.05268	-0.06828	0.05276	-0.02587	0.02743	0.13012	0.13249	0.14077
MHISSY	0.08997	-0.03347	0.01603	0.03194	0.26353	-0.03375	-0.05847	0.06299	0.17907	0.00242	0.04225	-0.12792
UACHSY	0.02911	0.23103	0.13677	0.01556	0.09399	-0.06496	0.04896	0.04214	0.08757	0.03691	0.04559	-0.05737
MALASY	-0.07725	0.11789	0.09587	0.07297	-0.06905	-0.10217	0.19867	0.15911	0.07434	0.29525	0.24371	0.05495
GRFMSY	-0.01006	-0.03192	0.03482	-0.00959	0.01125	-0.14270	-0.00603	0.04040	0.00948	0.00938	-0.10075	-0.05227
CREVSY	0.02931	-0.02339	-0.00708	-0.03126	0.01203	-0.03998	0.00594	0.06349	0.13390	0.10815	0.10192	-0.01318
XACTSY	0.20722	0.00267	0.02969	-0.04426	0.09585	-0.04615	-0.17244	-0.00905	0.00433	0.04229	0.12210	-0.04445
XEUSSY	-0.10933	-0.07485	-0.09731	0.17240	0.01948	0.09081	0.14189	0.04749	0.27108	0.08554	0.00914	0.02019
TUTRSY	0.05571	0.10919	0.11630	0.07319	0.20269	0.04389	-0.05987	0.10094	0.00484	-0.00533	0.07173	-0.00738
PARFSY	0.03970	0.01170	0.05475	-0.10167	-0.00210	-0.02403	0.01006	0.04579	0.14173	0.13895	0.14575	-0.02210
SPFLSY	0.14351	-0.08750	-0.12048	-0.03394	0.10362	-0.06571	-0.02075	0.03614	0.04377	0.12439	0.10421	-0.13156
TRFLSY	0.10020	-0.03700	0.02128	-0.04257	0.08994	-0.15391	-0.05237	0.10932	0.13338	0.15012	0.13074	-0.09405
ECUPSY	0.10724	0.03880	0.07179	0.05986	0.04439	0.01130	0.16824	0.06924	0.02286	0.05746	0.07546	0.02274

TABLE G.2--Continued

	TL729X	LA729X	LI729X	NU729X	AU729X	TR729X	CR729X	AO729X	TEX12Z	TST12Z	LIT12Z	FUR12Z
TYPE99	0.02404	0.00044	0.04955	-0.12102	-0.03735	0.09624	0.09833	0.09493	-0.02713	0.07345	0.11852	0.00000
FA729X	0.00404	-0.02404	0.09336	0.07328	0.04333	0.09522	0.14547	0.00833	-0.03285	0.14730	-0.11852	-0.00000
RV729X	0.22129	-0.03325	0.18884	0.21827	0.04530	0.19645	0.09491	-0.00018	0.06032	0.15273	-0.11679	0.00000
MU729X	-0.00619	-0.00030	0.06122	-0.03404	0.10765	-0.02033	0.04696	-0.11553	-0.02997	-0.14142	0.05433	-0.01836
DP729X	-0.02431	0.11220	-0.16694	-0.03883	0.13342	0.13432	0.21464	-0.00609	-0.09008	-0.07748	0.10328	0.08213
GY729X	0.11078	-0.04295	0.31607	-0.04111	0.04741	0.05905	0.23470	0.10260	0.02819	-0.02552	-0.11062	0.03302
VO729X	0.12017	0.00045	0.00049	-0.10392	-0.04588	0.02784	-0.04197	-0.25909	0.02733	-0.08047	-0.07521	0.05585
CO729X	0.20813	0.20734	-0.09028	0.01336	0.20107	-0.04948	0.02989	0.09492	0.12719	-0.01219	0.14400	0.10053
GU729X	-0.01402	0.04095	0.11786	0.03448	0.12313	0.03883	0.10200	0.13073	0.03008	-0.00076	0.17513	0.02736
PS729X	0.20052	0.12834	0.04163	0.01762	0.18848	0.29383	0.23580	-0.10444	0.10304	-0.04642	-0.05773	-0.17496
SG729X	0.34337	0.24729	0.07201	0.03409	0.28108	0.27246	0.31055	-0.01213	0.13851	0.02530	0.02565	-0.04706
SP729X	0.40722	-0.00030	0.13383	0.10809	0.04931	0.35020	0.11040	-0.04510	0.04701	0.09412	-0.16098	-0.00823
TE729X	1.00000	0.20296	0.28784	0.04810	0.09476	0.28731	0.27334	-0.03563	0.06152	0.10687	-0.15741	-0.00047
LA729X	0.10296	1.00000	0.07156	-0.06438	0.10182	0.24028	0.04472	-0.05218	0.00676	-0.13422	0.14705	0.05781
LI729X	0.20784	0.07156	1.00000	0.15607	-0.04592	0.30260	0.20272	0.23196	-0.04615	0.07200	-0.22201	-0.09712
NU729X	0.00010	-0.00430	0.15607	1.00000	-0.02145	0.02422	0.04216	0.05290	0.05855	0.11300	-0.01950	-0.02802
AU729X	0.09476	0.10182	-0.04592	-0.02145	1.00000	0.07061	0.04633	-0.03938	0.00482	-0.03907	0.09609	0.09835
TR729X	0.20731	0.24028	0.02422	0.02422	0.07061	1.00000	0.30877	-0.03140	-0.00602	0.06746	-0.08256	-0.00199
CR729X	0.27334	0.04472	0.20272	0.09216	0.04633	0.30877	1.00000	-0.04026	-0.01605	0.02251	-0.02066	0.05160
AO729X	-0.03303	-0.03218	0.23196	0.05290	-0.03938	-0.03140	-0.04026	1.00000	0.00745	0.10085	0.01985	-0.05848
TEX12Z	0.00012	0.00020	-0.04615	0.05359	0.00482	-0.00602	-0.01605	0.00745	1.00000	0.43256	0.20947	0.04944
TST12Z	0.10007	-0.13422	0.07200	0.11300	-0.03907	0.05748	0.02651	0.10085	0.43256	1.00000	0.22592	0.00000
LIT12Z	-0.15741	0.14705	-0.22201	-0.01950	0.09608	-0.08256	-0.02066	0.01985	0.20947	0.22592	1.00000	0.19988
FUR12Z	-0.00047	0.00000	-0.09712	-0.03802	0.09835	-0.00199	0.05160	-0.05248	0.04944	0.02637	0.19988	1.00000
REN12Z	-0.03732	0.10004	-0.09725	-0.04336	-0.01453	-0.07179	-0.01932	-0.03984	0.20979	0.14839	0.18387	0.35840
SFA12Z	0.00000	0.02870	-0.04535	0.04066	-0.01798	0.01229	0.07786	0.09162	0.22625	0.20165	0.10414	0.33335
GUIDSY	-0.00004	-0.02390	-0.20403	0.03860	0.00346	-0.07871	0.02521	-0.10370	-0.06691	-0.01143	0.04951	-0.07138
SFC4SY	0.02343	0.12949	-0.09537	-0.01604	0.09652	0.34347	0.21041	-0.09017	-0.00472	0.00992	0.12163	-0.02948
AIC4SY	0.53303	0.12374	-0.02539	0.06730	0.13823	0.11951	0.10758	0.00144	0.00502	0.08613	-0.01322	-0.15774
TFR4SY	0.00917	0.10033	-0.02580	0.06248	-0.06414	-0.08402	0.05242	-0.11747	-0.05837	0.02243	0.09249	0.05544
READSY	0.09925	0.00040	-0.15640	0.15916	-0.01234	0.08481	0.08791	-0.13678	0.02233	0.04401	0.03717	0.04856
MPISSY	-0.00995	0.14819	-0.14580	-0.02811	0.05432	-0.14443	-0.01538	-0.01820	-0.05624	-0.07320	0.13789	0.02084
UAGHSY	0.00313	0.00047	-0.14920	0.07821	0.17803	-0.08606	0.12315	-0.10283	-0.04905	-0.10539	0.14865	0.09122
MAL4SY	0.10027	0.17063	-0.07398	0.16802	0.22344	0.02079	0.07061	-0.03936	0.13901	0.02395	0.05975	-0.04345
GRMSY	-0.00470	0.00310	-0.23819	0.07466	0.08697	-0.24023	-0.18783	-0.30661	-0.07317	-0.05637	0.15754	0.08267
GRFVSY	-0.00370	0.10759	-0.14223	0.02392	0.10177	-0.10591	-0.00266	-0.07826	0.07383	0.00774	0.21856	0.10183
XACTSY	-0.00289	0.15120	0.03207	0.13479	0.08288	0.16046	0.17746	0.04529	0.02052	0.10051	0.13367	0.05056
XBUSSY	-0.02365	-0.01004	-0.10362	-0.00130	-0.10410	0.00469	-0.00131	-0.04414	0.05362	-0.03958	0.08329	-0.02772
TUTKSY	0.03221	0.07092	-0.19996	0.10138	0.03027	-0.03833	0.08249	-0.12445	0.03583	0.05158	0.05279	-0.02512
PAR4SY	0.00320	0.14847	-0.00472	0.12535	0.03969	0.09352	0.19213	-0.01240	0.01671	0.08806	0.24236	-0.07665
SRELSY	-0.10772	0.20014	-0.14735	0.06802	0.07323	0.01345	0.13513	-0.08593	0.16588	0.04206	0.24623	0.03208
TRFLSY	-0.00587	0.11040	-0.10064	0.10960	0.11748	0.02617	0.15343	0.00464	0.15771	0.13020	0.30122	0.02618
ECUPSY	0.10009	0.04947	-0.05506	0.04357	0.02931	0.00491	0.04673	-0.09938	-0.08570	0.06273	0.00229	-0.00009

TABLE G.2--Continued

	KLNI2Z	SPA12Z	GUIDSY	SOCWSY	AIDESY	TTRASYS	READSY	MHISSY	UACHSY	MALASY	GRMSY	CREVSY
TYPE99	0.04906	0.10372	-0.02222	0.09166	-0.00563	0.04148	-0.10739	0.06997	0.02911	-0.07725	-0.01006	0.02931
RR729X	-0.00054	0.03394	0.04241	0.04103	0.22529	-0.00266	0.35946	-0.05547	0.23103	0.11739	-0.09192	-0.02359
RM729X	-0.07048	0.00140	0.04522	0.01832	0.16047	-0.01480	0.35303	0.01603	0.13677	0.09537	0.03462	-0.00708
MU729X	-0.01275	-0.00359	0.11340	-0.00427	-0.02088	-0.05890	-0.01854	0.03194	0.01556	0.07297	-0.00959	-0.05126
DR729X	0.00190	0.00991	0.01838	0.15036	-0.00380	0.02145	0.06268	0.26353	0.09399	-0.00905	0.01125	0.01208
GY729X	-0.00945	0.04065	-0.10546	-0.04521	0.01896	-0.05502	-0.06828	-0.03375	-0.06456	-0.10217	-0.14270	-0.03598
VQ729X	0.14150	-0.00282	0.09134	0.00555	0.10225	0.07618	0.05276	-0.05947	0.04399	0.19857	-0.00503	0.00594
CC729X	0.21645	0.07094	0.00778	0.04718	0.22932	0.02798	-0.02587	0.06299	0.04214	0.15911	0.04040	0.06349
GU729X	0.02126	-0.02083	0.23690	0.21999	0.02556	-0.09528	0.02743	0.17907	0.08757	0.07434	0.00848	0.13380
PS729X	-0.02762	-0.02266	0.10596	0.25239	0.16326	0.10246	0.13012	0.00262	0.03671	0.29525	0.00938	0.10915
SG729X	0.00358	0.07052	0.06193	0.26688	0.18595	0.09310	0.13243	0.06223	0.06395	0.24371	-0.10975	0.10192
SP729X	-0.00142	0.03350	0.03222	0.14373	0.15487	0.03364	0.14077	-0.12792	-0.05757	0.05495	-0.08227	-0.01318
TE729X	-0.00132	0.03888	-0.08684	0.02340	0.53303	0.03917	0.06925	-0.09595	0.05313	0.10827	-0.06476	-0.05579
LA729X	0.10084	0.02070	-0.02298	0.12949	0.12874	0.10833	0.05040	0.14819	0.06047	0.17063	0.00318	0.18759
LI729X	-0.00725	-0.04535	-0.02403	-0.09537	-0.02539	-0.02580	-0.15640	-0.14580	-0.14920	-0.07398	-0.23817	-0.14223
NU729X	-0.04336	0.04066	0.03860	-0.01604	0.06730	0.06948	0.15816	-0.02811	0.07821	0.16802	0.07466	0.02392
AUT729X	-0.01453	-0.01798	0.06346	0.09452	0.13823	-0.06414	-0.01234	0.05432	0.17503	0.22344	0.08457	0.10177
TF729X	-0.00717	0.01229	-0.07871	0.34347	0.11951	-0.06402	0.05481	-0.14443	-0.08606	0.02979	-0.24023	-0.10591
CR729X	-0.01552	0.07700	0.02521	0.21041	0.10758	0.05342	0.08791	-0.01538	0.12315	0.07061	-0.18783	-0.00266
AC729X	-0.00984	0.09162	-0.10370	-0.09017	0.00144	-0.11747	-0.13678	-0.01820	-0.10283	-0.03936	-0.20661	-0.07826
TEX12Z	0.20974	0.23025	-0.06681	-0.09422	0.00502	-0.05837	0.02233	-0.09624	-0.04905	0.13901	-0.07317	0.07283
TS112Z	0.14649	0.20165	-0.01143	0.00992	0.08613	0.02243	0.04401	-0.07320	-0.10589	0.02335	-0.05627	0.00774
LIT12Z	0.18387	0.10404	0.04851	0.12163	-0.01822	0.09249	0.03707	0.19780	0.14685	0.05975	0.15794	0.21856
FUR12Z	0.35640	0.33333	-0.07138	-0.02688	-0.15774	0.05344	0.04856	0.02884	0.09122	-0.04345	0.08267	0.18183
REN12Z	1.00000	0.38627	-0.07924	-0.04527	-0.08310	0.09752	0.04035	0.19816	0.04815	0.05270	0.00919	0.18037
SPA12Z	0.38627	1.00000	-0.13674	0.09976	-0.00035	0.05205	0.02467	0.07466	-0.06449	-0.05142	-0.19011	0.04927
GUIDSY	-0.07924	-0.13674	1.00000	0.13774	0.15649	0.35862	0.27805	0.20740	0.35288	0.17342	0.28093	0.29823
SOCWSY	-0.04527	0.09976	0.13794	1.00000	0.22263	0.14506	0.22356	0.16487	0.17006	0.04871	0.03302	0.18269
AIDESY	-0.00910	-0.00035	0.15649	0.22263	1.00000	0.26323	0.25763	0.05381	0.22294	0.14017	0.10579	0.06791
TTRASYS	0.07132	0.02205	0.35862	0.14506	0.26323	1.00000	0.21638	0.26635	0.16585	0.02637	0.28843	0.20268
READSY	0.04035	0.02467	0.27805	0.22356	0.25763	0.21638	1.00000	0.18624	0.20256	0.12795	0.13974	0.18428
MHISSY	0.19816	0.07466	0.20740	0.16487	0.05381	0.26635	0.18624	1.00000	0.23056	0.14028	0.05560	0.26711
UACHSY	0.04815	-0.06449	0.35288	0.17006	0.22294	0.16585	0.20256	0.23056	1.00000	0.36700	0.25849	0.28413
MALASY	0.05270	-0.05142	0.17342	0.04871	0.14017	0.02637	0.12795	0.14028	0.36700	1.00000	0.05030	0.21809
GRMSY	0.00919	-0.19011	0.36093	0.03302	0.10579	0.26848	0.13974	0.05560	0.28849	0.05030	1.00000	0.23076
CREVSY	0.18037	0.04927	0.29823	0.19269	0.06791	0.20268	0.18828	0.26711	0.28413	0.21309	0.23076	1.00000
XACTSY	0.04707	0.10079	0.13438	0.10511	0.06288	0.08954	0.05849	0.23632	0.06760	0.12127	-0.01624	0.19051
XBUSSY	-0.02727	-0.01888	0.09405	0.20410	0.07032	0.14931	0.15639	0.09964	0.00371	-0.03235	0.06944	0.03447
TUTPSY	0.15352	0.04312	0.27332	0.04363	0.12692	0.19246	0.29376	0.25813	0.17515	0.04911	0.21882	0.19124
PARESY	-0.05839	0.12095	0.14189	0.23945	0.18891	0.24465	0.11843	0.28213	0.16928	0.19149	0.13226	0.22333
SPRELSY	0.15473	0.09748	0.21395	0.30232	0.08361	0.36602	0.11685	0.38417	0.33257	0.23972	0.20933	0.34492
TRFLSY	0.11060	0.11628	0.27830	0.21662	0.13529	0.37710	0.22750	0.29998	0.19039	0.21180	0.16646	0.29822
EQUPSY	-0.04072	0.00282	0.43738	0.24957	0.32800	0.48542	0.15600	0.16302	0.26590	0.12758	0.31034	0.15221

TABLE G.2--Continued

	XACTSY	XEUSSY	TUTPSY	PARESY	SRELSY	TRELSY	EQUPSY
TYPE99	0.20722	-0.10953	0.03571	0.09676	0.14351	0.10026	0.10724
RF729X	0.00267	-0.07485	0.10515	0.01176	-0.08750	-0.03766	0.03630
RM729X	0.02969	-0.09751	0.11630	0.05475	-0.12043	0.02126	0.07179
MU729X	-0.04426	0.17240	0.07319	-0.10167	-0.03094	-0.04257	0.05936
DF729X	0.05985	0.01948	0.20269	-0.00210	0.10262	0.06994	0.04439
GY729X	-0.04615	0.09081	0.04389	-0.05403	-0.06571	-0.15391	0.01130
VO729X	-0.17244	0.14188	-0.06387	0.01666	-0.02075	-0.05237	0.16824
CO729X	-0.00305	0.04768	0.10094	0.04579	0.08414	0.10982	0.04924
GU729X	0.00463	0.27108	0.00434	0.14173	0.04377	0.13338	0.02236
PS729X	0.04229	0.08554	-0.00533	0.18885	0.12438	0.15012	0.09766
SO729X	0.12210	0.00914	0.07178	0.14675	0.10821	0.13074	0.07628
SP729X	-0.04445	0.02519	-0.00738	-0.06210	-0.13146	-0.09405	0.02274
TE729X	-0.00289	-0.02585	0.03221	0.06520	-0.16772	-0.04587	0.10609
LA729X	0.15120	-0.01804	0.07832	0.14847	0.20614	0.11648	0.04947
LI729X	0.05207	-0.10362	-0.19396	-0.00472	-0.14735	-0.10064	-0.05506
NU729X	0.13479	-0.00180	0.10138	0.12535	0.06603	0.10960	0.04357
AU729X	0.08288	-0.10410	0.03027	0.03969	0.07323	0.11748	0.02931
TR729X	0.16046	0.00469	-0.03833	0.09352	0.01345	0.02617	0.00491
CF729X	0.17748	-0.00131	0.08248	0.19213	0.13513	0.15343	0.04673
AF729X	0.04529	-0.04414	-0.12345	-0.01240	-0.00593	0.00464	-0.09938
TEX12Z	0.02052	0.05362	0.03593	0.01671	0.16588	0.15771	-0.03570
TST12Z	0.10051	-0.03966	0.05168	0.03406	0.04206	0.13020	0.06273
LIT12Z	0.13687	0.06369	0.08279	0.24236	0.24623	0.30122	0.00229
FUR12Z	0.05056	-0.03772	-0.02512	-0.07865	0.03208	0.02618	-0.00069
REN12Z	0.04707	-0.02727	0.13352	-0.05839	0.15473	0.11060	-0.04072
SPA12Z	0.10079	-0.01888	0.04312	0.12095	0.09748	0.11628	0.06282
GUTDSY	0.13438	0.07405	0.27332	0.14189	0.21395	0.27830	0.43738
SOCWSY	0.10511	0.20410	0.04963	0.23945	0.30232	0.21662	0.24957
AIDESY	0.06268	0.07032	0.12692	0.18891	0.08361	0.13529	0.32800
TIRASY	0.06954	0.14931	0.19246	0.24465	0.36602	0.37710	0.48542
READSY	0.05849	0.15689	0.25376	0.11843	0.11685	0.22750	0.15600

The Factor Analysis

The factor analysis discussed in Chapter 1 was prepared in two stages. First, the entire list of program variables was factor analyzed using the yes-no coding of the program variables. The factor analysis was constrained to yield only the first four factors and was rotated with a varimax rotation. This factor analysis was examined. Those variables which did not load onto any of the four factors were then deleted from the correlation matrix and a second factor analysis prepared. The result of this was to produce somewhat cleaner results, with more distinction between the factors.

The factor loadings for the fifth and tenth grade analysis are shown in Tables G.3 and G.4. Since the program variables are taken from three different sections of the questionnaire, each with slightly different formats, there is a noticeable tendency for both factor analyses to form separate factors according to format. Thus, for example, for both analyses, one factor tends to be formed around the listing of the number of specialists per thousand students and another factor around the listing of supplies and facilities provided in the tenth grade. Thus, the important factor loadings are those in which a variable from one portion of the questionnaire loads on a factor containing items from other portions of the questionnaire. For example, in the tenth grade, we find that factor three contains not only the "Z" variables reflecting purchase of materials and supplies and building renovation, but also the human relations variables. This may explain why, in Chapter 2, we found a tendency for the "Z" variables to correlate with improved racial attitudes.

TABLE G.3

FIFTH GRADE PROGRAMS: VARIMAX ROTATED FACTOR MATRIX

	Factor 1	Factor 2	Factor 3	Factor 4
RR729XPP	0.02439	-0.05128	0.52629	-0.09648
MU729XPP	0.80813	0.07264	0.03036	0.16252
GY729XPP	0.65974	0.07619	0.06373	0.01880
GU729XPP	0.62488	0.03945	0.26018	-0.07274
PS729XPP	0.17851	0.01001	-0.01818	0.60504
SO729XPP	0.00583	0.18834	0.02538	0.48853
SP729XPP	0.51305	-0.04777	-0.11102	0.38941
TE729XPP	0.26214	0.03743	0.46891	0.12215
LI729XPP	0.64040	0.02879	-0.01635	0.20095
TR729XPP	0.06612	-0.12895	-0.01547	0.26151
AD729XPP	0.64582	0.00011	0.15258	-0.09097
SOCWSY	-0.05025	0.15526	0.05035	0.51727
TEAMSY	0.06760	0.38522	0.10294	0.10382
AIDESY	0.04928	0.01236	0.48022	-0.01984
READSY	0.04369	0.09276	0.58119	-0.05373
DEMNSY	0.02132	0.38520	0.09045	0.02243
GRRMSY	-0.01462	0.11412	0.32158	0.13650
CREVSY	0.08108	0.39204	0.11346	0.05199
PARESY	0.01651	0.59225	-0.05513	-0.05426
SRELSY	-0.01169	0.61012	-0.00054	0.04927
TRELSY	-0.03731	0.60987	0.03798	0.00200
TST12Z	0.03858	0.11592	0.41391	0.00031

TABLE G.4

TENTH GRADE PROGRAMS: VARIMAX ROTATED FACTOR MATRIX

	Factor 1	Factor 2	Factor 3	Factor 4
RR729X	-0.02273	0.40690	-0.00390	-0.06114
MU729X	-0.01160	-0.09186	-0.13852	0.48530
GU729X	0.06270	-0.07060	0.00631	0.49892
PS729X	0.09914	0.43359	0.04890	0.54803
SO729X	0.04500	0.55007	0.19719	0.53331
SP729X	-0.09264	0.56098	0.00311	0.24034
TE729X	-0.02538	0.78880	-0.00065	-0.12261
GUIDSY	0.58095	-0.00404	-0.15684	0.20254
AIDESY	0.33506	0.51775	-0.02084	-0.12199
TTRASYS	0.64098	0.12120	0.05094	-0.07448
GRRMSY	0.45093	-0.09611	-0.11340	-0.01762
XACTSY	0.25570	-0.01042	0.24213	0.05012
SRELSY	0.57173	-0.14367	0.35241	0.11093
TRELSY	0.56961	-0.08419	0.40322	0.14630
EQUPSY	0.67706	0.16330	-0.06152	-0.03117
TEX12Z	-0.08018	0.06082	0.56850	0.05487
TST12Z	0.00351	0.13450	0.47693	-0.13315
LIT12Z	0.17893	-0.23271	0.38931	0.11277
REN12Z	-0.00501	-0.06192	0.43221	-0.00451
SPA12Z	-0.02835	0.05127	0.46306	-0.09610

SOUTHERN SCHOOLS
An Evaluation of the Effects of
The Emergency School Assistance Program
and of School Desegregation

Volume II

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APPENDIX: QUESTIONNAIRES

EDITOR'S PREFACE

During the evaluation of ESAP-II, we came across a variety of research problems that are relevant to desegregation and to policy making. The five working papers in this volume are the result of our decision to explore some of these issues.

The first two papers deal with race relations in desegregated Southern schools. The first treats the student's sense of belonging by looking at both black and white students who say "I don't really belong in this school." A large minority of students say this; blacks say it more often than whites. For most students, sense of belonging is closely related to the race relations in the school: both races are more alienated when in the minority, or when racial tension is high. The main point of the analysis is to show that desegregation puts a great deal of strain on students of both races.

The authors of the first paper also note, however, that "The school is not the powerless victim." Teachers can make students feel more comfortable in a desegregated school. For black students, the most important thing that they can do is to show, by their actions, that they are sympathetic to black students and that they believe in desegregation. It is important to note that it is possible for teachers to make black students feel more at home without alienating white students.

The second working paper, by Ruth Narot, asks whether the school can induce teachers to change the way they react to desegregation. In her analysis, she shows that teachers' personal feelings about race are not easily changed; however, the way they react to the desegregated school, and more importantly, the way their feelings are perceived by one another and by their students, are influenced by the situation they are in. Narot concludes that the principal is the key to good race relations.

The third working paper speaks to two questions raised by the Coleman report: "How big is the effect of the school on student achievement test performance?" and "Is a student's achievement affected by the social status of the other students in the school?" The answer to the second question is an unequivocal yes: a student can be expected to do better in a middle-class school than in a working-class school. The answer to the question "How large is the effect of the school?" is less an exercise in statistical analysis than an experiment in the presentation of results. This part of the paper indicates that the conclusion commonly drawn from the Coleman report--that schools make no difference--is a sort of optical illusion, by pointing out that the results of the ESAP analysis (which generally agree with Coleman's) can be presented in different ways so as to make school effects look larger or smaller. The paper argues for a fairer conclusion--that schools can make a difference which, while not great, is well worth the effort. If schools do make a difference, however, this is not accomplished simply by manipulating their racial composition. Ruth Narot's analysis of achievement scores in the fourth working paper shows that the racial composition of Southern schools does not affect black achievement in any consistent manner. To the extent that it does have an effect, it appears that the optimal racial composition is for black and white students to be approximately equal in number. Achievement for both black and white students tends to be somewhat lower in schools that are predominantly white. Perhaps the most important finding of this analysis is that white achievement does not go down in schools that have many black students.

Black student achievement is affected by the social class of the white students, and by the quality of race relations in the school. Blacks do well academically when they are in school with high status whites and when white students are more accepting of integration. Black females do quite well in predominantly white high schools if they are afforded opportunities to participate in extracurricular activities.

The last working paper is an effort by James Davis to find some scientific way to look at the present furor over busing. After reviewing

the National Public Opinion poll data on the issue, he attempts to define the school where students are "bused" in the now-popular meaning of the word, and then systematically searches for any effects of busing. He carries out a cross-tabulation analysis, using five measures of aspects of desegregation and 28 possible outcome variables. Riding a bus to school is correlated with one of seven possible good or bad effects. He finds that, when white students are bused to school, racial tension is noticeably lower. That is not inconsistent with another finding of the report--that schools that are predominantly black have generally good race relations. The second of Davis' findings is that white morale is low in predominantly black schools, a finding quite consistent with the results of the analysis in Working Paper 1. The third, and weakest, finding is that achievement is lower for whites who attend schools in black neighborhoods. This runs contrary to the related analysis of the fourth working paper, and a replication of Davis' tabulation, using the standard multiple regression routine used elsewhere in the report, finds no negative effect on achievement. This makes it seem likely that the last finding is a statistical accident. All of this leads Davis to conclude that whatever good or bad things happen because of desegregation, the school bus itself has little to do with the issue.

In summary, the papers in this volume present something of the complexity of the desegregation process and its problems. It is clear that desegregation is a painful process for students. Yet, while it does not seem to harm white achievement, it does little to raise black achievement. This is true, in part, because the desegregated Southern school does too little to welcome its black students. The fortunate black student who attends school with middle-class whites, and the black girl who attends a predominantly white school that invites her into its social life, seem to benefit academically from integration. The most reassuring note is that presented in the second paper: teachers in desegregated schools can be influenced to accept desegregation and to make their black students welcome.

Robert L. Crain

WORKING PAPER 1

THE IMPACT OF SCHOOL CHARACTERISTICS ON STUDENT DISSATISFACTION

by

Robert L. Crain and Jean Jenkins

This paper uses black and white student response to the statement "I feel like I don't belong in this school" as a measure of student dissatisfaction and locates some of the school characteristics associated with this phenomenon. Using a multiple regression analysis, we find that almost all of the important predictors of student dissatisfaction are related to racial integration. Black students are uncomfortable in schools where they are in the minority; however, a liberal teaching staff can do much to reduce their sense of alienation. Conversely, white students are most likely to say they "don't belong" when they are in predominantly black schools; however, if desegregation goes smoothly, with relatively little interracial friction, white dissatisfaction declines. White dissatisfaction is also lower if teacher and principal morale are high. Thus we conclude that while desegregation places great stress on both white and black students, the professional staff of the school has considerable influence on student feelings.

Introduction

"I feel like I don't belong in this school." A minority of white and black students agree with this statement. What do they mean? We suspect that, for most of them, "to belong" means to be in the right place--as in "the hammer doesn't belong on that shelf." But if one is not "in place," one is "out of place"--a phrase that suggests alienation, a sense of being in a foreign country. The student who says, "I don't really belong here,"

may be saying, "this isn't really me here--the real me should be somewhere else." This study does not provide the data to isolate any single concept that could be associated with the "belonging" response. We shall use the phrase "dissatisfaction" and some of its synonyms in this paper, but the reader should bear in mind that the concept is a diffuse one.

In a typical high school, 31 per cent of the black students and 21 per cent of the white students say that they don't belong. These percentages are given in Table 1.1. The table also shows that fifth grade black students are more likely to say that they don't belong than are fifth grade white students. Elementary school students are more likely to say that they do not belong than are high school students, but we are not sure that this measurement is accurate; response bias may have inflated the responses for the elementary schools. High school students were asked simply to agree or disagree with the statement, "I feel like I don't really belong in this school." With elementary school students, however, we wished to avoid using the concepts of agree and disagree, preferring simple yes-no questions. For this reason, the fifth grade wording became "Do you feel like you don't really belong in this school?" Students who felt that they belonged were then required to disagree with a negatively worded statement. We are inclined to think that this was sufficiently confusing that a number of fifth grade students agreed with the statement in error. Since, however, the fifth grade students were read the questions aloud, the better interviewers may have elicited the true response by enabling the students to understand the question.

Table 1.1 also gives the standard deviation of the distribution of school means. The standard deviations are reasonably large. If we contrast the black student bodies that are one standard deviation above the mean with those one standard deviation below, the percentage of fifth graders responding favorably would change from 72 per cent to 37 per cent; that of tenth graders from 89 per cent to 50 per cent. For white students, the ranges are also large: for fifth graders, from 81 per cent to 51 per cent; for tenth graders, from 90 per cent to 68 per cent. It seems clear that schools where only one-half or fewer of the black students feel that they really belong are schools with serious problems.

TABLE 1.1

PERCENTAGE OF STUDENTS WHO SAY THEY "DON'T BELONG"
IN THEIR SCHOOL,^a BY GRADE AND RACE, WITH
STANDARD DEVIATIONS OF THE BETWEEN-SCHOOL
DISTRIBUTION OF RESPONSES

Grade and Race	Per Cent Who "Don't Belong"	σ of School Means
Tenth grade black . .	31	19.1
Tenth grade white . .	21	11.4
Fifth grade black . .	46	17.5
Fifth grade white . .	34	14.7

^aQuestion wording:

Fifth grade: "Do you feel like you don't really belong
on this school?" (yes,no)

Tenth grade: "I feel like I don't really belong in
this school." (agree or disagree)

The use of a single item, rather than a scale, considerably reduces reliability. We would assume that, at the school level, the test-retest correlation of this item would not be much above .7. Later, we will look at multiple regression equations using "belonging" as the dependent variable, and find that we can explain 20 to 40 per cent of the variance. This indicates that we are explaining a very large fraction of the non-random variance on this item.

It is not surprising that this sense of not belonging in one's school is related to other measures of dissatisfaction and alienation. Table 1.2 gives the correlates of the percentages who feel they belong in their school. For fifth grade black students the percentage who feel that they do belong is strongly correlated ($r = .33$) with the percentage of students who score high on a scale of liking school. (This includes questions about liking to go to the school in the morning, not hating school, and liking one's teacher or principal.) The percentage who say they belong in their school is equally strongly associated with the percentage who decline to say yes to several questions inviting them to say

they get angry at their teachers, or to complain about unfairness of discipline.

TABLE 1.2
CORRELATIONS OF SENSE OF BELONGING WITH OTHER ATTITUDES
AND SOCIAL STATUS OF STUDENTS OF SAME RACE

Variable	Correlations with Belonging			
	Fifth grade		Tenth grade	
	Black	White	Black	White
No complaints about being treated unfairly (BRAT9) . . .	.29	.25	.35	.34
Like school	.33	.22	.42	.47
Low absenteeism, not sent to office, not in fight (tenth grade only)			.14	.31
Socioeconomic status scale . . .	-.01	.10	-.06	-.07

For fifth grade white students, the correlations are slightly lower but remain fairly high. For tenth grade students, we have an additional variable--a measure of minor delinquent behavior. The students were asked how often they intentionally stayed away from school, whether they had gotten into a fight, and whether they had been sent to the principal's office for disciplinary reasons. The percentage of students who score low on the scale of minor delinquent activities is positively associated with the percentage of students who feel they belong in their school. This association is weak for tenth grade black students; for both black and white students, it is considerably weaker than the correlation between the percentage scoring high on the "I like school" scale and sense of belonging.

Black Social Status and Dissatisfaction

One might assume that the number of students who don't like school, who complain about being treated unfairly, and who feel they don't belong would be greatest in low-income schools. In fact, this is generally not the case. The correlations of sense of belonging with the mean social status

of the students of each race-age group are generally very small, and in three of the four cases are in the unexpected direction--high status schools have more students complaining about not belonging. Of course, this does not mean that the complaints are coming from the highest status students; a lower status student might be more likely to complain about not belonging in a high status school than in a school where other students are of the same status. Yet, it is true that high schools with middle-class black student bodies have the highest level of tension. High schools with high status black students have more black students who say they do not like school and more who have committed minor delinquent acts. (The correlation of school mean black status with non-delinquency scale score is $-.26$; the correlation of mean social status with the black school mean on the "I like school" scale is $-.20$.) It is very important to keep this in mind when reading our analysis. Black alienation is not a matter of poverty; the Southern high schools with the most alienated black students are those with middle-class blacks.

The Influences on Sense of Belonging: A Regression Search

We determined the school factors that influenced black and white sense of belonging by a partial correlation and regression search through the approximately 300 variables that characterize our schools. We intentionally excluded almost all variables that were reports by students of the same race, since it would be virtually impossible to establish the causal direction of two student responses. We included student responses only where we felt reasonably confident that the response could not be caused by sense of belonging. The remaining variables are reports by principals, community leaders, teachers, and students of the opposite race.

Any methodology has advantages and disadvantages. The clear advantage of an unrestricted search procedure is that it permits unanticipated variables to enter the equations. When the final best-fitting equation is collected we can be sure that we have not missed anything. The disadvantages of this method are equally obvious. First, in many cases the variables that select themselves to enter the equation are totally uninterpretable and we must resign ourselves in advance to this. Second, high

correlations between some of the independent variables may mean that two nearly identical variables will enter two different equations, each serving as a proxy for the other. If we study the correlations between the variables in the study carefully, we will find this problem to be only a minor irritation. The third and most important problem is that the set of predictors is no better than the universe of variables from which it was selected. In our case, the universe contains a very large number of variables related to race relations but relatively few that deal with the actual functioning of the classroom.

The Results: Black Sense of Belonging

The results of the regression analysis are shown in Table 1.3 (for blacks) and Table 1.4 (for whites). In order to minimize problems of multicollinearity, we elected to include only seven independent variables in each regression run. In general, the results for elementary school and high school students are very similar. In an appendix to this paper, we present the zero-order correlations of all of the variables from the four regression analyses with the students' sense of belonging for all four race and age groups. When a variable does not operate consistently for fifth and tenth graders, we will call it to the reader's attention.

In Table 1.3, only one variable appears in identical form for both fifth and tenth grade black students--the racial composition of the school student body. Not surprisingly, both fifth and tenth grade black students are more likely to feel that they don't belong if they are in predominantly white schools. In addition, black high school students are more likely to say that they do belong if they are attending a school that was black before desegregation. This variable is slightly more important than present racial composition. That this is so points up an important fact: the conflict between white and black high school students is a conflict over symbols. Black students attending previously black school are on their own "turf"; the white students in that situation are the ones in foreign territory.

For both fifth and tenth grade black students, the variable with the largest standardized regression coefficient is the student response to questions about whether their teachers and principals like segregation or

TABLE 1.3

REGRESSION EQUATIONS PREDICTING BLACK SENSE OF BELONGING

Variable (stated in positive direction)	Standardized Regression Coefficient	
	Fifth Grade	Tenth Grade
<u>Community Characteristics:</u>		
Per pupil expenditures for education (PPDOLD) ^a		-.12
School board is appointed (SBSELD)	-.13	
<u>Desegregation Characteristics of School:</u>		
Per cent white of student body (PWHITP)	-.16	-.17
School was white before desegregation (PRIORP)		-.23
<u>Community Racial Activity:</u>		
Community biracial committee judged effective (BICOML)	-.19	
<u>Staff Racial Behavior:</u>		
Teachers like desegregation (TLKITB)	.22	
Teachers and Principals like desegregation (TLINTB)		.30
<u>School Atmosphere:</u>		
Per cent of black students who transferred out last year (BOTRAP)		-.12
Minority students demanding ethnic studies (ETHNST)		.20
Fighting has not increased since desegregation (WFIGHT)		.16
<u>School Educational Activities:</u>		
Size of remedial reading program (READSY)	-.20	
Size of team teaching program (TEAMSY)	.17	
Size of ungraded classroom program (UNGRSY)	-.11	
Total r^2 explained	19%	38%

^aSee notes in the appendix of this paper (p. 16) for explanation of the acronym notation.

TABLE 1.4

REGRESSION EQUATIONS PREDICTING WHITE SENSE OF BELONGING

Variable (stated in positive direction)	Standardized Regression Coefficient	
	Fifth Grade	Tenth Grade
<u>Student Characteristics:</u>		
Achievement (ATOTAW) ^a	.20	
<u>School Desegregation Plan:</u>		
School was white before desegregation (PRIORP*)	.25	
Racial composition of school changed this year (RCHNCP*)		-.25
Per cent of students riding school bus (TRANSW)		-.14
Per cent not attending school nearest their home (CLSPSW*)	-.30	
School has white principal (PRACEP*) . . .		.21
<u>School Atmosphere:</u>		
Teachers report few desegregation problems (NOPROT)		.18
Teachers report good intergroup relations, few problems (RREV9T)	.14	
No school activities cancelled because of racial problems (RPROBT)		.16
Black students do not feel mistreated (BRAT9B)	.17	
<u>Staff Attitudes:</u>		
Principal states tests not good indicators of ability (TEST9P)	.14	
Principal considers his white teachers to be competent (WTQUAP).		.14
Teachers feel they are adequately trained (LACKTT)		.18
<u>School Educational Activities:</u>		
School has revised curriculum (CREVSY) . .	.13	
Total r ² explained	29%	27%

^aSee notes in the appendix of this paper (p.16) for explanation of the acronym notation.

dislike it. Students are much more likely to feel they belong when they evaluate their school staff as pro-desegregation.

For high school students, there is an interesting balance between two variables relating to school atmosphere. On the one hand, black students are more comfortable where racial tension is low;¹ on the other hand, black students are more comfortable where they have been demanding ethnic study courses. Thus, while the absence of physical violence is a good thing, it is better if this is replaced by a constructive outlet for the tension between blacks and whites, rather than by mere apathy. Demands for ethnic studies reflect the fact that black students have been able to establish a political organization and a sense of community identity. The most successful desegregated schools would thus seem to be the ones that have been able to channel black expression of concern into political activity rather than violence.

There is a slight tendency for black high school students to feel less comfortable in school districts with a very high per-pupil expenditures. We suspect that this results from a process similar to that which produces high levels of delinquency and dislike for school in high status black schools. The most prosperous Southern school districts are probably in the largest urban areas and in those areas with very high levels of education. This means that they are also likely to be the most sophisticated and politicized. As we have pointed out before, the ideal situation involves a compromise between too much apathy and too much politicalization.²

Fifth grade students are probably less tolerant of political tension than are tenth grade students. If true, this would explain why there are two interesting reversals between fifth and tenth grade students in the regression analysis. Black students have a stronger sense of belonging in high schools

¹Our indicator of racial tension is the teacher's report of whether fighting has increased since desegregation.

²A statistical study of Southern counties presents some data to indicate that high status counties have more racial tension than low status counties. See Donald Matthews and James Prothro, Negroes and the New Southern Politics (Chapel Hill: University of North Carolina Press, 1966).

where they have demanded ethnic studies; for fifth graders this correlation drops to zero. In similar fashion, fifth grade students are more likely to feel they belong when they are in school districts where there is not an effective community biracial committee. Communities without an active biracial committee are probably more apathetic and less likely to raise issues related to race and desegregation in community forums. We would not expect high school students to be upset by the raising of these issues, and this is in fact the case: there is no negative correlation between the effectiveness of the biracial committee and tenth grade students' sense of belonging.

The remaining variables in a regression analysis are difficult to interpret. There is a strong tendency for fifth grade students to be uncomfortable in schools that have placed considerable emphasis on remedial reading. We speculate that elementary school remedial reading programs tend to label black students as intellectually inferior. The remaining fifth grade variables in Table 1.3 are difficult to interpret. Apparently, schools with team teaching programs successfully integrate their black students. It is also true, however, that schools with ungraded classroom programs--which often occur in combination with team teaching across our sample of schools--tend to produce alienation. One might speculate about the explanations for these two findings, but there is no way to bring evidence to bear to support any speculation, and we have elected instead not to attempt interpretation of these results. Similarly, it was found that students in districts with appointed school boards are more likely to feel alienated--a second finding for which we have no interpretation.

As is usually the case with analyses of these data, the poorest prediction of student attitudes is for fifth grade black students. We explain only 19 per cent of the variance with the seven variables used in the regression equation. Seven variables explained 38 per cent of the variance for the tenth grade black students; this is the best prediction equation of the four race-age groups.

In summary, these two regression equations have highlighted the problems of Southern desegregation. Desegregation is stressful, threatening the students whose early education was in a segregated environment. The

school must respond by adopting liberal racial policies, permitting expression of black concerns in high schools, at the same time limiting the amount of political tension and violence. The school must work to establish a happy medium between too much apathy and too much politics.

The most important predictor of satisfaction for black students is their perception of the acceptance of desegregation by the teachers and principal of the school. Since this is true for other measures of student dissatisfaction as well, we decided to analyze teacher attitudes and student perception of teacher racial behavior in a separate working paper.

White Sense of Belonging

Table 1.4 presents the best seven predictors of white sense of belonging in elementary schools and high schools. The story parallels that of black students in important ways. While school racial composition does not directly enter these equations, it is represented by several proxy variables. White elementary school students are most comfortable when they are attending their neighborhood school (the single best predictor) and when they are attending a school that was white before desegregation. High school students are most comfortable when few of them travel by bus to school, when the school has a white principal, and when the racial composition of the school has not changed in the preceding year. In short, whites, like blacks, are comfortable on their own turf.

The other set of variables related to race relations enters under the heading of school atmosphere. In general, we find a stronger sense of belonging when teachers report that desegregation is going well. (The first two variables--teachers report few desegregation problems and teachers report good intergroup relations with few problems--are very similar.) For high schools, it is important that school dances and elections have not been cancelled as a result of desegregation or racial tension; in elementary schools, it is important that the black students do not report a great deal of anger about perceived mistreatment and injustice. In short, white students say they "belong" where desegregation is working.

The three variables under staff attitudes all suggest that high morale and an easy-going attitude on the part of the staff help white

students adapt to desegregation. Elementary school students are less dissatisfied when the principal expresses the view that tests are not accurate measures of student performance. This suggests that the principal is more sympathetic to the relatively poor test scores of black students; it may also mean that he or she is not anxious to demand that the white students in the school reach some rigid standardized level of performance. High school students have a stronger sense of belonging if the principal considers the white teachers in the school to be good, and if the teachers themselves feel comfortable with the responsibilities they have; that is, they do not say "I feel like I don't have enough training." These last two variables are not related to white fifth grade sense of belonging, and are negatively correlated with black fifth and tenth grade sense of belonging. We suspect that these responses do not reflect self-confidence as much as they do a staff that ignores the problems of black students, and that this is the real reason why white students are comfortable in these schools.

The last variable in the table indicates that white students are more comfortable in elementary schools that have revised their curriculum recently. Elementary school curriculum revision is generally associated with the introduction of more liberal and individualized school policy, with classroom reorganization to maximize individualized instruction, and a general strategy of getting rid of the fixed-chair, teacher-at-the-blackboard style of education. This is consistent with smaller positive correlations between white sense of belonging and the presence of team teaching and ungraded classrooms.

Correlations with other dependent variables (not shown) suggest that these modern reforms of classroom organization have positive effects on white elementary school students. The results are not completely consistent, however, and we can only note that the problem is worthy of further study. We must also point out that these analyses have not shown positive effects on black elementary school students for these variables: for example, presence of ungraded classrooms (a variable correlated with curriculum revision) correlated negatively with black sense of belonging.

Finally, there is a strong association between the percentage of fifth grade white students who feel they belong in their school and white achievement. This, despite the fact that the correlation of sense of belonging with social class is not very strong, suggests nothing more profound than that white students are happier in schools that have succeeded in motivating their students to work hard and perform to the best of their ability on standardized tests. Thus, the white portion of our analysis is less complex than what we have seen for blacks--the major finding is that desegregation is stressful. The best response a school can make to this problem is to solve the problems of desegregation with an eye to minimizing racial tension, developing and maintaining a staff with a high level of confidence and morale, and generally running a "good school," as reflected in higher-than-expected test scores.

Summary

We believe that this analysis of sense of belonging should not surprise the informed and objective reader. Desegregation of Southern schools involves a sudden wrenching of traditional values. It provides a new experience of racial equality that threatens the identity of both white and black students. As long as the school remains the "turf" of one race, the other will be alienated. But the school is not the powerless victim of desegregation; if the staff presents itself to the black students as sympathetic to integration, it can make them feel at home without alienating the whites. The school has other opportunities to minimize student alienation and discomfort as well. The most important way a school can help is by doing the most reasonable and obvious things--by treating black students with respect, providing white students with a competent and confident staff, and working to minimize overt violence without a heavy-handed suppression of the aspirations of black students.

TABLE A

ZERO-ORDER CORRELATIONS OF BELONGING WITH VARIOUS OTHER CHARACTERISTICS

(An "R" following a correlation coefficient indicates that the variable is one of the independent variables in the regression equation that best predicts sense of belonging in students of that age and race.)

Variable Name and Descriptor		Fifth Grade		Tenth Grade	
		Black	White	Black	White
<u>General Community Characteristics:</u>					
LEA999	Border state (low category, Deep South)	-.02	-.01	.05	-.03
PURBAN	Per cent urban in district (1960)	-.13	-.15	.07	-.06
YEARED	Mean years education of district adults (1960)	-.15	-.05	.01	-.03
PNONWH*	Per cent white in district population (1960)	-.17	.10	-.20	.09
TOPUPP	Number of pupils in the school	.01	-.09	.02	-.08
PPDOLD	Dollar expenditure per pupil (district average)	.03	-.06	-.08R	-.03
<u>Student Characteristics:</u>					
ATOTAB	Black students' achievement level	.03		-.03	
ATOTAW	White students' achievement level		.17R		-.02
SES99W	(Same race) socioeconomic status	.01	.10	-.06	-.07
<u>Desegregation Plan Characteristics:</u>					
PWHITP	Per cent white in student body	-.20R	.28	-.38R	.24
PRACEP*	Principal is white	-.15	.27	-.40	.27R
PRIORP*	School was white before desegregation	-.15	.34R	-.44R	.23
RCHNGP*	Racial composition of school changed this year	-.01	-.14	-.02	-.28R
CLSPS*	This is not student's neighborhood school	-.19	-.36R		
TRANS	Per cent of students who take school bus	-.03	-.14	-.28	-.10R
BOTRAP	Per cent of black students who transferred out this year	.05	.00	-.24R	-.22
<u>Community Activities:</u>					
BICOML*	Effective biracial committee on school problems	-.19R	-.09	-.01	-.06

APPENDIX

Table A--Continued

Variable Name and Descriptor		Fifth Grade		Tenth Grade	
		Black	White	Black	White
<u>Staff Racial Behavior:</u>					
TLKIT.*, TCHLI.	Teachers like desegregation	.27R	.05	.35	.04
TLINT.	Teachers and principal like desegregation	.17	.07	.44R	-.07
<u>School Atmosphere:</u>					
RREV9T	Desegregation proceeding smoothly, few problems	.10	.12R	.14	.16
NOPROT	Few or no problems due to desegregation	.11	.14	.04	.23R
WFIGHT*	Amount of fighting has not increased since desegregation	.13	-.02	.23R	.04
RPROBT	No activities cancelled due to race problems			.06	.16R
BRAT9 ^a	(Other race) students do not feel mistreated	.09	.14R	.09	.07
ETHNST	Minority students demand ethnic studies	.03	.04	.12R	-.08
<u>Staff Attitudes:</u>					
TEST9P	Tests are not good indicator of student ability	.05	.07R	.06	-.02
LACKTT	Teachers do not lack training	-.07	.00	-.13	.19R
WTQUAP	White teachers in this school are high quality	-.04	.01	-.13	.19R
<u>Programs:</u>					
TEAMSY	Adequacy of size of team teaching program	.07R	.08		
UNGRSY	Adequacy of size of ungraded classrooms	-.10R	.07		
READSY	Adequacy of size of remedial reading	-.15R	.02	-.02	-.15
CREVSY	Adequacy of size of major curriculum revisions	-.06	.13R	.04	-.06
<u>Miscellaneous:</u>					
SBSELD	School board is appointed	-.10R	-.12	.19	-.05

^aCorrelations are BRAT9B with BLONGW and BRAT9W and BLONGB.

Notes on Variable Names and Descriptors Used in
Correlation and Regression Tables

(for Tables 1.3, 1.4, and A)

The last letter in a variable acronym indicates from whom the information was obtained:

P,X,Y,Z = Principal
T = Teachers
G = Guidance Counselor
D = ESAP District Director
L = Community Leaders
B = Black Students
W = White Students

If the information is from the students' questionnaire, and the table entries are black responses correlated with black belonging, etc., and white responses correlated with white belonging, etc., then the last letter of the variable name has been replaced by a period.

Example: TLINT.

The variable name column contains only one entry if the variable name is the same on the data tapes for both grade levels. If not, the fifth grade variable name is on the left.

Example: ESTOPT, HSTOPT

In some cases, the variable has been inverted in an attempt to make variables in a given category consistent with each other. Such variables are marked with an asterisk.

Example: PNONWH*

In these tables we report that fifth grade black sense of belonging is correlated 0.17 with the per cent white of the community; the data as they exist on our tapes show the correlation as +.17 with per cent nonwhite.

WORKING PAPER 2

TEACHER PREJUDICE AND TEACHER BEHAVIOR IN DESEGREGATED SCHOOLS

by

Ruth E. Narot

Introduction

At various points throughout our analysis, we have seen that teacher racial attitudes play an important role in establishing the quality of social relations in the school. For example, Working Paper 1 shows that black students are less likely to say, "I feel I don't belong in this school," when they perceive their teachers and principal as favoring integration. Also, in Chapter 2 of Volume I, we reported that teacher or principal attitudes about integration influenced the attitudes of most subgroups of students. If schools could improve the racial attitudes of their faculties, they would make blacks more comfortable, and also improve the general racial climate.

The question we address in this paper is "Can the racial attitudes and racial behavior of teachers be changed?" One school of thought is that racial attitudes and racial behavior are deep-seated, resistant to change; other research has drawn the opposite conclusion--that attitudes and behavior can be changed.

Our general hypothesis is that the truth lies between these two views--that we can distinguish between different kinds of racial attitudes and between attitudes and behavior, and we will find that while some attitudes or behavior are not easily changed, others are.

The problem can be broken into two simple analytic parts: (1) the attitudes of teachers about blacks, both in general, and specifically as students, and (2) their behavior toward students as measured by the reports of the students and other teachers. Teachers often have certain prejudices

against blacks, but behavior reflecting this is not necessarily acted out in school and perceived by students. It is possible that schools can change the behavior of teachers and their reaction to integration without overhauling their ingrained feelings of racial prejudice. To test this, we will look at a variety of dependent variables, all of which pertain in some way to teacher racial attitudes and behavior. The analysis is done for both the fifth and tenth grades. Although the basic findings are the same, the sets of variables are slightly different for the two grades.

At the tenth grade level, we use six dependent variables. The first is a teacher racial prejudice scale. It deals with attitudes about blacks in general and has nothing to do with school integration or students per se. The scale consists of the following items with which the respondent had to agree or disagree:

1. The amount of prejudice against minority groups in this country is highly exaggerated.
2. I would like to live in an integrated neighborhood.
3. The civil rights movement has done more good than harm.
4. Blacks and whites should not be allowed to intermarry.
5. If you had to choose one factor which accounts for failure of the Negro to achieve equality, which would you choose?
 - a) Lack of initiative and drive.
 - b) Restrictions imposed by a white society.

The scale is coded so that a higher score indicates more liberal attitudes.

The next dependent variable is a school-related prejudice scale, specifically concerned with students and integration. It is composed of the following:

1. Some people say that black students would really be better off in all-black schools. What do you think?
2. What about white students--do you think that whites are generally better off in all-white schools?

3. Do you feel that you should let your students know how you feel about race relations or would that be improper?
4. What proportion of your minority group students are performing adequately by your standards for this grade level?
5. What proportion of your minority group students would you say have the potential to attend the largest state university in your state?

This scale is a combination of attitudes and behavior. In it, there are general questions on whether school desegregation is valuable, as well as an indication of how racial issues are handled in class. As with teacher prejudice, a high score on the school-related prejudice scale denotes liberal racial attitudes.

The next three dependent variables are others' perceptions of a teacher.¹ The first is the percentage of teachers in a school who say that their fellow white teachers like integration. We also use a student evaluation of staff attitudes: the percentage of black and white students who say that their school staff is pro-integration.

These measures are worded as if they are perceptions of attitudes, but, the attitudes of others cannot, of course, be observed. There must be some action--a conversation, for example--from which the attitude can be inferred. Therefore, we interpret these as measures of teacher behavior, rather than of teach attitudes.

The last dependent variable is a teacher evaluation of how well desegregation is working in the school. This measures neither a simple attitude toward blacks, nor a simple perception of the facts; rather, it measures, in part, the mind-set with which the teacher evaluates the school situation. It is a school-specific racial attitude measure, similar to the school-related prejudice scale. Thus, the variable is to some degree a measure of how well desegregation is actually working, and in part a measure of the teacher's own receptivity and liberalism. The scale is composed of the following items:

¹The reader should bear in mind that these perceptions of other's behavior are highly influenced by the reporting student or teacher's own attitude.

1. On the whole, how would you evaluate the way in which desegregation is working in your school?

No problems serious problems.

2. How would you describe the contact between minority group and white pupils in your school?

Very tense many intergroup friendships.

3. Here are a list of things that have happened in some desegregated schools. Please indicate whether or not each of these things happened at your school.

- a) white students are becoming less prejudiced.
- b) new educational programs are improving school.
- c) all students are learning more.

A high score on this scale is a positive evaluation of desegregation.

For the fifth grade analysis, three variables change. A teacher's evaluation of other white teachers was not used. In addition, for fifth graders we have the students' perceptions of their own teachers. It is coded as the percentage of students who say that their own teacher is pro-integration.

Our first hypothesis is that the measures are not unidimensional. This can be seen by looking at the intercorrelations in Table 2.1 and 2.2. The fifth and tenth grade tables show approximately the same thing--that teacher prejudice is not highly correlated with other measures of staff racial attitudes. In high schools, the correlation between teacher prejudice and the percentage of black students who say that the staff is pro-integration is .29. The correlation of teacher prejudice and their evaluation of desegregation is only .07.

For the tenth grade, the correlation between the percentage of whites who say that the staff supports integration and the percentage of blacks who say the same thing is .34. This is low enough that we can assume that this judgment is the result of different factors for blacks and whites. Teacher prejudice is more strongly associated with the perceptions of white students than with those of blacks.

TABLE 2.1

INTERCORRELATIONS OF SIX TEACHER ATTITUDE VARIABLES
(Tenth Grade)

Variable	Teacher Prejudice Scale	School- related Prejudice	Per Cent Teachers feel White Teachers like Integration	Teachers feel integration is working well	Per cent White students feel staff likes integration	Per cent Black Students feel staff likes integration
Teacher prejudice scale	--	+.84	+.42	+.07	+.43	+.29
School-related prejudice			+.53	+.28	+.48	+.33
Per cent teachers feel white teachers like integration				+.29	+.49	+.25
Teachers feel integra- tion is working well					+.23	+.09
Per cent white students feel staff likes integration						+.34
Per cent black students feel staff likes integration						--

TABLE 2.2

ZERO CORRELATIONS BETWEEN SEVEN DEPENDENT VARIABLES
(Fifth Grade)

Variable	Teacher Prejudice Score	School- Related Prejudice Scale	Teachers' Evaluation of Deseg- regation	Per Cent White Students feel Staff Likes Integration	Per Cent Black Students feel Staff Likes Integration	Per Cent White Students Feel Teacher Likes Integration	Per Cent Black Students Feel Teacher Likes Integration
Teacher prejudice score	1.00	.70	.32	.28	.18	.23	.16
School-related pre- judice scale . . .		1.00	.49	.33	.24	.21	.22
Teachers' evaluation of desegregation .			1.00	.18	.24	.22	.17
Per cent white stu- dents feel staff likes integration				1.00	.42	.47	.24
Per cent black stu- dents feel staff likes integration					1.00	.07	.46
Per cent white stu- dents feel their teacher is anti- integration . . .						1.00	.21
Per cent black stu- dents feel their teacher is anti- integration . . .							1.00

In elementary schools, the same pattern is evident. Teacher prejudice is more strongly correlated with their evaluation of desegregation ($r = .32$) than it was in high schools. The fifth grade teacher prejudice scale is not highly correlated with either white or black students' perceptions of the staff. As in the tenth grade, the correlation is higher for whites than for blacks. The zero-order r between teacher prejudice and black student perceptions of staff attitudes is .18. The same correlation for white children is .28.

The correlation between the percentage of whites who say the staff is pro-integration and the percentage of blacks who say the same thing is .42. This is stronger than the same relationship in high schools.

Background Predictors of Teacher Attitudes and Behavior

The correlation between items indicates that attitudes and behavior are not the same. We assume that personal feelings about blacks are primarily the result of personal and community background characteristics--race, age, sex, education, region--over which the school has little control. At the same time, we also feel that these factors should have less impact on teacher behavior.

We regressed seven background variables on the entire set of dependent variables for both the fifth and tenth grades and calculated the best equation using those variables. Most of the background information we have is on students. For teachers, we know only a few bits of information: age, sex, race, and education level. Aside from controls for region and urbanism, the seven control variables we selected are the only information we have on teachers' personal characteristics. The best equation is the one that maximizes the percentage of variance explained and minimizes the standard error of the estimate.

We tried to keep the equations short, deleting variables unless they had a noticeable effect on the total variance explained. Beta weights are not given for variables that were dropped from the equation. Many of these variables are highly correlated with each other; inclusion of one may eclipse the effect of another. Thus, the urban percentage may be

strong in one equation, the mean years of education strong in another. For our purposes, it is not important to assess why one measure works in one equation but not in another.

The point of the analysis is twofold. First, we used it to select a good equation to control for the effect of background factors that are logically prior to any school effects. We will use these equations as controls when we explore other school and community effects. The second purpose of these equations is to show that the total impact of background variables, used in the most efficient of combinations in each case, varies considerably from one dependent variable to another. We see the same pattern for both the fifth and tenth grades. Background variables explain a large percentage of the variance in teacher prejudice, and essentially none for measures of behavior specific to the school.

At the tenth grade level, the seven background variables explain 39 per cent of the variance in teacher prejudice. Yet they account for only 9 per cent of the variance in the black student's perceptions of staff attitudes, and for only 3 per cent of the variance in the teacher's evaluation of desegregation.

In the fifth grade, the pattern of the percentage of variance explained is identical to that in high school. The figures are given in Table 2.4. The independent background variables explain 40 per cent of the variance in teacher prejudice, 20 per cent of school-related prejudice, and only 7 per cent of the teacher's evaluation of desegregation. Background variables have virtually no impact on student perceptions.

The background variables that do have an effect act in the same way for both grades. The larger the number of whites on the staff, the more likely the staff is to be prejudiced. This might be explained by the fact that whites are more prejudiced, but it may also be true that whites in schools with all-white staffs are more prejudiced than those in schools with integrated staffs. In the Deep South and in rural districts, attitudes are less tolerant.² The larger the number of whites on the staff, the more black students see the staff as not supporting integration. White students are less affected by staff racial composition.

²The variable of "Upper South" is measured by per pupil dollar expenditure, which is greater outside the Deep South.

TABLE 2.3

MULTIPLE REGRESSION OF BACKGROUND CHARACTERISTICS ON SIX DEPENDENT VARIABLES (BETAS)^a
(Tenth Grade)

Background Variables	Teacher Prejudice Scale	School-Related Prejudice	Per cent Teachers Feel White Teachers Like Integration	Teachers Feel Integration Is Working Well	Per Cent Black Students Feel Staff Likes Integration	Per Cent White Students Feel Staff Likes Integration
Per cent white teachers . . .	-.47	-.30			-.18	
Per cent male teachers . . .			-.09		+.10	
Per cent teachers under 35 years old	+.21	+.27	+.16		+.15	+.21
Per cent teachers with more than 4 years college				-.08	+.10	
Mean years of education in district . . .	+.14					
Per Cent urban in district .	+.24	+.31	+.25	+.10	+.08	+.24
Dollars spent per pupil in district . . .	+.10	+.19	+.22	-.07	+.13	+.19
Total (r^2)	.39	.31	.13	.03	.09	.14

^a Betas are standardized regression coefficients.

TABLE 2.4

MULTIPLE REGRESSION OF BACKGROUND CHARACTERISTICS ON DEPENDENT VARIABLES (BETAS)^a

(Fifth Grade)

Background Variables	Teacher Prejudice Scale	School Related Prejudice	Teachers Feel Integration Is Working Well	Per Cent Black Students Who Say Staff Likes Integration	Per Cent White Students Who Say Staff Likes Integration	Per Cent Black Students Who Say Teachers Like Integration (-TLKITB)	Per Cent White Students Who Say Teachers Like Integration (-TLKITW)
Per cent teachers who are white .	-.53	-.34	-.19	-.13	-.13	-.13	
Per cent male teachers . .	+.13	+.11	+.09				
Per cent teachers under 35 years old	+.12	+.08	+.12		+.10		+.08
Per cent teachers with more than 4 years college				-.09			
Mean years of education in district . .			+.03	+.05	+.13		+.08
Per cent urban in district.	+.21	+.19					+.04
Dollars spent per pupil in district . .	+.35	+.24		+.06	+.17	+.09	
Total (r^2)	.40	.20	.07	.03	.07	.02	.02

^aBetas are standardized regression coefficients.

Other Predictors of Staff Attitudes

Having controlled for background, we can create a list of variables that we predict might have an effect on teacher attitudes. They were selected as obviously logical candidates and are: principal's race and racial liberalism, and the degree to which the principal is active in the school; the level of civil rights activity in the community; various human relations programs; the length of time the school district has been desegregated; and the racial composition of the student body.

For each of the dependent variables, we ran regressions that tested all of the factors mentioned. Each new variable is added to the control equations given in Tables 2.3 and 2.4. We eliminated all variables that do not improve the predictive value of the equation, or have a negligible beta weight. By this process, we chose the best equation for each dependent variable. The criterion is the same as that used previously: the best equation is one which maximizes the percentage of variance explained and minimizes the standard error of estimate. In each case, we reported beta weights only for those variables that comprised the best final equation. Betas that were left unreported were so small that they did not improve the predictive value of the equation to any noticeable degree. The added variables are reported in Tables 2.5 and 2.6.

The hypothesis supported in Tables 2.3 and 2.4 is that teacher prejudice is explained to a great extent by background characteristics, while attitudes and behavior specific to school are less a result of these things. Conversely, we expect that these other principal, school, and community variables will have more impact on school-related variables than on teacher prejudice. This is confirmed by the "additional r^2 squares" in Tables 2.5 and 2.6. Each r^2 in these tables is the percentage of additional variance explained by the variables in that table; the variance explained by background variables is not included.

This pattern is particularly strong in high schools. Only four school, community, and principal variables enter the equation of teacher prejudice with betas of .10 or better, and collectively they explain an additional 9 per cent of the variance. This compares to 15 per cent for school-related prejudice, and to 23 per cent for black student report of teacher behavior.

TABLE 2.5
REGRESSION OF PRINCIPAL, SCHOOL, AND COMMUNITY VARIABLES ON SIX MEASURES OF TEACHER ATTITUDES
(Tenth Grade)

Variable	Teacher Prejudice Scale		School- Related Prejudice Scale		Per Cent Teachers Feel White Teachers Like Integration		Teachers Feel Integration Is Working Well		Per Cent Black Students Feel Staff Likes Integration		Per Cent White Students Feel Staff Likes Integration	
	r	B	r	B	r	B	r	B	r	B	r	B
Principal's race (1 = white; 2 = black) . .	+.36	+.15	+.35	+.17	+.29	+.20	+.20	+.23	+.41	+.33	+.31	+.33
Racial attitudes of principal (+ = pro-integration)	+.36	+.23	+.39	+.16			+.13	+.08	+.37	+.28	+.40	+.17
Principal dislikes integration			-.27	-.11	-.37	-.23					-.31	-.10
Principal talked to teachers re: integration			+.30	+.11					+.22	+.15		
Years white schools integrated	+.02	+.15					+.21	+.13				
Per cent teachers no experi- ence with minority groups .					-.08	-.08	-.30	-.27			-.11	-.14
Per cent white students in school							-.05	+.16			-.09	+.23
Civil rights activity			+.35	+.16	+.29	+.12	+.12	+.11				
Active district biracial com- mittee (+ = less active) .	+.18	-.13										
Liberal racial programs					+.24	+.09						
White students feel school biracial committee effective					+.12	+.12	+.27	+.22				
Teacher prejudice scale (PREJUT) (+ = low prejudice)	Not entered		Not entered		+.42	+.23	Negligible		Negligible		+.43	+.25
Additional r^2 (excluding teacher prejudice scale)	.09		.15		.21		.20		.23		.20	

TABLE 2.6

REGRESSION OF PRINCIPAL, SCHOOL, AND COMMUNITY VARIABLES ON DESIGNATED MEASURES OF TEACHER ATTITUDES
(Fifth Grade)

Variable	Teacher Prejudice Scale		School- Related Prejudice		Teachers Feel Integration Is Working Well		Per Cent Black Students Feel Staff Likes Integration		Per Cent White Students Feel Staff Likes Integration		Per Cent Black Students Feel Teachers Like Integration		Per Cent White Students Feel Teachers Like Integration	
	r	B	r	B	r	B	r	B	r	B	r	B	r	B
Principal's Prejudice Scale	+ .26	+ .11	+ .31	+ .19	+ .14	+ .16	+ .22	+ .09	+ .25	+ .13			+ .18	+ .10
Principal's race; 1=white, 2=black	+ .42	+ .19	+ .35	+ .14			+ .27	+ .49	+ .24	+ .11	+ .17	+ .05		
Principal says busing has no particular effect on his school							- .11	- .15	- .11	- .10	+ .06	+ .08	- .09	- .08
Principal feels he can't do much to affect school					- .17	- .13								
Per cent white students in school							- .25	- .17			- .21	- .18		
Prior racial composition of school; 1=white, 2=black	+ .18	+ .11	+ .16	+ .09	+ .16	+ .13					- .02	- .07		
Per cent of teachers with no experience with minority students . . .					- .11	- .18			- .16	- .44	+ .02	- .05	- .31	- .68
Civil Rights Activity Scale (+ = more activity)	- .19	- .13	- .18	- .10	+ .17	+ .14					- .11	- .10		
School biracial committee (+ = less activity) . . .									- .05	- .07			- .08	- .14
Activeness of district bi- racial committee (+ = less active)	- .15	- .18	- .09	- .07										
Teacher prejudice Scale (+ = low prejudice) . . .	Not entered		Not entered		Negligible $r^2 = .001$		Negligible $r^2 = .001$		+ .28 $r^2 = .02$	+ .18	+ .16 $r^2 = .001$	+ .08	+ .23 $r^2 = .03$	+ .21
Additional r^2 excluding Teacher Prejudice Scale.	+ .07		+ .12		+ .10		+ .10		+ .11		+ .05		+ .19	

For example, having a black principal, or a principal who acts to influence the racial behavior of the teachers, has some relationship to the teacher's level of prejudice, but a noticeably stronger relationship to the way black students perceive teacher attitudes.

Prejudice as a Control Variable in Predicting Behavior--
Tenth Grade

We can argue that these school, community, and principal factors have an impact on school-related variables only because we have not controlled on actual teacher prejudice. It is perfectly reasonable to argue that student perceptions of teacher prejudice are not so much the result of background factors, but that they follow directly from the actual level of teacher prejudice. Therefore, we use teacher prejudice as an independent variable to explain teacher behavior. Teacher prejudice is entered in the last four equations in the table simultaneously with other school and community variables. We can compare the betas to see the relative importance of prejudice and of other school factors in influencing teacher behavior. The most striking result is with tenth grade black student perceptions of staff attitudes. When teacher prejudice is added to the regression equation, the beta is negligible. In this case, it is completely eclipsed by the effect of the principal. When we control for principal's race, racial attitude, and behavior, there is no relationship between the mean prejudice level of teachers and the percentage of blacks who say that their school staff supports integration.

Teacher prejudice has no impact when it is entered in the equation on teacher's evaluation of desegregation. Personal prejudice is not related to how well teachers feel integration is progressing in their school.

Teacher prejudice does have a significant impact on the percentage of teachers who feel that the other white teachers favor integration and on the percentage of white students who feel that their staff favors integration; both of these sets of perceptions are related to actual teacher prejudice. However, teacher prejudice does not eclipse the effect of other variables, as the equations show that school, community, and principal variables still have an effect. Teacher prejudice, then, either has no effect itself or

fails to cancel out the effects of other variables. Thus, we have assembled persuasive evidence for the main hypothesis of this paper: there are community, school, and principal factors that influence, not the actual personal prejudice of the teacher, but the way in which the teacher's level of prejudice is converted into behavior, and the way in which that behavior is perceived.

The Effect of School and Community Factors--
The High School

Let us now reexamine Table 2.5 to see which variables are having the most influence on school-related teacher attitudes and behavior. The strongest variables in these equations are those that involve the principal. Principal's race enters all six equations. If the principal is black, teachers are less prejudiced. (Since, in at least some cases, the principal is free to choose his staff, this may reflect recruitment strategy rather than influence.) Teachers are also perceived as less prejudiced both by other teachers and by students. In addition, when the principal is black, teachers are more positive in their evaluation of desegregation. The principal's racial attitudes enter all six equations either as a scale of principal prejudice items, or as a single item measuring the principal's response to desegregation. Both of these variables enter the equation for white students' perception of staff. In general, the more racially liberal the principal, the more liberal are the teachers, and the more favorable the student's perception of them.

An additional principal variable, indicating that he has spoken to the faculty about racial issues, is an important predictor of black student perceptions of the staff. Principal's race, racial liberalism, and willingness to talk with the teachers in the school are the three largest predictors of black student perceptions of staff attitudes. Together, the three principal variables explain 23 per cent of the variance.

The length of time that a school district has been integrated has a positive effect on teacher prejudice, as well as on the teachers' evaluation of desegregation.³

³A related variable, per cent of teachers reporting they have never taught students of the opposite race, has badly skewed marginals, and hence should not be interpreted.

The racial composition of the school is a good predictor of white student perceptions and teacher's evaluation of desegregation. The greater the percentage of whites in the school, the more whites feel that the staff supports integration, and the better the teacher's evaluation of desegregation. Both teachers and white students feel more relaxed about integration when they are in the majority.

The last set of variables that affect teacher behavior deals with civil rights activities and human relations programs in both the school and the community. The level of civil rights activity in the local community is measured with a two item scale. It has a positive effect on three dependent variables: (1) school-related teacher prejudice, (2) teacher's evaluation of the attitudes of other teachers, and (3) teacher's evaluation of desegregation. High school teachers appear to react to pressure from the black community.

We had community leaders evaluate the effectiveness of local biracial committees. Their responses were coded in such a way that a higher score indicates a less active committee. Therefore, the negative beta with teacher prejudice means that if the committee is rated as active, teachers have a more liberal mean prejudice score. This only entered one equation--teachers were less prejudiced in communities with a more active biracial committee.

We created a scale of the number of human relations programs in the school. It is a good predictor of teacher's evaluation of other teachers. The students were asked to evaluate the effectiveness of their school's biracial student committee (if one existed). White students' saying that the biracial committee is effective turns out to be a good predictor of teachers' saying that the white teachers are pro-integration, and of teachers' giving a positive report on the desegregation process in their school.

The pattern of r^2 gains is quite impressive in the tenth grade. Teacher prejudice is primarily the result of background variables beyond the control of the school; teacher behavior is influenced more by school and community factors.

Predictors of Teacher Behavior--Fifth Grade

The first part of this hypothesis is as strong in elementary schools as it is in high schools. Table 2.4 shows that teacher attitudes are largely determined by background variables, while measures of teacher behavior are not influenced by them at all. The problem arises when we try to see what factors do explain teacher behavior. Adding school and community variables to the equations does not increase the r^2 value to a large degree for most of the dependent variables. It appears that we have not yet found those factors that influence the behavior of elementary school teachers, or that their behavior is more random.

It is not the case that attitudes and behavior are more closely linked for fifth grade teachers. To make this more explicit, we have calculated not only the betas for teacher prejudice (where it is used as an independent variable), but also the unique percentage of variance it explains. For black perception of staff attitudes, it explains .1 per cent of the variance. The relationship is stronger for whites, but teacher prejudice is still not more important than other school and community factors. With white students who say that their teacher supports integration, prejudice explains 3 per cent of the variance, while four other school and community factors explain 19 per cent. For the white students' evaluation of the total staff, teacher prejudice explains 2 per cent of the variance, while five other school and community factors explain 11 per cent.

Teacher behavior in elementary schools is no more linked to their prejudice than it is in high schools. The problem in elementary schools is that, in general, we can predict teacher behavior less well. This, we suspect, has most to do with the reliability of reports. In elementary schools, we have no teacher reports of other teachers; we have only the reports of 11-year-old students on the behavior of their teachers. We are able to explain the least per cent of the variance in the report of black children. It seems quite difficult for a black child of that age to cope with racial hostility very well, let alone to determine whether the teacher is prejudiced. By high school, students are in a much better position to make those judgments. This is supported by the fact that

approximately 68 per cent of both white and black elementary school children say that their staff supports integration. Only about 48 per cent of high school students are willing to say this.

We could say from the data itself that the behavior of elementary school teachers is less influenced by school and community factors than is the behavior of high school teachers, but it makes more sense to say that, here, our reports of teacher behavior are less reliable. The safest way to interpret the fifth grade results is to look for the ways in which they are consistent with what we found for high schools.

In high schools, we find that principals are extremely important in changing both the attitudes and behavior of teachers, and are particularly important to the way blacks perceive their teachers. The same is true for elementary schools. In the fifth grade analysis, we use different measures of the principal's racial attitudes. We created a "super-scale" of principal prejudice which includes several of the measures that were used separately for high schools. The items in the scale are listed in an appendix to this paper. In addition, we asked if the principal sees any effects on his school as a result of busing.

At least two out of the four principal variables are good predictors of all seven dependent variables. If the principal is black and/or liberal, then teacher attitudes are more liberal, they are reported to be more liberal by students, and the teachers give a more favorable report on the progress of school desegregation.

We also found that, in high schools, experience with integration is a positive force. The impact of teacher experience with blacks is also large at the elementary school level. The greater the percentage of teachers who have never worked with blacks, the worse is the teacher's evaluation of desegregation, and the fewer the black students who see the staff as pro-integration. The relationship is even stronger for whites. The beta between the percentage of white students who rate their teacher as being in favor of integration and the percentage of teachers with no experience with blacks is $-.68$.

Black and White Reports of Teacher Behavior

For the most part, the factors that influence students' reports of their teacher's racial attitudes are quite similar for blacks and whites. The most noticeable difference in both grade levels is that actual teacher prejudice influences whites more than it does blacks. The most striking evidence in Tables 2.5 and 2.6 is that white students are more sensitive to the teacher's true attitudes about race.⁴ On the other hand, black students may be more sensitive to the actual behavior of teachers and principals. If the principal sets a tone of fairness and tolerance for the school, and teachers in general conform to these standards, blacks will feel that the teachers are liberal.

Conclusion

Racial prejudice in teachers is largely the result of factors such as race, age, sex, education, and geography. In both high schools and elementary schools, we explain 40 per cent of the variance in teacher prejudice with background variables alone. Other school and community factors do not add significantly to the predictive value of our equations. Schools are not likely to be successful in changing ingrained feelings of racial prejudice.

The way that teachers behave in an integrated school is something quite different. We find that teacher behavior is not determined by background factors and that other characteristics of the school are more influential in determining how they act than are their own attitudes about blacks. The effect of school and community variables on both teacher and pupil reports of teacher's racial behavior indicate that such behavior can be changed.

The strongest finding for both grade levels is the importance of the principal. Whether by example, direct action, or as a tone-setter for the school, the principal has a very important effect. Martha Turnage, in a recent work, argues that the principal is the primary agent of social

⁴ A note of caution: As we noted earlier, white student perceptions are influenced by the student's own attitudes.

change in a desegregated school.⁵ Our data strongly support her contention. Our analysis says that a black and/or racially liberal principal who takes an active role in the school has a large influence on the way teachers respond to desegregation. In high school, we find that the principal is the important factor in the degree of support black students feel from the staff. This may simply be caused by the fact that school districts that have and keep black or liberal white principals are already more liberal. If, however, this is not a result of self-selection, this paper points up the danger in the tendency of Southern school districts to fire or demote black principals as part of the school desegregation process.

Finally, at least in high schools, teachers tend to respond positively to pressure exerted in their community by local civil rights groups and biracial committees. In all, the results of the analysis should be quite encouraging to policy makers interested in racial integration in Southern schools.

⁵The Principal: Change-Agent in Desegregation (Chicago: Integrated Education Association, 1972).

APPENDIX

Fifth Grade Principal Prejudice Scale

The fifth grade principal prejudice scale is composed of the following:

1. Whether he agreed or disagreed with the following statements:
 - a. "The amount of prejudice against minority groups in this country is greatly exaggerated."
 - b. "You would like to live in an integrated neighborhood."
 - c. "The civil rights movement has done more good than harm."
 - d. "Blacks and whites should not be allowed to intermarry."
2. His responses to the following questions:
 - a. Which accounts most for the Negro's failure to achieve equality? A lack of initiative and drive, or the restrictions imposed by a white society?
 - b. Are white students better off in all-white schools or racially mixed schools?
 - c. Are black students better off in all-black schools or racially mixed schools?
 - d. To what degree do you like or dislike desegregation?

Fifth Grade Civil Rights Activity Scale

The fifth grade civil rights activity scale is composed of the following:

1. Civil rights leaders' responses to the following questions:
 - a. How much civil rights activity has there been in your city in the past decade and how much trouble, if any, results?
 - b. How good a job is the school system doing in educating white and black children?
 - c. How pleased do you think the black community is with the schools?
 - d. How much protest has there been about school busing?
 - e. How much resistance to desegregation has there been by the school district, the local political leaders, the white business leaders, and how much organized white opposition?
2. The School district director's (superintendent's) answers to:
 - a. Has there ever been a boycott in this district because of desegregation?
 - b. Are there any segregated private schools in the community?
 - c. Has there been any effort made to defeat the superintendent or school board in an election since desegregation of schools?

Correlation of Items in Civil Rights Activities Scale
(Controlling for Per Cent Urban and Dollars Spent Per Pupil)

	Civil Rights Activity	Educational Quality of Schools	Black Community Feelings	Busing Resistance	Total Resistance to Desegregation	Opposition to Desegregation
Civil rights activity	--	.15	.25	-.17	-.43	-.32
Educational quality of schools		--	.39	-.35	-.33	-.08
Black community feelings			--	-.45	-.29	-.22
Busing resistance				--	.29	.12
Total resistance to desegregation					--	.31
Opposition to desegregation						--

WORKING PAPER 3

HOW LARGE IS THE EFFECT OF SCHOOL ON ACHIEVEMENT TEST PERFORMANCE?

by

Robert L. Crain

Introduction

The debate over the importance of the quality of education in determining school achievement continues to the present day. A number of social scientists have argued that improving the school will have only a negligible effect upon the achievement scores of the students in it. We find in our analysis that school quality does make a difference in achievement, although whether such a difference should be interpreted as substantial or negligible is a matter of interpretation and of values. Since the issue is of considerable interest, we will discuss the findings of our analysis in some detail.

When, during the analysis of ESAP, we asked ourselves whether the effects of school quality as we observed them seemed large or small, we realized that "large" and "small" were relative terms, and that our reaction to the data depended a great deal upon the way in which the data were presented. This paper, therefore, is not so much a statistical analysis of new data (our data, and our analysis methods, add little to what has already been done with the data of the Coleman report¹), as it is an experiment in graphic methods of presenting data.

¹James S. Coleman et al., Equality of Educational Opportunity (Washington, D.C.: U.S. Government Printing Office, 1966), Chapter 3.

The conventional judgment rendered about the Coleman report may be summarized as follows:

1. Student family characteristics--particularly family socioeconomic status--exerts an overwhelming influence on student test performance.
2. If school has an effect on the student, it is mainly through the socioeconomic status of the student's classmates; the student in a middle-class school will perform better than he would if he were in a working-class school.
3. School characteristics that can be influenced by policy decisions (ranging from racial composition to compensatory programs to per-pupil expenditures) have negligible impact. Either there are no differences in quality of education between schools or else these differences are irrelevant.

We shall look at each of these three statements in turn, with different methods of data presentation. We will attempt to determine how strong these relationships are, or more precisely, how strong they appear to be when we examine them.

The Impact of Socioeconomic Status--Looking at Tenth Grade
Black Students with a Scatterplot

In Chapter 3, we reported that 41 per cent of the variance in high school black achievement means could be explained by non-school factors, primarily by the socioeconomic status of the black students themselves. This variance exceeded the variance which could be uniquely assigned to any of the school quality measures. In this sense our results are quite consistent with Coleman's. But we are not saying that socioeconomic status explains achievement. The issue is how large is 41 per cent of the variance.

When we constructed our best index of mean black socioeconomic status, using the percentage of students reporting that their mother was a high school graduate, that their family got a daily newspaper, and that they lived with both their parents, along with their mean number of siblings and the percentage of the residents in their county who lived in urban areas, we found that this composite index of black student social

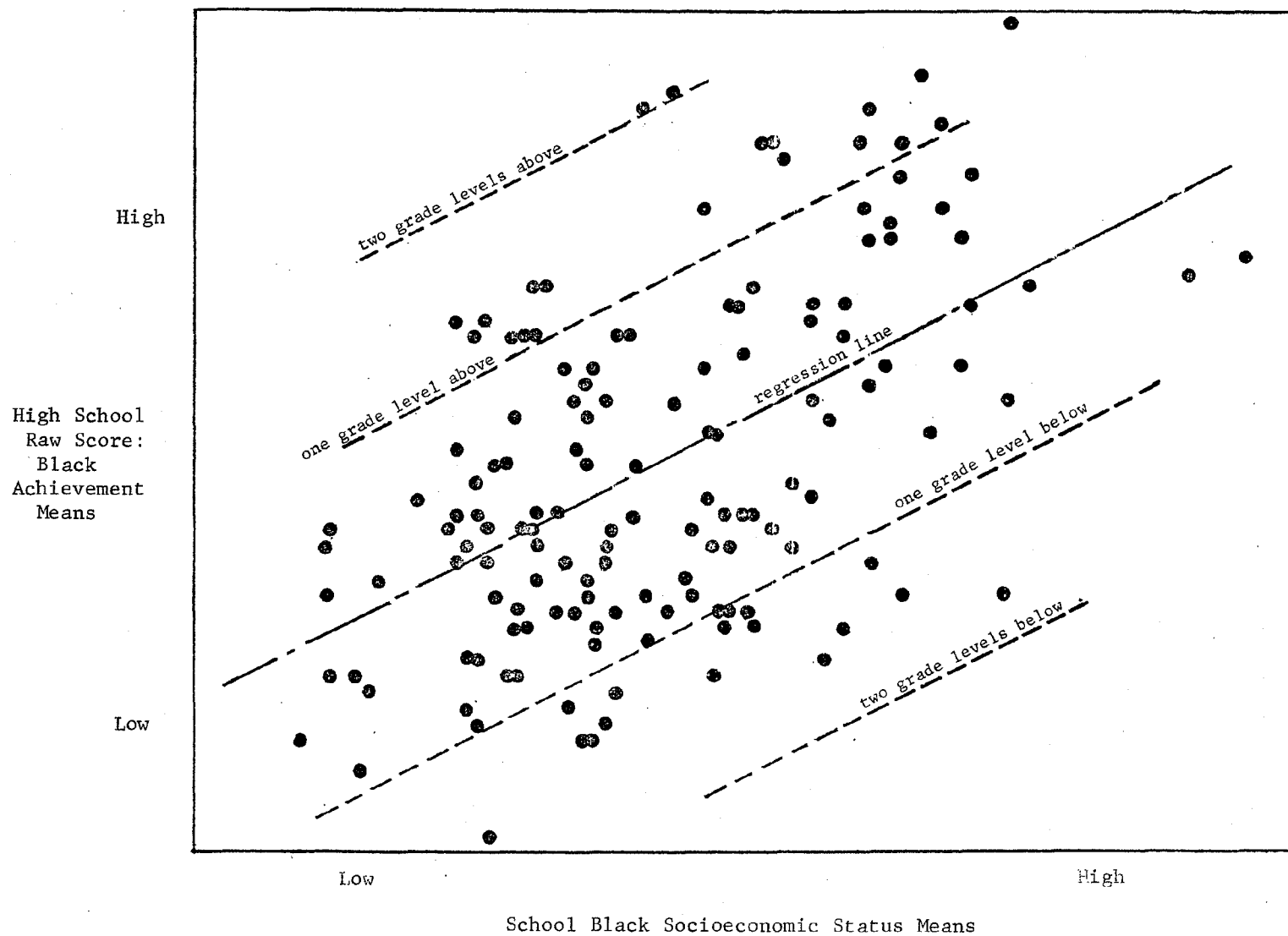


Fig. 3.1--A Plot of Social Status and Achievement for Black High School Students

background has a correlation of .55 with the mean black achievement score, explaining 30 per cent of the variance. Note that this is the combined effect of two different factors: the direct link of the individual student's background to his achievement, and the indirect link resulting from the fact that each student's performance may be affected by the socio-economic background of the other black students in the school. For the sake of conservatism, the combined effect of both the direct and indirect links will be used as our measure of the effect of family background. The correlation we obtained is similar to that found by Coleman.

In Figure 3.1, we present a scatterplot of this correlation between the mean family social status and the mean achievement of black students for each of the 145 high schools where seven or more black students were tested. The horizontal axis is our composite social status score, increasing from left to right. The vertical axis is mean black achievement converted to approximate grade level units.² The regression line of background on achievement is shown by a long-short dashed line (— —) going from the lower left to the upper right. This line is banded above and below by four dashed lines (—) representing school achievement of one and two grade levels above and below expectation (although we can assume that some of the very high and very low achievement scores shown in the graph are the result of sampling error when only 8 to 12 students were tested in predominantly white schools³).

Looking at the graph, we see that social status does make a big difference. The low status schools on the left of the graph usually have low achievement, and the very best of the low status schools have test scores that are not up to the level of the schools with high status students.

²The achievement test data for the Coleman report was analyzed to compare sixth grade to ninth grade, and ninth grade to twelfth grade performance. That report showed one individual level standard deviation (11 correct answers on our test) was almost exactly equal to three grade levels; the same equality was used here.

³ But most of the extreme scores are not sampling error. Even with only 7 students in a score, sampling error would result in only 5 per cent of the schools lying more than 1.4 grade levels above or below the regression line. Other schools, of course, had samples of up to 50 black students.

But we also see that "sociology is not destiny." Twenty of the 145 schools are one grade level above expectation; two of these are two grade levels above expectation. Both of these schools are near the middle in student family background; of the 70 schools of higher status, only three have higher raw scores than these two. At the other extreme, 17 schools are one or more grade levels below expectation. When we read this plot, it is difficult to determine the importance of the number of times that an unusually low social status school has above average achievement or the number of times that a school of only average social background has outstanding achievement. Even if we did wish to pursue an explanation of the performance of these schools, we would be stymied by the fact that we have no idea what would explain these deviations. Furthermore, if we did succeed in explaining some of the deviation from Figure 3.1's regression line, would we have explained anything of great importance? We know too little about whether these achievement gains can be translated into better income, better citizenship, or more personal happiness when these students become adults.⁴

The Effect of the Socioeconomic Status of Other
Students in the School--Analyzing Mean Scores
with a Cross-Tabulation

The best known finding from the Coleman report is that the performance of each student is affected by the social status of his peers. This is a mysterious finding, since no convincing explanation of this effect has been presented. The issue is complicated by the disagreement over whether the effect is genuine or merely some sort of statistical artifact.

The question is in fact a simple one, and we have reanalyzed our data to measure the effect of the school's mean social status on the individual student. To do so, we present data--for the first time in this report--on individual students rather than on aggregate student bodies. The data is presented in a graph of individual achievement, plotted simultaneously against individual social background and school composite social

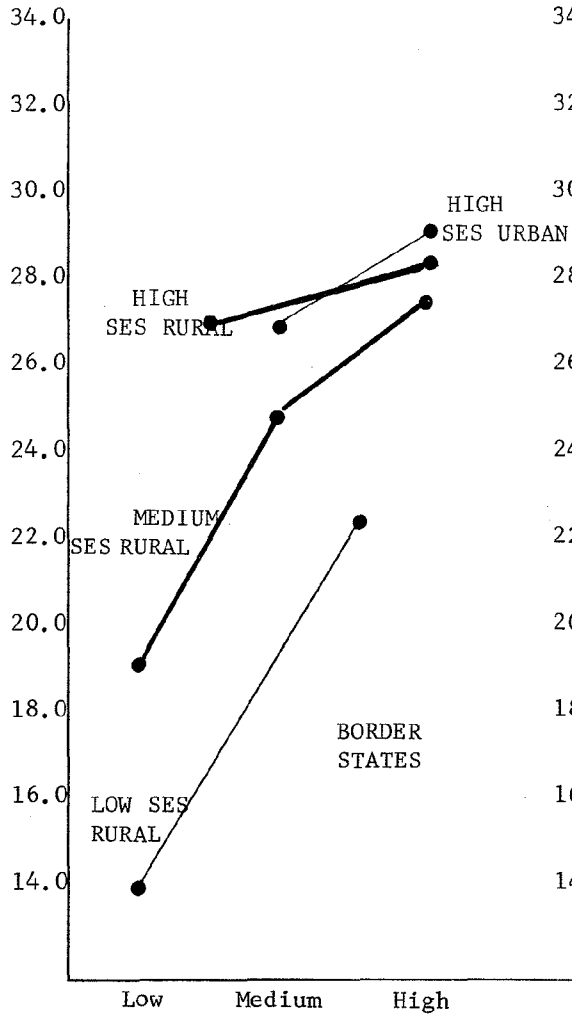
⁴This is the issue raised by Christopher Jencks et al., Inequality: A Reassessment of the Effects of Family and Schooling in America (New York: Basic Books, 1972).

background (Figure 3.2). To avoid raising any issue of the effects of racial integration, we present data only for the 1,840 white high school students who were in schools which were at least 75 per cent white.

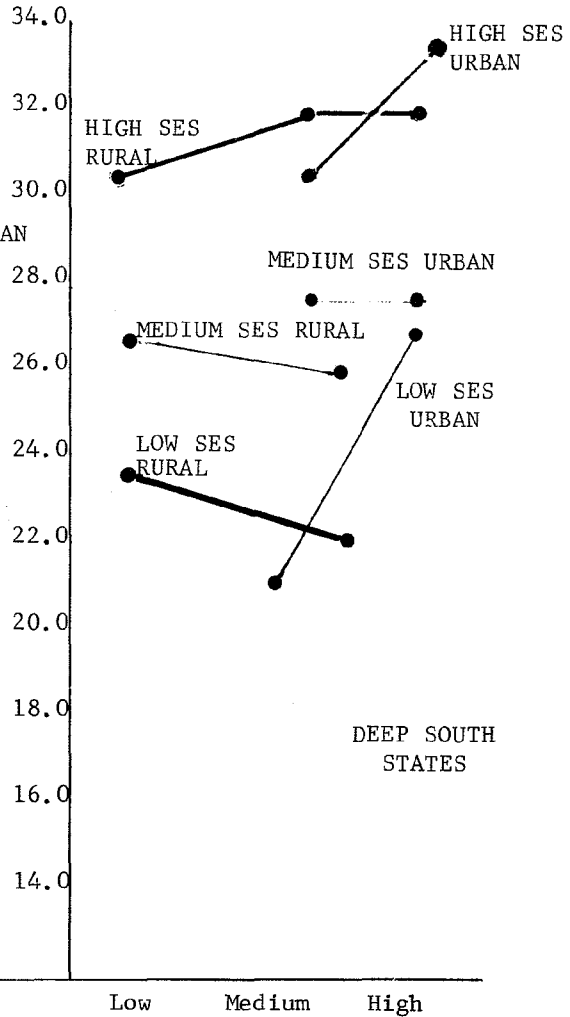
Figure 3.2 presents the results of tabulating individual achievement scores simultaneously against student family background (also measured at the individual level) and the mean family background of all students (combining black and white students) in the school they attend, controlling on urbanism and region. Thus, the graph separates the effect of individual background (the direct effect) from the school mean background effect (the contextual effect). For example, the three lines labelled "low SES rural," "medium SES rural," and "high SES rural" refer to students living in rural areas in the border states. The lowest line shows that the average student from a low SES background who is in a school where the other students are also from predominantly low SES backgrounds can be expected to obtain 14.0 correct answers on the test; the student of similar background who attends a school where the other students are of medium or high SES can be expected to get 22.0 correct answers. The slope of the line indicates the effect of school social status; the gap between the lines shows the effect of individual status.

The strong relationships between social status, urbanism, and region make it difficult to trichotomize individual-level and school-level social status. There are few low and medium status students in urban border states, and they are almost all located in schools with high mean socioeconomic status, so that these two groups are lost from the analysis. Two other groups--Deep South, high status, rural students, and border, medium status, rural students--appear in sufficient numbers in low, medium, and high status schools to permit us to plot three points. The achievement of medium status students in rural border states is strongly correlated with school status; these students score only 19 when they are in low status schools, increase to 25 in middle status schools, and up to 27 in high status schools. The high status students in the Deep South do well in all three types of schools, and show only very weak effects of school social status on their achievement.

Individual
Achievement



Individual
Achievement



Total School Social Status (Both Races Combined)

Fig. 3.2--The Impact of School Social Status on Tenth Grade White Students, in Schools Over 75 Per Cent White, by Region, Urbanism, and Individual Student Social Class

Fig. 3.2--Continued

Notes: N's for Figure 3.2:

<u>School SES Total</u>		<u>Border States</u>			<u>South</u>		
		<u>Low</u>	<u>Medium</u>	<u>High</u>	<u>Low</u>	<u>Medium</u>	<u>High</u>
High SES	urban	-	24	389	-	41	209
	rural	18	68	60	70	81	22
Med SES	urban	-	7	132	-	26	67
	rural	20	48	27	21	68	16
Low SES	urban	-	6	86	-	27	33
	rural	43	40	18	49	76	4

Achievement test scores are number of questions answered correctly (corrected for guessing). All data points based on $n < 20$ were combined with the neighboring point (i.e., High SES Rural with Medium SES Rural) and plotted midway between the two categories. The five lines with the smallest standard error are shown in heavy lines on the figure. Medium and low SES urban border data are omitted because of small n's.

Overall effect of school SES:

The difference between the extreme points on each line, averaged over all 12 sets of data:

$$\text{mean gain} = \frac{\sum_{i=1}^{i=12} \sqrt{\frac{A_{Hi} - A_{Li}}{\frac{1}{n_{Hi}} + \frac{1}{n_{Li}}}}}{\sum_{i=1}^{i=12} \sqrt{\frac{1}{\frac{1}{n_{Hi}} + \frac{1}{n_{Li}}}}} = 2.06 \text{ points}$$

where A = achievement, n = number of cases, H = high mean SES, L = lowest.

In all there are 22 points plotted on the graph, and 12 lines connecting these points. How often do these lines slope upward from left to right, as Coleman would predict? The plot shows eight cases of gains as the social class composition of the school increases and four cases where there is no gain or a loss; three of the four are for Deep South rural students. On the whole, then, the graph shows that our data is consistent with Coleman's, with the exception of rural schools in the Deep South, for which we have no explanation.

To some extent, these effects are exaggerated, because we know that in some cases, our measurement of low status students in high status schools was in error; their status is in fact much higher than we measured it to be. Measurement error, however, cannot explain effects of this magnitude; in two cases the effect of changing school-level SES is larger than that of changing the student's own social status. The average gain in achievement due to school social status, controlling on individual social class, is 2.06 additional correct answers on the test, or about one-half grade level.

In conclusion, we see that the "middle-class school" is an effective one. Parents who talk about sending their children to good schools (meaning by "good," schools that are in middle-class neighborhoods) are perceptive and accurate in their evaluation of schools. Apparently, the famed high status suburban school is better, regardless of the teachers, facilities, or curriculum; the students themselves do the job.

There are several plausible explanations for this fact. The simplest is that students perform at the level they are expected to. If work is set at a particular level of difficulty, the slow students will work harder to achieve that standard; if the standard is lowered, the better students will do less work. There are other factors, however, which may explain things as well. For example, since high status students are less likely to be delinquent or badly behaved in the class, high status schools will be less likely to find their classrooms occupied by potentially rebellious students. One rebel in a middle status classroom can be effectively contained, while in a poorer classroom, three rebels cause more than three times as much disruption. A third factor is that students teach each other.

Obviously, if one asks a fellow student for help, one benefits more if the student who is asked knows the answer. In addition, student norms (about whether to do homework, about whether to read in one's spare time, about whether to go to college) are contagious. Finally, it has often been argued that the high status schools attract the best teachers and textbooks. These arguments, taken together, seem to provide persuasive explanations for the association between aggregate student background and individual achievement presented in Figure 3.2.

The Effect of the School--An Attempt
to Interpret Measures of Variance

We have argued that a student's social status does not completely explain his achievement. A related but more difficult issue is this: can any noticeable fraction of a student's achievement be attributed to the quality of the school he attends? Again, we will find that our data is generally consistent with Coleman's, and the issue we raise here is less one of statistical technique, than of interpretation of results.

The first point made by commentators on the Coleman report is that little of the variance in individual achievement lies between schools. In simple English, this means that there is a considerably greater difference between the performance of any two students selected at random than there is between two schools selected at random. If, however, we were to argue that the main explanation for a student's performance lies in the quality of the school he attends, then it would follow that good schools would have a high percentage of high-performing students, while a few very bad schools would have a high percentage of low-performing students. If this were true, then the difference between the best and worst schools would be nearly as great as the difference between the best and worst students, and most of the variance in individual achievement would indeed lie between schools. For this argument, then, the extent to which school mean achievement scores differ is an upper limit of the size of the school's effect on achievement.

This conclusion is, we believe, overstated. The mere fact that most of the variance lies within schools does not mean that the school's effect

is negligible. As Table 3.1 indicates, the amount of variance between schools on the achievement test is slightly less than one-fifth of the total variance. This is greater than the figure obtained by Coleman for Southern whites, and about the same as his estimate of the between-school variance for Southern blacks.

What does it mean to say that "only" one-fifth of the total variance in achievement lies between schools? Most writers have taken this to mean that most of the variance is outside the control of the school, and have concluded that there is little that the school can do to influence achievement. No doubt it is important that we recognize that the school is not all-powerful. We should know by now that no amount of improvement in the educational system will create impressive gains in tested achievement in large numbers of students. When we recognize this, we can become more realistic about what to expect from the schools and perhaps place our desire to reform the educational system into a healthier perspective. Recent writing by social scientists, however, has taken the extreme position of saying that significant improvements in tested achievement are impossible to accomplish, and therefore that educational reform is hopeless.⁵ For this reason, we must examine very carefully what "20 per cent of the variance" means.

TABLE 3.1

THE PERCENTAGE OF THE TOTAL VARIANCES IN THE ACHIEVEMENT TEST
SCORES THAT LIES BETWEEN SCHOOLS

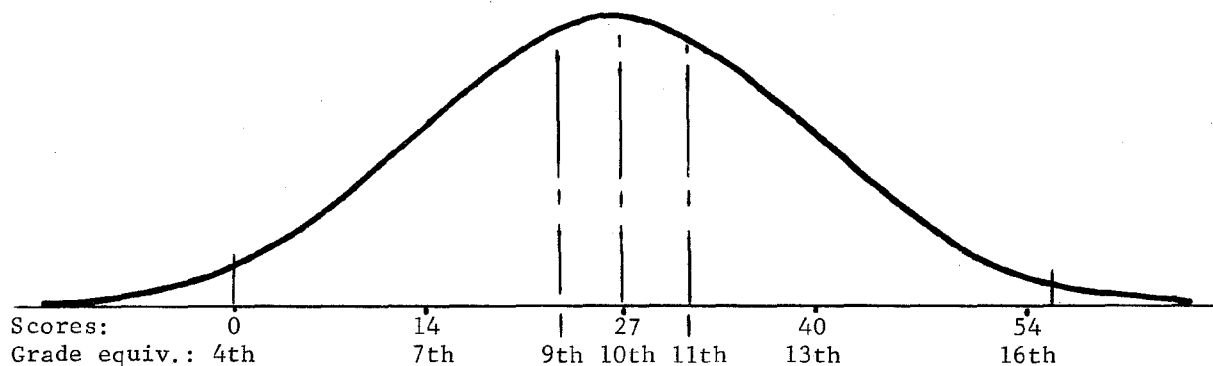
$[(\text{Between-schools variance} \div \text{total variance}) \times 100]$

Grade and Race	Variance Ratios (Per Cent)
Fifth grade black	18.0
Fifth grade white	16.2
Tenth grade black	19.5
Tenth grade white	20.5

⁵ At least that is our reading of Jencks, Inequality; the Editors' Introduction to F. W. Mosteller and D. P. Moynihan (eds.), On Equality of Educational Opportunity (New York: Random House, 1972); and a host of popular magazine articles.

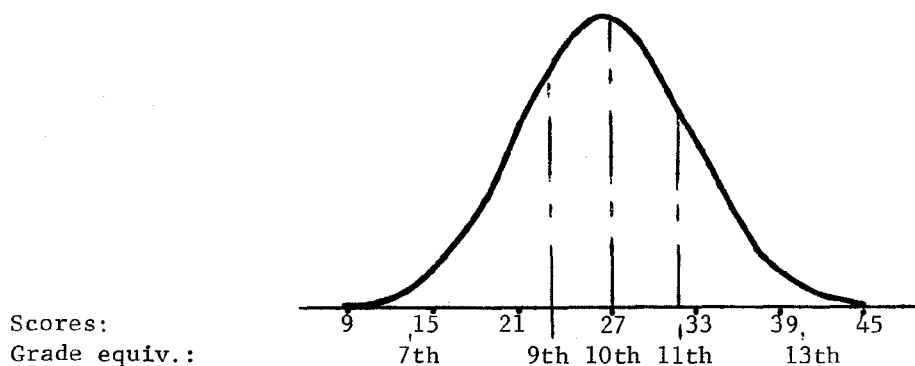
For this analysis, we will look only at the white high school students in the ESAP study. The tenth grade white students have a mean score of 26.9 correct answers (after correction for guessing) on the 57-item achievement test. The distribution of individual scores is normal, with a standard deviation of 13.4 correct answers (meaning that one-sixth of the students got fewer than 14 questions right, while another one-sixth got 40 or more of the 57 items correct). As noted earlier, we will use the analysis in the Coleman report to estimate that one standard deviation on this test will equal approximately three grade level equivalents. Thus we will estimate that a difference of $13.4/3 = 4.5$ points corresponds to a difference of about one grade level. The total variance on the test, both within and between schools, is $(13.4)^2$ or 180 units. To say that 20 per cent of this total variance lies between schools is to say that if we look at school means, we should expect to find that the standard deviation of the distribution of school means is $\sqrt{.20 \times 180} = \sqrt{36} = 6.0$.

What is the difference between an individual standard deviation of 13.4 and a school mean standard deviation of 6.0? One answer is to look at graphs of the distributions, in the top and center drawing of Figure 3.3. The top figure shows the distribution of individual test scores, $\sigma = 13.4$. The center figure shows the distribution of school means, $\sigma = 6.0$. Examination of a standard table of the normal distribution shows that, if we assume normality, the best one-tenth of all high schools in the South should be 1.64 standard deviations above the mean on the average, while the worst one-tenth should be an equal distance below. This means that the two groups will be 3.28 standard deviations apart, or $3.28 \times 6.0 = 20.4$ points apart on our test. Converted to grade equivalents, this is a difference of approximately four and one-half grade levels. Consequently, the bottom tenth of the high schools in our sample have white students performing, on the average, at eighth grade level, while the top tenth have sophomores performing at the level of high school seniors. The same conclusion can be drawn by looking at the center graph in Figure 3.3, which shows some schools with means at grade 13, and others with means at grade 7. Stated this way, the differences between schools do not seem so small.



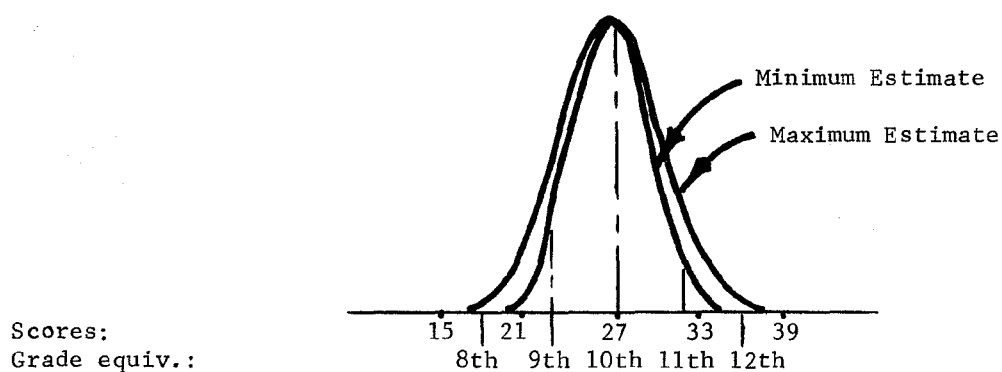
Distribution of Individual Test Scores

$$\sigma = 13.4 \quad \sigma^2 = 180$$



Distribution of School Means

$$\sigma = 6.0 \quad \sigma^2 = 36$$



Distribution of Two Estimates of School Effects

Maximum estimate:	$\sigma = 3.4$	$\sigma^2 = 11$
Minimum estimate:	$\sigma = 2.7$	$\sigma^2 = 7.2$

Fig. 3.3.--Graphic Display of Variation in Achievement
(Tenth Grade White Students)

This is not to say that we have shown that the school is capable of producing effects of this magnitude. The students in the high-achieving schools will usually be from better family backgrounds than those in the low-achieving schools. But social class and achievement are not perfectly correlated; our correlation, at the individual level, between social status and achievement for tenth grade white students is only .26 (Coleman's, using a better SES scale and a longer achievement test, was .38). Obviously, social status is not the whole story. Furthermore, there is no system of perfect economic segregation that places the very highest SES students together, without error, into certain schools. (Twenty per cent of the individual variance in SES lies between schools.) If we work out the computations, we find that using either our data or Coleman's, we can conclude that only a small portion of the between-school variance in achievement is the direct effect of social class.⁶

Since individual social class alone is not the entire explanation for between-school differences in achievement, we must also consider the contextual effect of social class. We have already seen that social class has a sort of multiplier effect in schools. Thus, the high status student, already a high-achiever due to family background, benefits from economic segregation; he is more likely to be placed in a school where other students have higher social class and this means that the school pushes his achievement even higher. This phenomenon is reflected in our data in the fact that while the correlation between social class and achievement at the individual level is .26 for the white tenth graders, the correlation between white mean social class and white mean achievement at the school level is .59. This is depressing news for educators, for it suggests that while schools are making a difference, one of the most significant ways that they make that difference is through a factor out of the control of the school

⁶ If there were no measurement error and no correlation resulting from the contextual effects of school mean social status on individual achievement, social status would have the same correlation with achievement at the school level as it does at the individual level, explaining either 6 per cent ($.26^2$ from this study) or 14 per cent ($.38^2$ from Coleman) of the between-school variance. However, measurement error causes the correlations at the school level to be higher.

administrator. The school with uniformly high status students will find that the students tend to be overachievers, while the school with uniformly low status students will find that the average student tends to do worse than would be expected on the basis of his family background alone. This is a school effect, but one that can be combated only through economic desegregation. All of this brings no cheer to the person concerned with the possible effect of improvements in teaching, curriculum, and facilities.

The remaining factor to determine is how much variance is unexplained after we allow for both individual and contextual social class effects on achievement. Since our social status scale has a correlation of .59 with achievement at the school level for whites, $.59^2$ or 35 per cent of the school-level variance in achievement is accounted for by student body social status. We can do a bit better than that if, instead of building a simple scale of the SES items, we use multiple regression to pick the best-fitting linear sum of the SES items. When we do this, we are able to generate a multiple correlation coefficient of .67 between school mean white social class and school mean white achievement, explaining $.67^2$ or 45 per cent of the variance.

Now let us see if we can estimate how much variance between schools might be attributed to differences in quality between schools. We can arrive at a maximum estimate by arguing that whatever we cannot explain with individual and contextual social status and sampling error is explainable by school quality--an obvious overstatement (for example, it assumes no measurement error in school status⁷). On the other hand, this assumption actually underestimates the effect of school quality in one way. By removing not only the direct but also the contextual effects of socioeconomic status, we are, in effect, saying that all the differences between middle-class and working-class schools are due to the differences between students; we are arguing that the quality of educational effort is the same in middle-class and working-class schools. If middle-class schools are superior in quality (as many people suspect), we are ignoring this difference

⁷ School means do have less measurement error than do individual measurements.

in quality. Thus, we are overestimating the effect of quality by assigning all residual variance to it, but at the same time, we are underestimating the effect of quality by ignoring all differences in quality which are correlated with school social class (so perhaps the two false assumptions will cancel each other out).

For our maximum estimate, let us assume that quality of education can explain 30 per cent of the difference in achievement (the amount left after subtracting 45 per cent for school social class and 25 per cent for sampling error).⁸ Thirty per cent of the between-school variance of 36 units (a unit being a squared test item) is 11 units; this means that if a set of schools were given identical students, the distribution of achievement scores would still vary, with a standard deviation of $\sqrt{11} = 3.4$ test points. This distribution, labeled "maximum estimate," is shown in the bottom drawing of Figure 3.3.

To obtain a minimum estimate, we computed a series of multiple regression equations using the school characteristics measured in our survey. We found that after social class and racial composition effects were removed, we could explain uniquely an additional 12 per cent of the variance with seven school characteristics.⁹ This is a very conservative estimate, since it assumes that these seven variables comprehensively measure school quality. Furthermore, these variables do not include some of the teacher characteristics Coleman used, with which he was also able to explain 12 per cent of the between-school variance.¹⁰

⁸ If the effective mean sample size per school is 20, the sampling variability is one-twentieth of the individual level variance and $(1/20)(5)$, or 25 per cent, of school-level variance.

⁹ Three teacher attitude variables, three school activity variables (including number of audio-visual specialists), and student reports of the amount of homework.

¹⁰ Equality of Educational Opportunity, p. 317, shows seven teacher variables explaining 2.49 per cent of the individual variance in achievement. This is 12 per cent of our estimated between-school variance $(.0249/.20 = .12)$.

It seems reasonable to assume that more and better measures of school quality will increase the per cent of variance uniquely explained. In addition, we should probably allocate some of the variance shared by social status and school quality measures to school quality, rather than arbitrarily attributing it all to social class. It seems reasonable to assume that doing this would attribute at least 20 per cent of the between-school variance in achievement to school quality, which would mean that the between-school variance attributable to educational quality would be $.20 \times 36 = 7.2$, and that a collection of identical students sent to different schools would have achievement scores distributed with a standard deviation of $\sqrt{7.2} = 2.7$. This is the minimum estimate shown at the bottom of Figure 3.3.

The bottom drawing of Figure 3.3 is thus our answer to the question: "How much difference can a school make?" The answer is that a typical student in an unusually good school (one near the right tail of the distributions in the graph) will be achieving anywhere from one (the minimum estimate) to one and one-half (the maximum estimate) grade levels above the norm (i.e., the overall individual-level mean for Southern schools); the same student in an unusually bad school would fall one to one and one-half grade levels below the norm. Thus, the difference between our best and worst high schools is a difference of two to three grade levels. To put it another way, if we brought all our Southern high schools up to the level of the best Southern schools--pushed them all up to what is now the upper tail of either the minimum or maximum estimate in the bottom of Figure 3.3--we would raise the regional norm for white tenth graders by one to one and one-half grade levels.¹¹

To return to our original question--what per cent of the variance in individual achievement is represented by this residual school-level variation, which we argue is the maximum which can be achieved by variations in

¹¹For the reader who would prefer some other unit of measurement to grade equivalents, this is (crudely) a gain of 30 to 60 points on the Scholastic Aptitude Test or 5 to 10 points on an IQ scale. The SAT is standardized to a standard deviation of 100, IQ to a standard deviation of 15.

school quality?--the answer is that 11 units (the variance of the maximum estimate in Figure 3.3) divided by 180 units (the variance of the individual distribution in the top drawing) is 6 per cent of the total variance in achievement. Using the minimum estimate, we get $7.2/180 = 4$ per cent. In other words, only 4 to 6 per cent of the variance in individual achievement can be explained by school quality. We have seen that the problem of how much differentiation there is among schools can be made to look large or small, depending upon the kinds of statistics that are used and the way in which common sense interprets those statistics.

Indeed, this is the main point of this exercise. If we say that school quality can explain no more than 4 to 6 per cent of individual achievement, how can we help but conclude that this is a miniscule effect? But if we call the same difference a difference of two to three grade levels, or possible gains for the entire South of one to one and one-half grades, the same differences look more impressive. Furthermore, if we accept for a moment that 4 to 6 per cent of the individual variance is the total effect of school quality, then some of Coleman's results change sharply in interpretation. For example, his finding that 2.5 per cent of the variance in achievement can be explained uniquely by teacher quality implies that about half of the variance attributable to school quality can be explained by teacher effects.

Finally, we should point out that the maximum effect attributable to school quality is based on the existing distribution of school test scores. In saying that by bringing the average Southern school up to the quality of the best Southern school, we can raise test scores only one to one and one-half grades, we say nothing about what could be accomplished by a school superior to any existing Southern school. Any variance analysis can only tell us about the variability that exists in the environment right now, not about what is possible.

APPENDIX

Using White and Black and Male and Female Test Means to Estimate the Size of the School Effect

Another approach to the measurement of school effects is to examine the correlation between black and white achievement. The black and white students in a school are drawn from two segregated communities. They are similar only to the extent that they are equally urban, or from the same region, and their test scores should resemble each other only to the extent that region or urbanism predicts social background, which in turn predicts achievement. There is no particular reason to believe that the black students and white students in a school will be similar in academic ability.

We find, however, that in high school, the correlation between black and white achievement is .45--much higher than the correlation we would predict on the basis of the black and white social class measures.¹ This suggests that black and white performance has a common cause, in addition to the similarity of the backgrounds of the students: namely, the quality of education or a "school effect." If we assume the residual white achievement that cannot be explained by student social status is the result of the quality of education in the school, then we can use this to predict black achievement.

We find that controlling on black and white social class, the partial correlation between white and black achievement is .26. This is a conservative estimate of the effect of the school, in part because of sampling error in the test means, but also because schools can bias their performance in favor of one racial group; a school that is good for whites may be bad for blacks. There is some support for this hypothesis in the fact that schools show a slight tendency toward sex bias: black male students' scores

¹If black and white achievement correlated only because black and white social class were correlated, the correlation would be the product of $(r_{\text{black SES} \times \text{white SES}})(r_{\text{black SES} \times \text{black Ach}})(r_{\text{white SES} \times \text{white Ach}})$. Since the correlation between white and black social class is .38, and the two correlations between SES and achievement both are about .6, the predicted correlation between white and black achievement would be $(.38)(.6)(.6) = .14$.

are more highly correlated with white male students' scores than they are with white female students' scores, and the situation is analogous for black females. Or, as Table A shows, the partial correlation of achievement scores of same-sex students of different races is larger than the correlation for opposite-sex students. But this means there are certain kinds of schools where female students, both black and white, do well compared to male students, and others where they do poorly compared to males. The effects are small, but they would seem to reflect a bias; and if a bias in favor of one sex can be observed, we would expect the bias in favor of one or the other race to be at least equally possible.

TABLE A
PARTIAL CORRELATIONS BETWEEN BLACK AND WHITE HIGH
SCHOOL ACHIEVEMENT WITHIN EACH SEX

Correlation	Controlling on:	Partial r
Achievement, black males x white males	Achievement, white females Achievement, black females	.14
Achievement, black males x white females	Achievement, white males Achievement, black females	.06
Achievement, black females x white males	Achievement, white females Achievement, black males	.12
Achievement, black females x white females	Achievement, white males Achievement, black males	.19

WORKING PAPER 4

THE EFFECTS OF INTEGRATION ON ACHIEVEMENT

by

Ruth E. Narot

Introduction

In granting money to Southern school districts, the authors of ESAP assumed that there are improvements that can be made to facilitate the process of school desegregation. This presupposes that there are good and bad ways in which to integrate a school. This fact seems quite simple, and yet most attempts to analyze the effects of integration ignore it.

A change in racial composition is not a type of magic that either works or doesn't work regardless of the circumstances. School desegregation is a process that benefits students under some conditions and not under others. If integration does improve achievement, it does so by changing a child's experience in school. The change may be in the quality of relationships with students of the opposite race, or in the fact that a student in an integrated school is confronted with a new set of academic standards and is pulled along to meet these standards, or the change may be the result of being treated differently by staff.

If peer group relations are important, we may find that integration improves black achievement when whites are open and friendly, but has a negative effect when white students are hostile. In this particular case, we cannot simply look at the effect of racial composition on achievement, but must look at the combined effect of racial composition and white racial attitudes.

We have used dummy variable regression for each of the four race and age groups to determine the effects of the percentage of white students. This technique does not assume that the percentage of whites has a linear effect on achievement; rather, it gives us the mean achievement score for schools within a certain range of the percentage of white students. In our analysis, we have divided the schools into three groups: those with less than 40 per cent white, 40 to 70 per cent white, and over 70 per cent white.

This is the simplest relationship between racial composition and achievement. If we then control for the social class of the students involved, the basic relationship between racial composition and achievement will change considerably. If we further complicate the model by adding other school characteristics to the equation, we see that the effect of the percentage of white students has different effects depending upon its interaction with these other school variables. With this method, we can begin to understand the process of school desegregation and to sort out the conditions under which integration will either raise or lower achievement. The analysis will be described in detail when we examine data for our first group of students--black fifth graders.

Fifth Grade Blacks

Taking the simple uncontrolled relationship between the percentage of white students and achievement, it appears that integration causes a slight increase in black achievement (Table 4.1). The number in each cell of Table 4.1 is the mean achievement score for that group of schools. By comparing the numbers in the three categories, we see that achievement rises in schools with a larger number of white students. For schools that are 0 to 40 per cent white, the mean black achievement score is 163; for schools that are 41 to 70 per cent or greater than 70 per cent white, the mean achievement score is 175. The r^2 of .01 is the percentage of the between-school variance in achievement explained by the percentage of white students.

TABLE 4.1
EFFECT OF RACIAL COMPOSITION ON ACHIEVEMENT
FOR FIFTH GRADE BLACK STUDENTS
(Mean Achievement)

Per Cent White of School		
0-40	41-70	71-100
163 (81)	175 (107)	175 (80)

Notes: Number of schools in cell shown in parentheses.

r^2 added by per cent white = .01

Standard deviation, achievement = 53.

In the next set of equations, we enter the dummy variables after a series of control variables that take out the effect of social class and geography (listed in the appendix to this paper). When controls are used, the resulting table is no longer a simple report of actual means, but a report of the means that would appear if the schools of different racial composition had students of identical social backgrounds. For this reason, they are referred to as "predicted means." The top line of Table 4.2 shows that when we control for social class, the overall effect of percentage of whites is negative. In predominantly white schools, the mean predicted achievement is 11 points lower than for the other two categories. There is, however, no difference in predicted achievement between schools that are 0-40 per cent white and those that are between 41 and 70 per cent white.

This change between Tables 4.1 and 4.2 suggests that black students in predominantly white schools tend to be from a higher social class and thus have higher achievement scores. When we control for this effect, going to a predominantly white school has a negative effect on black achievement.

TABLE 4.2

EFFECT OF RACIAL COMPOSITION ON ACHIEVEMENT FOR ALL FIFTH GRADE
BLACK STUDENTS, AND FOR EACH SEX SEPARATELY,
STUDENT BACKGROUND CONTROLLED
(Predicted Mean Achievement)

Student Group	Per Cent White of School			r^2 Added by Per Cent White
	0-40	41-70	71-100	
All blacks	175	175	164	.01
Males only	167	161	139	.03
Females only . . .	182	188	186	.01
Number of schools	81	107	80	

The relationship is not the same for males and females, however, as is shown by the second and third lines of Table 4.2. Going to a predominantly white school is particularly bad for males: the predicted achievement score for males in mostly black schools is 167, compared to 139 in predominantly white schools. The percentage of white students explains 3 per cent of the variance in black male achievement. Going to school with whites has a strong negative effect on black male achievement. The picture for females (the third line of Table 4.2) is completely different. First, the percentage of white students has less of an effect, with an r^2 of only .01. The relationship also goes in the opposite direction: going to school with whites is beneficial to females. The differences are not enormous, but there are definite achievement gains in schools with more white students. This sex difference will continue to appear throughout the analysis. Female students of both races fare better than do their male peers when their race is the minority.

Next, we introduced a series of other variables into the analysis. Each variable was added to the regression equation containing the controls and racial composition. The variables tested for white students in elementary schools were as follows: per cent of whites for whom this school was

the nearest to their home, white socioeconomic status, mean number of years white students have been in desegregated schools, the per cent of whites who said they were happy and who said they felt they "belonged" in their school, and the per cent of whites riding buses to school.

The corresponding black student items were used in the black analysis (except for the last item, per cent riding buses). In addition, for black elementary school students, we examined the effects of the level of community civil rights activity, the black student perception of staff attitudes about integration, and the white students' mean score on the attitude toward integration scale.

For tenth grade white students, we examined the effect of opposite-race socioeconomic status, white student reports of racial contact, level of racial tension, and perception of desegregation problems (three variables), the per cent of white students traveling to school by bus, and the per cent of white students who attended desegregated elementary and junior high schools.

For the analysis of tenth grade black achievement, we analyzed variables for blacks parallel to those for whites and added ten other variables: white attitudes toward integration, black participation in sports and clubs (for males and females separately and for both sexes combined), black perception of staff attitudes toward integration, black reports on happiness and sense of "belonging" in the school, the per cent of blacks for whom this was their neighborhood school, principal's report of integration among cheerleaders and the student council, and the level of civil rights activity in the community. We will report the regression results for only eight of these variables; the remaining 30 either have no effect, or, more often, are related to achievement but do not clarify the relationship between school racial composition and achievement.

For fifth grade blacks, only one of these variables shows an interesting effect. We find that fifth grade black achievement is affected not only by the racial composition of the school, but also by the racial attitudes of the whites in the school. Table 4.3 shows the interaction of percentage of white students and white racial attitudes. The regression analysis includes all the interaction terms, so that we can estimate the

relationship between white attitudes and black achievement when the school is mostly white, and then make a separate estimate for schools with other racial compositions. For all three percentage white categories, those schools where white racial attitudes are above the mean (i.e., favorable) have a higher mean predicted achievement score. The difference is 8 points in schools with a low percentage of white students; in schools that are over 70 per cent white, there is a 13 point gain.¹

TABLE 4.3

EFFECT OF RACIAL COMPOSITION AND WHITE RACIAL ATTITUDES
ON ACHIEVEMENT FOR FIFTH GRADE BLACK STUDENTS,
STUDENT BACKGROUND CONTROLLED
(Predicted Mean Achievement)

Mean of White Racial Attitudes	Per Cent White of School		
	0-40	40-70	71-100
Unfavorable . .	160 (46)	166 (64)	155 (46)
Favorable . . .	168 (31)	173 (43)	168 (33)

Notes: Number of schools in cell shown in parentheses.

r^2 added by white racial attitudes = .01

In Table 4.2, we saw an 11 per cent drop in black achievement in schools that are more than 70 per cent white. In Table 4.3, we see that the effect of racial composition on achievement is very small when white racial attitudes are taken into account. White racial attitudes explain an additional .01 per cent of the variance. So, while the effects of this variable are not strong, they do show that going to school with whites will have different effects on black achievement depending upon the attitudes of the white children.

¹Note that the table cannot tell us whether black achievement is influenced by white attitudes more than white attitudes are influenced by black achievement.

Tenth Grade Blacks

The relationship between the percentage of white students and black achievement is stronger in the tenth grade and also considerably more complex. Before we put SES controls in the regression equation, we see that black achievement is higher in schools with a high proportion of whites (Table 4.4). The pattern of gains is again different for males and females.

TABLE 4.4

EFFECT OF RACIAL COMPOSITION ON ACHIEVEMENT FOR
ALL TENTH GRADE BLACK STUDENTS AND FOR
EACH SEX SEPARATELY, NO CONTROLS

(Mean Achievement)

Student Group	Per Cent White of School			r^2 Added by Racial Composition
	0-40	41-70	71-100	
All blacks . . .	108	121	125	.02
Males only . . .	101	120	114	.02
Females only . .	115	125	135	.02
Number of schools . .	36	57	52	

The top row of Table 4.4 indicates that for the whole sample of blacks, the gain in achievement is linear. Schools in the middle percentage white category have a mean black achievement score 13 points higher than that of low percentage white schools; the mean for high percentage white schools is 4 points higher than it is for those in the middle range. For black males, the highest score, 120, is in the middle range schools. Achievement in predominantly white schools is slightly higher than that in predominantly black ones, but there is a 6 point drop from the middle to the high percentage white category. Female students, on the other hand, have perfectly linear gains in achievement. The score in schools with 41-70 per cent white is 10 points higher than in those with 0-40 per cent white, and there is an additional 10 point gain for schools with over 70 per cent white.

Adding SES controls to the equation eliminates a large portion of the gains in achievement, but does not change the pattern of sex differences. Table 4.5 shows the mean achievement scores in the different categories of schools. The table calculates the scores for the entire sample, as well as breaking it down into males and females.

TABLE 4.5

EFFECT OF RACIAL COMPOSITION ACHIEVEMENT FOR TENTH GRADE
BLACK STUDENTS AND FOR EACH SEX SEPARATELY,
STUDENT BACKGROUND CONTROLLED
(Predicted Mean Achievement)

Student Group	Per Cent White of School			r^2 Added by Racial Composition
	0-40	41-70	71-100	
All blacks	116	122	120	.02
Males only	111	121	106	.02
Females only . . .	122	127	128	.01
Number of schools . . .	36	37	52	

The first row of Table 4.5, which is calculated on both males and females, illustrates the same rise in the middle that we first saw for males only. Controlling on student background, gains are significantly less. The difference between the low and middle percentage white categories is only 6 points. The reason for the change in the distribution becomes more clear when we look at the next two rows. Controlling on social class, predominantly white schools have a stronger negative effect upon black male achievement. The mean achievement in predominantly black schools is 5 points higher than in predominantly white ones. The highest score is in middle range schools. Females continue to show a pattern of linear gains in achievement. The gain shown in Table 4.5 is only 6 points compared to 20 points before we controlled on social class (Table 4.4). In summary, black females tend to do slightly better in schools with a larger number of whites; black males, however, do best in equally mixed schools and least well in predominantly white ones.

Coleman² found that the social status of other students is an important determinant of individual achievement. We expected that there would be a large interaction effect between the racial composition of the school and the social class of the white students, and Table 4.6 shows that this is the case. White social class explains an additional 3 per cent of the variance in black achievement. In each percentage white category, there are large gains in black achievement when white SES is high. Obviously, white SES should be more important in schools where there are more whites, and this is what the data show. The gain in schools that are 41-70 per cent white is 25 points; in the highest white percentage group, 22 points; and in predominantly black schools, the gain is only 11 points.

TABLE 4.6

EFFECT OF RACIAL COMPOSITION AND WHITE SES ON
ACHIEVEMENT FOR TENTH GRADE BLACK STUDENTS,
STUDENT BACKGROUND CONTROLLED

(Predicted Mean Achievement)

Mean White SES	Per Cent White of School		
	0-40	41-70	71-100
Low	110 (17)	109 (29)	104 (17)
High	121 (19)	134 (28)	120 (35)

Notes: Number of schools in cell
shown in parentheses.

²
 r^2 added by white SES = .03

Observe that in low SES schools, achievement goes down as percentage white increases, while in high SES schools, achievement goes up slightly. The higher the social status of the whites, the more beneficial integration is to the black students.

²James S. Coleman et al., Equality of Educational Opportunity
(Washington, D. C.: U. S. Government Printing Office, 1966).

SES is quite an important variable, but there are other important factors that influence the impact of racial composition on achievement. As was true in the fifth grade, the racial attitudes of the white students are important for black tenth graders. Table 4.7 shows that across all the percentage white categories, the mean achievement scores are higher when white racial attitudes are more liberal. There is a 13 point gain in both the 40-70 per cent and 71-100 per cent white categories. It is not surprising that black students perform better in an integrated school where whites are more liberal and accepting of blacks. Note, however, that white racial attitudes are related to black achievement only when the school has a significant number of white students.

TABLE 4.7

EFFECT OF RACIAL COMPOSITION AND WHITE RACIAL ATTITUDES
ON ACHIEVEMENT FOR TENTH GRADE BLACK STUDENTS,
STUDENT BACKGROUND CONTROLLED

(Predicted Mean Achievement)

White Racial Attitudes	Per Cent White of School		
	0-40	41-70	71-100
Low (prejudiced).	115 (23)	115 (31)	111 (16)
High (liberal).	117 (13)	128 (26)	124 (36)

Notes: Number of schools in cell shown
in parentheses.

r^2 added by white racial attitudes = .03

It would appear that it is important not only for black students to be tolerated by white students, but also for them to be involved in school activities and programs. Table 4.8 shows the effect of racial composition and participation in sports and clubs on tenth grade black achievement. In high percentage white schools, there is a 27 point difference in mean achievement between schools where participation is high and schools where it is low.

TABLE 4.8

EFFECT OF RACIAL COMPOSITION AND BLACK PARTICIPATION
IN SPORTS AND CLUBS ON ACHIEVEMENT
FOR TENTH GRADE BLACK STUDENTS,
STUDENT BACKGROUND CONTROLLED

(Predicted Mean Achievement)

Blacks Who Participated in Sports or Clubs	Per Cent White of School		
	0-40	41-70	71-100
Low	112 (20)	121 (25)	107 (29)
High	119 (16)	122 (32)	134 (23)

Notes: Number of schools in cell shown
in parentheses.

r^2 added by participation in
sports/clubs = .03

With further investigation, we discovered that this finding is true for high school females, but not for high school males. Tables 4.9 and 4.10 show the same interaction broken down by sex. Table 4.9 indicates that the same effect found with the overall sample holds for females. In the predominantly white schools, there is a 25 point gain in achievement when the females are active in extracurricular activities. The results for the male students (Table 4.10) show no relationship. The additional variance explained by extracurricular participation is .03 for females and negligible for males.

TABLE 4.9

EFFECT OF RACIAL COMPOSITION AND BLACK FEMALE PARTICIPATION
IN SPORTS AND CLUBS ON ACHIEVEMENT FOR
TENTH GRADE BLACK FEMALE STUDENTS,
STUDENT BACKGROUND CONTROLLED

(Predicted Mean Achievement)

Black Female Participation in Sports and Clubs	Per Cent White of School		
	0-40	41-70	71-100
Low	117 (12)	131 (25)	114 (29)
High	129 (24)	126 (32)	139 (23)

Notes: Number of schools in cell shown
in parentheses.

r^2 added by participation in sports/
clubs = .03

TABLE 4.10

EFFECT OF RACIAL COMPOSITION AND BLACK MALE PARTICIPATION
IN SPORTS AND CLUBS ON ACHIEVEMENT FOR
TENTH GRADE BLACK MALE STUDENTS,
STUDENT BACKGROUND CONTROLLED

(Predicted Mean Achievement)

Black Male Participation in Sports and Clubs	Per Cent White of School		
	0-40	41-70	71-100
Low	113 (17)	121 (26)	109 (28)
High	105 (19)	113 (31)	113 (24)

Notes: Number of schools in cell shown
in parentheses.

r^2 added by participation in sports/
clubs = .001

There has been considerable controversy over the issue of busing and the value of attending a neighborhood school. Our results show that, for blacks, there appears to be a positive effect for not attending a neighborhood school. Table 4.11 presents the results; it is somewhat difficult to read only because of the wording of the independent variable. The variable is the per cent of blacks for whom there is no closer public school, i.e., the percentage who go to their neighborhood school. The bottom row presents data for schools that are the neighborhood schools for most of their students. These schools have lower mean achievement scores in every percentage white category. This table argues that, for blacks at least, busing students out of their neighborhoods is not harmful, and may be beneficial.

TABLE 4.11

EFFECT OF RACIAL COMPOSITION AND GOING TO
THE NEAREST SCHOOL ON ACHIEVEMENT
FOR TENTH GRADE BLACK STUDENTS,
STUDENT BACKGROUND CONTROLLED

(Predicted Mean Achievement)

Per Cent Attending Neighborhood School	Per Cent White of School		
	0-40	41-70	71-100
Low (not in neighborhood school)	119 (30)	124 (44)	123 (25)
High (in neighborhood school)	101 (6)	116 (19)	112 (28)

Notes: Number of schools in cell shown
in parentheses.

r^2 added by going to closest
school = .01

Tenth Grade Whites

Perhaps the most significant finding for tenth grade white students is that integration does not lower achievement. Achievement scores for both sexes are higher in schools that are equally mixed racially than they are in predominantly white schools. Table 4.12 shows the mean achievement scores for the three categories of percentage white. For both sexes, there is a rise in achievement in schools that are 41-70 per cent white. In all cases, achievement is higher in predominantly white schools than in predominantly black ones, but the best scores are in racially balanced schools.

TABLE 4.12

EFFECT OF RACIAL COMPOSITION ON ACHIEVEMENT FOR
ALL TENTH GRADE WHITE STUDENTS AND FOR
EACH SEX SEPARATELY, NO CONTROLS
(Mean Achievement)

Student Group	Per Cent White of School			r^2 Added by Racial Composition
	0-40	41-70	71-100	
All whites . . .	255	275	268	.01
Males only . . .	244	264	262	.01
Females only . .	267	284	275	.01
Number of schools . . .	22	61	77	

When we add controls to the equation, we increase rather than decrease the effects of racial composition (Table 4.13). We also find a large male-female difference. Taking the whole sample together, we see that there are linear gains in white student achievement as the percentage of blacks in a school increases: there is a 29 point difference in achievement between schools that are predominantly white and those that are predominantly black. Racial composition in this case explains 2 per cent of the variance.

Table 4.13 also shows that, for males, the best achievement is still in the 41-70 per cent white schools. However, the controls have boosted the predicted achievement in predominantly black schools,

so that it is higher than the mean for predominantly white schools. Overall racial composition explains less of the variance for males than it does for females. The third row of Table 4.13 shows that females exhibit the pattern seen for the overall sample, but even stronger. There is a very strong negative linear relationship between the percentage of white students and white achievement. Females in predominantly black schools have a predicted mean achievement score that is 40 points greater than that for predominantly white schools.

TABLE 4.13
EFFECT OF RACIAL COMPOSITION ON ACHIEVEMENT OF ALL TENTH GRADE
WHITE STUDENTS AND ON EACH RACE SEPARATELY,
STUDENT BACKGROUND CONTROLLED
(Predicted Mean Achievement)

Student Group	Per Cent White of School			r^2 Added by Racial Composition
	0-40	41-70	71-100	
All whites . . .	288	276	259	.02
Males only . . .	264	266	254	.01
Females only . .	304	287	264	.02
Number of schools . .	22	61	77	

Comparing the tables where we used controls with those where we did not, we can see that, in some manner, social class is masking the effects of integration on achievement. This means that whites in the middle and upper range white schools were of a higher social class. When we eliminated these effects, we found that going to a predominantly black school improves white achievement.

One might argue that this is a selection phenomenon; whites who choose to remain in predominantly black schools do so because they are initially liberal, more intellectual students. These effects, however, should have been controlled for by our social class variables.

Whites as well as blacks are affected not only by the racial composition per se, but also by the quality of race relations in the school. Table 4.14 gives the interaction effect between the level of racial tension in the school and the racial composition of it. Here too, there is an interesting phenomenon. We might expect bad race relations to have an effect on the achievement of the students in the minority. To some extent we found this to be the case with fifth and tenth grade blacks--they were more affected by white racial attitudes in the schools with more whites. Table 4.14 shows that whites are more affected by racial issues where they are in the majority. The independent variable in this case is the percentage of whites who say that racial tensions make school more difficult. The category "low" means that fewer students report tensions. In all three school categories, the less the tension, the better the achievement score. The differences, however, in the 0-40 per cent and the 41-70 per cent white categories are very slight. Only in predominantly white schools does the level of racial tension make an enormous difference: the achievement score is 272 where tension is low and 234 where tensions are greater. This is clearly quite significant.

TABLE 4.14

EFFECT OF RACIAL COMPOSITION AND RACIAL TENSION ON
ACHIEVEMENT FOR TENTH GRADE WHITE STUDENTS,
STUDENT BACKGROUND CONTROLLED

(Predicted Mean Achievement)

White Students Who Say Tensions Make It Hard	Per Cent White of School		
	0-40	41-70	71-100
Low	284 (10)	279 (22)	272 (51)
High	281 (13)	275 (40)	234 (26)

Notes: Number of schools in cell shown
in parentheses.

r^2 added by tensions make it hard = .03

In predominantly white schools where there are many racial incidents, it is likely that white students initiate the disturbances (since the outnumbered blacks will be reluctant to look for fights). Thus, white trouble-making is associated with low white achievement, but we do not know which is cause and which effect. It is possible that low-achieving whites will be resentful and make it difficult for any newly arriving black students. Their own frustrations may be taken out on the blacks. The other possibility is that tension may undermine the achievement of white students.

Fifth Grade Whites

The uncontrolled relationship between racial composition and fifth grade white achievement shows high losses when white children go to black schools. The predicted achievement scores are given in Table 4.15. For both sexes, the drop is linear and strong. However, these disastrous effects of integration appear to be completely the result of social class and geography. Once we control for student background, urbanism, and region, the negative effects disappear and we see instead the same sex differences that we have for other groups.

TABLE 4.15

EFFECT OF RACIAL COMPOSITION ON ACHIEVEMENT FOR
ALL FIFTH GRADE WHITE STUDENTS AND FOR
EACH SEX SEPARATELY, NO CONTROLS
(Mean Achievement)

Student Group	Per Cent White of School			r^2 Added by Racial Composition
	0-40	41-70	71-100	
All whites . . .	304	342	349	.06
Males only . . .	286	321	332	.05
Females only . .	317	385	354	.04
Number of schools . . .	48	122	127	

Table 4.16 shows that for all fifth grade whites, we see a slight gain in achievement in the middle range of schools: 350 compared to only 344 in predominantly white schools. None of the effects are very strong and the r^2 drops from .06 with no controls to .001 with controls.

We see a similar pattern for males. The differences are very small, but there is a slight gain in the middle range of racially mixed schools. For females, we see a noticeable achievement gain in the middle group of schools. The mean score is 366 for equally mixed schools, and 356 for predominantly white schools. Unlike the males, female achievement in predominantly black schools is higher than it is in white schools. For females, racial composition still explains 1 per cent of the variance.

TABLE 4.16

EFFECT OF RACIAL COMPOSITION ON ACHIEVEMENT OF ALL FIFTH GRADE
WHITE STUDENTS AND ON EACH RACE SEPARATELY,
STUDENT BACKGROUND CONTROLLED
(Predicted Mean Achievement)

Student Group	Per Cent White of School			r^2 Added by Racial Composition
	0-40	41-70	71-100	
All whites	343	350	344	.001
Males only	319	322	319	.001
Females only . . .	360	366	356	.01
Number of schools . . .	48	122	127	

The change between the controlled and uncontrolled equations means that white elementary school students who go to black schools are of a much lower socioeconomic status than those who go to white schools. We believe that this is because elementary school students are much more likely to go to their neighborhood school, and white children who live in black neighborhoods are more likely to be poor. Unfortunately, we do not

have comparable measures of who goes to neighborhood schools for both fifth and tenth grades. If we did, we would perhaps find that SES has a greater effect for fifth grade than it does in the tenth because elementary school children are more tied to their neighborhoods.

For fifth grade whites there do not appear to be other school characteristics that have a significant effect upon racial composition.

Discussion

A distinction is sometimes made between desegregation, racial balance, and integration. The first refers to a policy of assigning both races to the same school, the second to controlling racial composition, and the third to the creation of positive relationships between the races. We can say nothing about the impact of desegregation: all the schools in the ESAP sample are desegregated, so we have no segregated schools for comparison. Our data are, however, relevant to a discussion of the effects of racial composition and integration.

The effects of racial composition are generally small, and can be summarized by saying that most groups, both white and black, do less well in schools that are over 70 per cent white, and that most groups do well in schools that are 41 to 70 per cent white. Perhaps the most noteworthy conclusion is that any fears that white achievement has suffered because of Southern school desegregation are completely unfounded.

We also found strong social class gains. Blacks who go to school with high status whites have higher achievement than those who go to school with whites from low SES families. The reverse does not appear to be true; white achievement is not affected by the SES of the blacks in the school. Desegregation is most successful when high status whites are involved.

Finally, we found that both black and white achievement is affected by the quality of the race relations in the school. Schools with good race relations have higher achievement. (We have assumed that better race relations cause these achievement gains; it may be, however, that it is the better performance of students that causes improvement in race relations.) We read our data as implying that policy makers should

be concerned more with the quality of racial contact than with the simple demography of desegregation.

The racial atmosphere of the school is important for both blacks and whites. At both the fifth and tenth grade levels, liberal white racial attitudes seem to improve the performance of blacks. Racial tension is also detrimental to white achievement. What is most interesting is that the worst effects of racial tension for whites occur in high percentage white schools. We assume that minority students who are harassed by those in the majority will naturally perform poorly in school. It is less obvious that prejudice and hostility are a drain on everyone's good energy. White achievement is hurt by racial tension where whites are in a clear majority.

The fact that achievement is highest in newly desegregated Southern schools where there are roughly equal numbers of blacks and whites suggests that Southern blacks are uncomfortable when they are in the minority.³ This is true only of black males, however.

We are intrigued by the differences between male and female response to integration. At the fifth grade level, black male achievement goes down in predominantly white schools, while black female achievement is higher in these schools. The same general phenomenon occurs for fifth grade whites. Once we control for social class, racial composition has little impact on males, although the mean achievement score is higher in the middle range schools. Fifth grade females also do best in middle range schools, but perform better in predominantly black schools than in predominantly white ones.

In the tenth grade, this pattern is accentuated. Black males do best in schools in which the ratio is 50-50/white-black; they do not do well in predominantly white schools. For females, the effect of integration is linear--they do best in schools where a high percentage of the students are white. Whites seem to show the same pattern; i.e., males gain

³The same pattern--achievement higher in mixed schools, and lower for both white and black schools--is reported by Christopher Jencks and Martha Brown in "The Effects of Desegregation on Student Achievement: Some New Evidence from the Equality of Educational Opportunity Survey." (Cambridge: Harvard Center for Educational Policy Research, 1972).

the most from being in schools that are 41-70 per cent white, while white females do best in predominantly black schools. All of this suggests that it is difficult for males of either race to be in schools where they are outnumbered, regardless of the situation in the schools.

We also found that black females in predominantly white schools do very well if they can become involved in athletics and social clubs; if they become involved in the social life of the school they do better academically. This is not true for black high school males.

White females do very well in predominantly black schools. We speculate that this has to do with sex role expectations. Whites in black schools are expected to do well, regardless of their sex. Females in white high schools do not have this special status. They are not expected to excel in school and, at a point, intellectual achievements become suspect and create social difficulties. In black schools, girls have status as whites rather than as females. As whites, they are expected to do well academically, regardless of their sex.

Conclusion

The percentage of variance explained by the racial composition of the school is not large. Thus, we cannot say that sending blacks and whites to school together will instantly raise achievement by a grade level. There are, however, moderate achievement gains for all races and grades. The optimal situation appears to be one where there is a fairly equal split between races.

Schools with good race relations have higher achievement. This suggests that school policy makers should work to improve race relations, and supports our contention that ESAP raised achievement by changing the racial climate in the schools.

In general, females fare much better than their male peers in situations where they are outnumbered by members of the opposite race. Black females do well in predominantly white high schools as long as they can become involved in the social and athletic life of the school. White high

school females do very well in predominantly black schools. Integration appears to be more of a problem for males of both grades and races. Their achievement is higher in schools that are mixed racially, but not in schools where they are clearly outnumbered. We need to explore further the nature of sex differences and their influence on racial tensions and achievement in schools.

APPENDIX

Social Class Controls

Fifth grade blacks and whites
Per cent do not use food stamps
Mean number of siblings
Per cent receive regular newspaper
Per cent live with both parents
Per cent who have bicycles
Border vs. Deep South dummy variables
Per cent urban in district

Tenth grade blacks and whites

Per cent mothers who are high school graduates
or more
Per cent who receive a regular newspaper
Per cent who live with both parents
Mean number of siblings
Per cent urban in district

WORKING PAPER 5

BUSING

by

James A. Davis¹

Introduction

This paper considers the consequences (or correlates) of busing in the ESAP schools. The sample design for the study is discussed elsewhere in the report; we note here only that we are dealing with survey data from fifth and tenth grade students in 555 recently desegregated school districts. Data were collected by NORC in the spring of 1972, under a contract with the United States Office of Education.

Busing or "forced busing," as its opponents call it, is supposed to be a controversial topic, but in a statistical sense this is not entirely correct. Within the white population, surveys show almost monolithic opposition, not the fifty-fifty split indicative of controversy. Table 5.1 combines Gallup data for 1970 and 1971 with results from NORC's 1972 General Social Survey for the question: "In general do you favor or oppose the busing of Negro and white children from one school district to another?"

At least three-quarters of the total population say "oppose" and the figure reaches a remarkable 94 per cent among Southern whites. Perhaps equally remarkable is the ample "low" of 42 per cent among Northern blacks. Since blacks are far from inhibited in expressing pro-civil rights opinions in surveys, this degree of disapproval is striking in a staunchly pro-civil rights group.

¹With the assistance of Gregory Gaertner and A. Wade Smith.

TABLE 5.1

ATTITUDES TOWARD BUSING IN THE U.S. POPULATION

(Per cent saying "Oppose" in answer to the question: In general, do you favor or oppose the busing of Negro and white school children from one school district to another?)

Total "Oppose"	March, 1970	August and October, 1971	March, 1972
	81 (--) ^b	75 (--)	77 (1,606) ^d
<u>By Race:</u>			
White	85 (--)	78 (--)	86 (1,282)
Nonwhite	48 (--)	46.5 (--)	45 (242)
<u>By Region:</u>			
South	87 (--)	83 (--)	80 (472)
White	-- ^c	--	94 (329)
Nonwhite	--	--	48 (143)
North ^a	79 (--)	72 (--)	80 (1,052)
White	--	--	84 (953)
Nonwhite	--	--	42 (99)

SOURCES: 1970 and 1971 are Gallup surveys, as reported in Frank Armbruster, The Forgotten Americans (New Rochelle, New York: Arlington House, 1972), pp. 84-85. 1972 data are unpublished tabulations from the 1972 NORC General Social Survey.

Notes: All data are national samples of the adult population age 18 and older (age 21 and older in 1970). 1971 figures are averages of percentages for two surveys.

^aAveraged from separate percentages for East, Midwest, and South.

^bN's not reported in original source. 1970 is probably about the same as 1972; 1971 is probably about double.

^cNot reported in the original source.

^dTotal of 1,606 exceeds total in subtables (1,524) because the latter data are taken from a larger table in which "No answers" on education are excluded.

For comparison, Table 5.2 gives similar data on school integration per se. At first glance, it hardly appears possible that the answers could be coming from the same populations. Table 5.2 shows consistently strong support for integrated schools among Northern whites, and a striking increase in pro-integration sentiment among Southern whites.

TABLE 5.2

ATTITUDES TOWARD SCHOOL INTEGRATION IN THE U.S. WHITE POPULATION
(Per cent saying "No" in answer to the question listed)

Question and Region	1959	1965	1966	1969	1972
Would you yourself have any objection to sending your children to a school where <u>a few of the children are Negroes?</u>					
North	92	91	93	93	96(1,002)
South	25	62	74	78	83 (336)
Would you yourself have any objection to sending your children to a school where <u>half of the children are Negroes?</u>					
North	63	65	64	69	79(1,002)
South	12	27	44	47	60 (336)
Would you yourself have any objection to sending your children to a school where <u>more than half the children are Negroes?</u>					
North	35	37	32	39	45(1,002)
South	8	16	27	26	32 (336)

SOURCES: 1959 through 1969 are Gallup surveys, as reported in George Gallup, The Gallup Poll: Public Opinion 1935-1971 (Random House, 1972). 1972 data are unpublished tabulations from the 1972 NORC General Social Survey.

Notes: The 1959 and 1965 Gallup questions were asked only of "parents of school age children." 1966 and 1969 respondents are not described as parents in the original source. 1972 data are for all respondents.

Gallup N's are not reported, but should be close to those for 1972.

All samples are of the total U.S. white population. 1959 through 1969 are for those age 21 and older; 1972 is for those age 18 and older.

Examining Table 5.1 and Table 5.2 together, we observe that a month before the ESAP study, 94 per cent of Southern whites opposed busing, while 60 per cent were willing to send their children to schools that are half black. A common response to such findings is to infer that the respondents are lying or are hypocritical, but this inference will not resolve the apparent contradiction. If whites are under social pressure to give pro-integration answers, why do two-thirds of them oppose integration when "more than half of the children are Negroes"? If anti-busing is just a code word for anti-integration, why aren't more than 6 per cent of the Southern whites under social pressure to give a "liberal" response?

The columns in Table 5.2 suggest another interpretation. We see striking variations, depending upon the hypothetical racial context. For Southern whites in 1972, the pro-integration percentage ranges from 32 per cent to 96 per cent, depending upon the question--a difference much stronger than the region or time effects in the table. Taken together, Tables 5.1 and 5.2 suggest (but do not prove)² the following:

In the general population, there is almost no support for school segregation as a principle, but there are strong concerns about the social situations that are assumed to accompany integration.

To a militant integrationist,³ the distinction may appear to be mere hair splitting, but I would argue that it is not. Social research has no argument against those who believe racial integration is just plain wrong as a moral principle. If, however, the issue turns on whether a given aspect of integrated schooling has a given deleterious effect on the children, appeal to the facts is in order.

As usual, the facts that emerge from the ESAP research are far from simple and unambiguous, but the data reported here are probably the

²A recent unpublished study by Jonathan Kelley ("Racism and School Busing," Columbia University, February, 1973, litho.) tends to support the proposition. In an extensive analysis of race items in the 1972 NORC General Social Survey, Kelley shows that the busing item has low correlations with race prejudice items and a somewhat different pattern of correlations with personal characteristics.

³I think it is appropriate to note that the writer would be classified in this category.

best information available (or likely to be soon available) on this pressing social problem.⁴ Thus, the aim of this analysis is to assess the impacts, if any, of a number of aspects of school integration, loosely described by the word "busing."

A Note on Statistical Conclusions

The data from the ESAP study have a useful but complicated logical structure that must be borne in mind when reading the statistical results. A hypothetical example may clarify. Consider two fictitious questionnaire items: "Do you watch TV a lot?" (Yes, No) and "How often do you go to the movies?" (Regularly, Occasionally, Seldom). Ignoring such technical details as case weighting and minimal class-subsample size explained elsewhere in the report, the data preparation we used would proceed as follows:

- 1) The questionnaire is administered to fifth grade samples in 361 elementary schools and tenth grade samples in 194 high schools. In each school, sample sizes are close to 50 cases.
- 2) Consider the sample from Jones School. It has 50 cases, 34 white and 16 black. These students give the following answers:

a)	TV	Yes	No	Total	Per Cent Yes
	White	26	8	34	76
	Black	8	8	16	50

b)	Movies	Regularly	Occasionally	Seldom	Total	Per Cent Regularly or Occasionally
	White	13	11	10	34	71
	Black	8	4	4	16	75

- 3) For each question, we formed a dichotomy (e.g., Regularly and Occasionally versus Seldom) and calculated the percentages within races within schools, e.g., 76 per cent Yes on TV for Jones School white students; 50 per cent Yes for Jones School black students.

⁴Because the ESAP data are so much better than anything else available on the topic, we have chosen not to review the literature, since it is almost all based on such small and inadequate samples that, in the case of contradiction, we are almost certainly "right." The problems in our own sample and design are treated elsewhere in this report.

- 4) This gives each school two scores on each variable, one for blacks and one for whites. Such scores can range from 0 to 100.

For the research reported in this chapter, we generally dichotomized these within-race-and-school scores. For example, if we chose 60 per cent as the cutting point for TV in each race, Jones School would be scored as "high" for TV-white and "low" for TV-black.

Within-race-and-school scores can be analyzed using any standard statistical technique ranging from percentage tables to multiple regression analysis. The main point is that the generalizations apply to schools, not ipso facto to individual students. Thus, for TV-white, we might get the following single-variable results in the fifth grade:

Mean = 83% (937)

The numbers should be read like this: For 937 fifth grades, the average score on the variable, "per cent of whites watching TV," is 83. This statement does not imply that 83 per cent of the white students watch TV. (Note, for example, that students in smaller schools and students in racial minorities within a school will make a disproportionate contribution to the mean.)

Similarly, when examining correlations, a finding such as, "there is a positive correlation between TV-black and Movie-black," should be construed as follows: In schools where black students are high on TV watching, black students tend to be high on movie watching. This finding does not guarantee that the heavy TV watchers tend to be the same youngsters as the heavy movie watchers. A hypothetical finding may illustrate: there is probably a school-level correlation between the proportion of high school students taking three years of Russian and the proportion taking three years of German, but the particular students who do the former are quite unlikely to also do the latter.

In summary, we repeat: the statistical conclusions drawn are about school populations, not necessarily about individual students within school populations.

Predictor Variables (Mode of Desegregation)

A school bus is a large, yellow, essentially unambiguous vehicle. School busing, however, is hard to define with a single measure, especially since the lengthy questionnaires for the project do not contain a direct question asking whether children are bused for the specific purpose of achieving integration. Common sense suggests that the concept should be broken down as follows:

1) The first variable we will call "busing per se": the percentage of students who are transported to and from school by bus, rather than in cars, on foot, or by bicycle. It is doubtful, of course, that the sheer fact of riding in a bus has much to do with anything important, but we can hardly ignore bus riding in a study of busing. The ESAP data file contains the percentage of students traveling by bus for whites and blacks in the fifth and tenth grade samples. We decided to dichotomize all four groups at 67 per cent. Table 5.3 shows the results.

The figures show a considerable race difference. In most of the schools, two-thirds or more of the black students ride buses, while less than two-thirds of the whites do so.

TABLE 5.3

BUSING PER SE, BY RACE AND GRADE

(Per cent of schools where 67 per cent or more travel by bus)

Race	Grade	
	Fifth	Tenth
White	39 (971/112) ^a	19 (536/46)
Black	58 (937/146)	65 (506/76)

^aN's are weighted, as explained elsewhere in the project report. The number after the slash is the total number of "no answer" schools, mostly due to schools where the particular racial group was too small to justify tabulations.

2) In public discussions of the busing matter, the concept of the importance of the neighborhood school appears regularly. Educators, who have been working for decades to consolidate rural schools, might be surprised to learn that attending the closest possible school is a fundamental American value; opponents of busing argue that it is poor policy to send children to distant schools when closer ones exist. Indeed, if busing did not imply such a pattern, it is hard to see how its opponents can oppose it without advocating overtly segregationist principles.

The ESAP questionnaires asked each child whether there is a public school closer to his home than the one he now attends. We can calculate the percentage of students who are attending the closest school (i.e., the percentage who do not say there is a closer one). The percentages run high (Table 5.4).

In each of the four groups, the mean is roughly 75 per cent; i.e., in the average school in the study, about three-quarters of the students report they are attending their neighborhood school. In both grades, the percentages run higher for whites. We infer that desegregation plans more often involve new school assignments for blacks than for whites. Because of the race correlation, the variable which we will refer to as "nearest school" was dichotomized to give equal splits in the different data sets. Table 5.5 summarizes.

TABLE 5.4

STUDENTS ATTENDING CLOSEST SCHOOL, BY RACE AND GRADE

(Means for school distributions on per cent attending closest school)

Race	Grade	
	Fifth (Per Cent)	Tenth (Per Cent)
White	76 (937/146) ^a	84 (536/46)
Black	66 (971/112)	70 (506/76)

^aN's are weighted, as explained elsewhere in the project report. The number after the slash is the total number of "no answer" schools, mostly due to schools where the particular racial group was too small to justify tabulations.

TABLE 5.5
DICHOTOMIES FOR PER CENT ATTENDING NEAREST SCHOOL

Data Set and Category	Value	Per Cent	N
<u>Fifth Grade Blacks:</u>			
High	$\geq 75\%$	49	457
Low	$< 75\%$	51	480
No answer			146
<u>Fifth Grade Whites:</u>			
High	$\geq 84\%$	57	553
Low	$< 84\%$	43	418
No answer			112
<u>Tenth Grade Blacks:</u>			
High	$\geq 75\%$	58	291
Low	$< 75\%$	42	215
No answer			76
<u>Tenth Grade Whites:</u>			
High	$\geq 87\%$	60	324
Low	$< 87\%$	40	212
No answer			46

3) The last busing variable is racial composition. Presumably, the purpose of desegregation arrangements is to modify the racial composition of the schools; it is possible that, as Table 5.2 suggests, the opposition to busing is part of a syndrome that includes concerns about the effects of various racial proportions. Ideology aside, we certainly must introduce this variable as a statistical control so that we can keep separate the effects of how children get to school, whether they attend a neighborhood school, and the social composition of the school they do attend.

Our measure is the percentage of black pupils in the school, as reported by the principal. We will call this variable "per cent black." This percentage is not, of course, necessarily the same as the percentage black for a particular student's classes within the school. Table 5.6 shows that 35 per cent gives a comfortable cutting point for both fifth

and tenth grade schools. The average school at both grade levels runs about two-thirds white to one-third black.

TABLE 5.6

PER CENT BLACK IN THE SCHOOL BY GRADE LEVEL

Grade	Per Cent of Schools with 35 Per Cent or Less Black Students
Fifth	52 (1,077/6)
Tenth	44 (582)

The three components--busing per se, nearest school, and per cent black--give five variables, since there are white and black scores for the first two but not for the third.

The five variables are far from independent statistically and the matter is made even more complex when we consider an ecological variable, urbanism. The strongest correlate of busing per se is whether the school is in the city or in the country. Urbanism was measured by Census figures on the per cent of the county that was urban in 1960. Using a cutting point of 55 per cent, we classified 62 per cent of the fifth grades and 47 per cent of the tenth grades as urban.

Table 5.7 gives the zero-order (no variables controlled) correlations among the desegregation variables. The coefficient is Yule's Q, a measure of association appropriate for dichotomous data.⁵ We will not interpret the table directly, save to note that there is rough agreement

⁵Like the product moment correlation coefficient, Q has a value of .00 when the variables are statistically independent, a maximum of +1.00 for the strongest possible positive association, and a minimum of -1.00 for the strongest possible negative association. When Q's and product moment correlations are run on the same data, the Q's are always higher, of mathematical necessity. See James A. Davis, Elementary Survey Analysis (Englewood Cliffs, New Jersey: Prentice Hall, 1971) Chapter 2. See Appendix 1 to this paper (p. 119) for further discussion.

between the fifth and tenth grade coefficients. Instead, we will look at the intercorrelations of the desegregation items within the two levels of urbanism. These data appear in Table 5.8.

TABLE 5.7

ZERO-ORDER ASSOCIATIONS (YULE'S Q) AMONG DESEGREGATION
VARIABLES AND URBANISM

(Tenth Grade Above Diagonal, Fifth Grade Below Diagonal)

Item	Urbanism	Busing Per Se		Nearest School		Per Cent Black
		Whites	Blacks	Whites	Blacks	
Urbanism		-.45	-.71	-.20	-.45	-.32
Busing Per Se:						
Whites	-.53		.16	-.25	.01	-.02
Blacks	-.72	.33		.09	-.10	-.06
Nearest School:						
Whites	-.36	-.27	.51		.24	-.08
Blacks	-.55	.38	-.02	.14		.36
Per Cent Black	-.35	.34	-.24	-.33	.14	

Notes: Smallest weighted N's: fifth grade, 830; tenth grade, 460.

High categories:

Urbanism--high per cent urban

Busing--high per cent traveling on bus

Nearest school--high per cent attending nearest school

Per cent black--high per cent black.

The import of Table 5.8 is even less obvious than Table 5.7, but Figure 5.1 helps a bit. In Figure 5.1 we have drawn all of the zero-order associations of .30 or more in magnitude, following the convention that a Q of .30 is "moderate."⁶

⁶ Davis, Elementary Survey Analysis, p. 49.

TABLE 5.8

ZERO-ORDER ASSOCIATIONS (YULE'S Q) AMONG DESEGREGATION VARIABLES
WITHIN URBAN AND RURAL COMMUNITIES

(Tenth Grade Above Diagonal, Fifth Grade Below Diagonal)

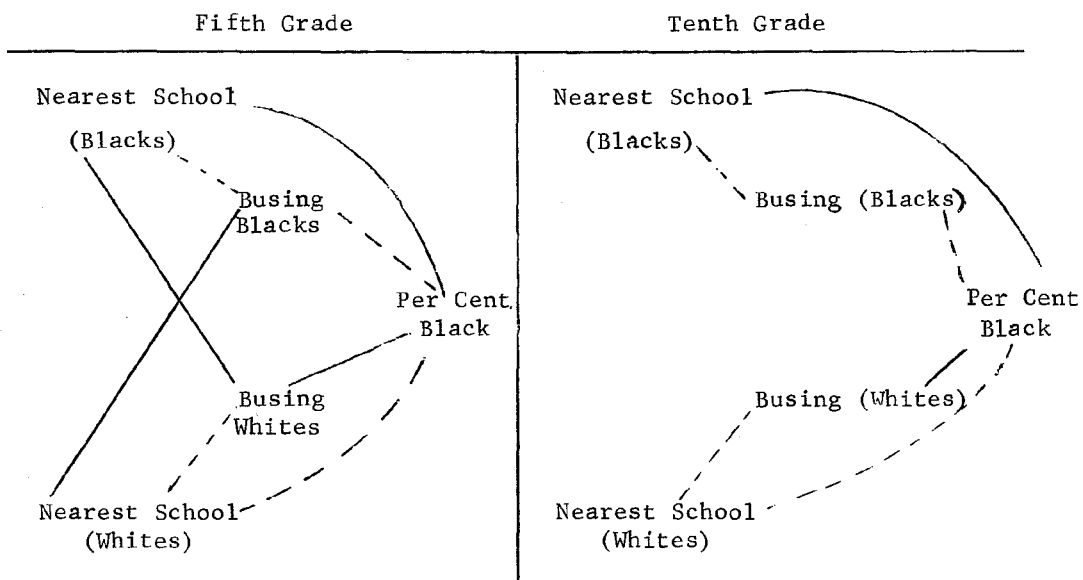
Item	Busing Per Se		Nearest School		Per Cent Black					
	Whites	Blacks	Whites	Blacks						
A) Relatively Urban (55 per cent or more Urban)										
Busing Per Se:										
Whites						-.24	-.58	.13	.62	
Blacks						-.04		.18	-.35	-.32
Nearest School:										
Whites						-.60	.46	.	.08	-.49
Blacks						.30	-.50	-.01		.48
Per Cent Black						.43	-.63	-.43	.50	
B) Relatively Rural										
Busing Per Se:										
Whites										
Blacks	.63		-.30	-.40	-.20					
Nearest School:										
Whites	-.07	.49		.28	.16					
Blacks	.25	.20	.17		.09					
Per Cent Black	.03	.32	-.39	.23						

Notes: Smallest weighted N's: fifth grade rural = 321
fifth grade urban = 509
tenth grade rural = 244
tenth grade urban = 216

High categories:

Urbanism--high per cent urban
Busing--high per cent traveling on bus
Nearest school--high per cent attending nearest school
Per cent black--high per cent black.

A) Relatively Urban



B) Relatively Rural

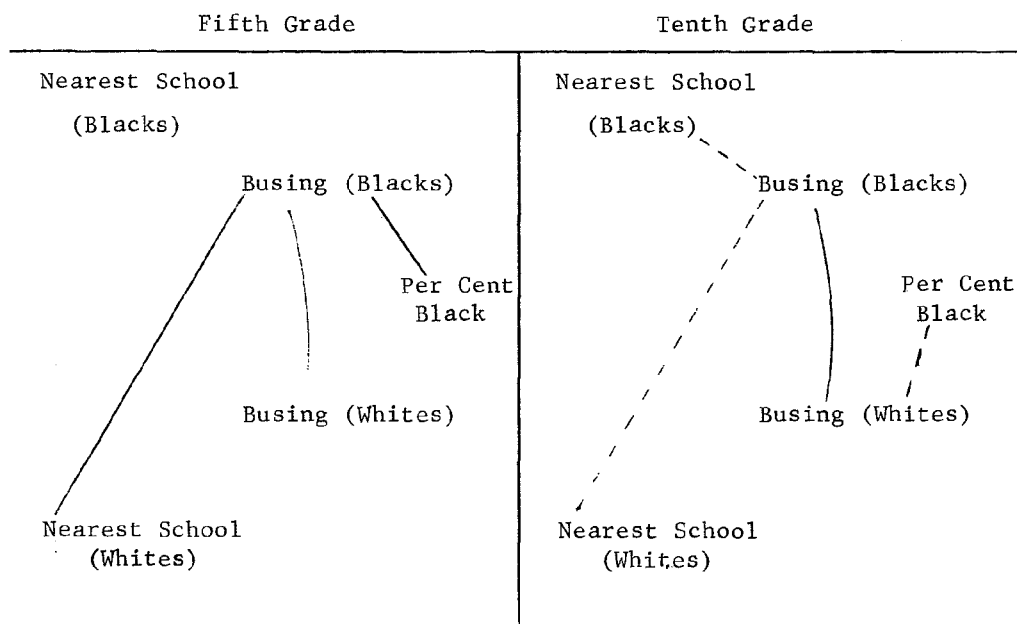


Fig. 5.1--Data in Table 5.8 in diagram form; magnitudes less than .30 excluded.

(Solid Lines Equal Positive Associations, Dashed Lines Equal Negative Associations)

We begin with the urban fifth grades in the upper left-hand corner of Figure 5.1. Assuming a high degree of ecological racial segregation in these communities and the use of busing to change school racial compositions, the lines in the diagram make a lot of sense. For both races, busing (a) has a negative relationship with attending the nearest school; (b) has a positive relationship with the opposite race attending the nearest school; and (c) has a negative relationship with the per cent of students of one's own race. The suggestion is that busing is used to take students from their neighborhoods to schools in neighborhoods of different racial composition, thereby "diluting" the white or black preponderance in the schools.

Remaining with the urban fifth grade diagram, we next observe that the variable of "nearest school" behaves in the opposite fashion. It (a) has a negative correlation with busing students of the same race; (b) has a positive correlation with busing students of the opposite race; and (c) has a positive relationship with the per cent of students of one's own race. Thus, busing appears to be positively correlated with integration, and attending a neighborhood school appears to be negatively correlated with integration.

Now we shift to the tenth grade urban diagram. The pattern is essentially the same, except that the cross-correlations for busing one group and attending nearest school for the other are not strong enough to appear in the diagram.

When we turn to the rural areas, the bottom diagrams in Figure 5.1, this neat pattern just disappears. Busing has fewer correlations with racial composition and those that appear have the "wrong" signs. In the rural tenth grades, busing of whites is negatively correlated with per cent black (the more white students bused, the higher the per cent white in the school). In the rural fifth grades, busing of blacks is positively correlated with per cent black (the more black students bused, the higher the per cent black in the school).

We do not know enough about the rural South or the details of the court-ordered desegregation plans to comment on these findings for the rural schools. For now, all we can observe is this:

- 1) In the urban schools, busing per se behaves like the "forced busing" of policy discussions, but this is not true in the rural schools.
- 2) It will be necessary to examine all our results separately for urban and rural schools.

Dependent Variables

Having analyzed the system of variables that describe "mode of desegregation," the social arrangements for desegregation in these schools, we turn to the dependent variables, the possible "consequences" of busing. Social science theory has little to suggest in the way of hypotheses, and the hundreds of variables in the project data are too rich for systematic coverage. Therefore, we made a common sense selection of the following topics:

- 1) Social Tensions
- 2) Student Morale
- 3) Race Relations
- 4) Academic Achievement

and will discuss each in turn.

1) Social Tensions

The simplest hypothesis is that busing is associated with high levels of tension in the schools. Opponents of busing claim that it is disruptive and unnatural and even proponents might expect a "spurious" correlation produced by community opposition to the policy. For our analysis, we chose two indicators of social tensions, "desegregation problems" and "tension."

Question 7 in the schedule for teachers reads, "On the whole, how would you evaluate the way in which desegregation is working out in your school?" (almost no problems, some minor problems, some serious problems, many serious problems). The first two responses were combined and pooled to give the percentage of teachers reporting minor or no problems. The percentages run high and we chose to dichotomize at the 85 per cent level.

This gives a 51-49 low problem-high problem split at the tenth grade level, and a 67-33 split for fifth grades; that is, in half of the high schools and in two-thirds of the grade schools, 85 per cent or more of the teachers reported minor problems or no problems with desegregation. Such figures should not be taken at face value, but they should not be written off casually either. Even though the schools in the sample were undergoing striking changes, the typical school in the sample shows a strong majority of the teachers reporting low levels of problems.

Question 5 in the teacher schedule reads, "I feel the atmosphere is tense in this school" (yes, no). When pooled and averaged, the figures are quite similar to those for desegregation problems. Using the cutting point of 85 per cent, we get a 58-42 high-low tension split at the fifth grade and a 53-47 split at the tenth grade level. In other words, in about half of the schools, regardless of grade level, 85 per cent or more of the teachers checked "no."

2) Student Morale

For our second topic, we chose student reports on morale, using one global and one specific item. The global measure is self-report of happiness. Slightly different wordings were used at the two levels: for the fifth grade, the question was "Would you say you are very happy, pretty happy, or not too happy these days?" (very happy, pretty happy, not too happy); and for the tenth grade, it was "Everything considered, are you very happy, pretty happy, or not too happy these days?" (very happy, pretty happy, not too happy). Table 5.9 shows the trends by grade and race.

There is no difference by grade level, but there is a consistent racial difference. In both grades, blacks report lower levels of happiness. This is a repeated and poignant finding in national surveys of adults; it is interesting to compare these results with data from the same 1972 NORC General Social Survey discussed in connection with Table 5.1. The General Social Survey used a third minor variation, "Taken all

together, how would you say things are these days--would you say that you are very happy, pretty happy, or not too happy?" Table 5.10 gives the results.

TABLE 5.9

MEAN PER CENT OF STUDENTS PER SCHOOL REPORTING THEMSELVES AS "VERY HAPPY" OR "PRETTY HAPPY" (AS OPPOSED TO "NOT TOO HAPPY"), BY GRADE AND RACE

Race	Grade	
	Fifth	Tenth
White	77 (971) ^a	79 (535)
Black	64 (937)	63 (506)

^aNumber in parentheses is the weighted total of schools on which the mean percentage is based.

TABLE 5.10

RACE, REGION, AND SELF-REPORT OF HAPPINESS IN A 1972 ADULT NATIONAL SAMPLE

(Per Cent "Very Happy" or "Pretty Happy")

Race	Census Region		Total
	South	Other	
White	87 (340)	85 (1,002)	85 (1,342)
Nonwhite	73 (157)	75 (107)	74 (264)
Q ^a	= +.42	+.31	+.33

Total 1,606
No answer 7
1,613

^aQ has a value of .00 when the variables are statistically independent, a maximum of +1.00 for the strongest possible positive association, and a minimum of -1.00 for the strongest possible negative association.

We see the same trend in the national adult data. Among whites, 85 per cent give a high morale response; among blacks, the figure is 74 per cent. The relationship appears a bit stronger in the South, but testing for a significant difference in the Q coefficients shows that the regional difference in the coefficients can be attributed to sampling fluctuation. If one is willing to assume that the mean of the school percentages is essentially the same as the percentage for all students (a not unreasonable assumption here), we can compare the data in Tables 5.9 and 5.10. The race differences ($Q = +.38$ for tenth graders, $+.31$ for the fifth graders in Table 5.9) are just about the same as in the adult data, although all the percentages are lower. This could indicate a lower morale for both groups of students compared with the adult population, but it is more probable that the difference comes from a well-known tendency to give more socially desirable answers in a face-to-face interview than in a paper and pencil questionnaire. We would interpret these results as follows: there is a racial difference in happiness in both tenth and fifth grade samples; its magnitude is just about the same as that found in the general adult population. For our purposes, the happiness percentages were dichotomized at 64 per cent for blacks and 79 per cent for whites, giving an essentially 50-50 split at both grade levels.

The more specific measure of morale is self-explanatory:

Fifth grade: "Do you usually hate school?" (I usually hate school, I usually don't hate school)

Tenth grade: "Do you usually hate school?" (Yes, No)

Taking school means for the per cent checking a low morale answer ("I usually hate school" for fifth grade, "yes" for tenth), we see a grade difference, but no consistent effect by race. Table 5.11 gives the figures.

Table 5.11 says that in the typical school in the study, about one-third of the students say they hate school, with disaffection being a bit stronger in the fifth grades. For our analyses, we reversed the direction (i.e., the percentage who say they don't hate school), using cutting points of 65 per cent for tenth grades and 60 per cent for the fifth grades. This

gives us the following percentages of schools scoring high for the variable, "liking school": 46 per cent, fifth grade blacks; 40 per cent, fifth grade whites; 62 per cent, tenth grade blacks; 53 per cent, tenth grade whites.

TABLE 5.11

MEAN PER CENT OF STUDENTS PER SCHOOL REPORTING THEY
"USUALLY HATE SCHOOL," BY GRADE AND RACE

Race	Grade	
	Fifth	Tenth
White	43 (971) ^a	35 (536)
Black	46 (937)	32 (506)

^aNumber in parentheses is the weighted total of schools on which the mean percentage is based.

3) Race Relations

Race relations is an obvious third topic. We will be asking whether various aspects of the desegregation process are associated with interracial friendships and attitudes toward integrated schools. Interracial friendship levels were measured by these items:

Fifth grade: "Think of your three best friends in the fifth grade in this school. Are they all the same race as you or is one or more of a different race?" (Yes, all same race as me; No, one or more is of a different race)

Tenth grade: "Think for a moment about the three students you talk with most often at this school. Are they the same race as you?" (Yes, all same race as me; No, one or more is from another race)

Table 5.12 gives the school means by grade and race. The results presented in this table show the strongest race and grade differences of any

measures discussed in this section. Taken at face value, they show higher rates of cross-race contact in the fifth grade than in the tenth, and higher rates for blacks than for whites. In addition, the rates for tenth grade whites seem especially low, suggesting some sort of interaction effect in the correlations.

TABLE 5.12
MEAN PER CENT OF STUDENTS PER SCHOOL REPORTING
ONE OR MORE OPPOSITE-RACE ASSOCIATES, BY
GRADE AND RACE

Race	Grade	
	Fifth	Tenth
White . .	43 (971) ^a	18 (537)
Black . .	52 (937)	35 (506)

^a Number in parentheses is the weighted total of schools on which the mean percentage is based.

The data cry out for discussion and interpretation, but we shall limit ourselves to noting the following problems of interpretation:

- 1) The tenth grade and fifth grade questions are far from identical in wording.
- 2) In most of the schools, whites outnumber blacks, which gives black students more mathematical possibilities for cross-race associations.
- 3) Grade differences could come from decreasing cross-race contacts as students become older or from the entry of more "liberal" younger cohorts into the school systems.
- 4) The fifth grade pattern of concentrating studies in one room is different from the high school pattern of moving from class to class. It is possible that even in highly desegregated high schools, students' classes are essentially mono-racial.

Such matters prompt us to judicious silence on the import of the differences in Table 5.12. Technically, however, they force us to give a different cutting point for each of the four groups: we used 18 per cent for

tenth grade whites, 35 per cent for tenth grade blacks, 42 per cent for fifth grade whites, and 51 per cent for fifth grade blacks. This gave us close to 50-50 splits in each of the four data sets.

As a measure of attitudes, we used the following question:

"If you could choose the kind of school you would go to, would you pick one with--

All white students
All black students
A mixture of different kinds of students
Other"

Identical wording was used in both grades, save for the absence of "Other" in the fifth grade list of responses.

Taking the per cent checking "A mixture of different kinds of students" as an index of pro-integration attitudes, we get the pattern, by grade and race, shown in Table 5.13: integration attitudes show a race difference but no grade trend. In both grade levels, clear majorities of blacks prefer integrated schools, while white approval runs a shade under 50 per cent in the average school.

TABLE 5.13

MEAN PER CENT OF STUDENTS PER SCHOOL PREFERRING
"A MIXTURE OF DIFFERENT KINDS OF STUDENTS"

Race	Grade	
	Fifth	Tenth
White . . .	47 (951) ^a	42 (537)
Black . . .	57 (1,030)	62 (506)

^aNumber in parentheses is the weighted total of schools on which the mean percentage is based.

All four scores were given the same cutting point, 50 per cent. This gives the following variation in the per cent of schools scored high: fifth grade blacks, 69 per cent; tenth grade blacks, 78 per cent; fifth grade whites, 46 per cent; tenth grade whites, 34 per cent.

4) Academic Achievement

We were interested in seeing whether mode of desegregation variables were associated with academic achievement. The tests constructed for the project are explained in detail elsewhere in this report and we need only say that they are short forms of conventional "standardized tests." For this chapter we used the reading subtest and the mathematics subtest. Because different tests were used in the fifth and tenth grades, and because of the substantial race differences, we simply dichotomized each data set differently to give essentially 50-50 splits. The cutting points were as follows:

Reading: fifth grade white, 63; fifth grade black, 37;
tenth grade white, 59; 10th grade black, 33

Math: fifth grade white, 79; fifth grade black, 47;
tenth grade white, 48; tenth grade black, 20

In each case, a high score was assigned to schools with a mean equal to or greater than the cutting point, a low score to schools with a mean under it.

Methodology

The method of analysis for this chapter is straightforward: we will examine correlations between the independent (busing) variables and the dependent measures of tensions, morale, race relations, and academic achievement, introducing appropriate controls to test for spurious associations. Less obvious is the rule to use for deciding whether a particular correlation is "present" or "absent." Tests of significance are important, but have some limitations in these data. Since the schools are not a simple random sample from a clearly defined universe, since the data we worked with

are weighted, and since a large number of correlations were run, we cannot rely solely on chi-square tests. More important is the problem of consistency. What shall we say about "morale" if it should turn out that "happiness," but not "liking school," is correlated with busing among tenth graders, but not fifth graders? Statistically, such a pattern of findings can be treated as a higher-order interaction effect, but the interpretation of such relationships is very murky in our present data. To avoid such problems we made the following decisions before tabulations were made:

- 1) We required that the results for the fifth and tenth grades agree before a finding was accepted. Granted that there are important maturational and cohort differences in five years among adolescents, we were unable to predict ahead of time how they would affect the relationships analyzed, and were sure that it would be all too easy to do so after the fact.
- 2) We required that the results for the two indicators of each concept agree before a finding was accepted. Take, for example, the tension measures. It could happen that busing would affect integration problems without affecting perceived tension levels, but a serious problem that doesn't change the level of tension in a school is serious in such a limited sense that it doesn't tell us much about the policy concerns that prompted the research. Or again, take race relations. If attending a neighborhood school affects interracial friendships but not attitudes toward integration, something may be going on, but it isn't something that makes much sense in terms of common intuition or social science theory. The decision is one of those rare situations of taking one's own advice.⁷
- 3) We did not require consistent findings across races because there is good reason to suspect that many of the variables will work in different or opposite ways in the two racial groups.
- 4) In terms of magnitude, we required that the zero-order Q coefficients have an average absolute value of .20. This is a bit above the conventional .10 magnitude rule of thumb,⁸ but helps to avoid situations such as .05 + .05 + .05 + .25, which average to .10. Sample calculations indicate that a zero-order Q of .20 or stronger will be unambiguously significant at the .05 level in a sample size of 555, the total number of schools in the study.

⁷Ibid., p. 172.

⁸Ibid., p. 49.

Findings

1) Social Tensions

Table 5.14 shows the zero-order associations between the five desegregation variables and the two tension measures in the fifth and tenth grades. For four of the predictors--per cent black, nearest school white, nearest school black, and busing per se black--there are no appreciable associations. The one apparent exception, nearest school black, illustrates the application of our methodological principle. There is a positive association between few desegregation problems reported and the per cent of black fifth graders attending the nearest school, but it does not turn up in the tenth grade, and there are essentially zero results for the "no tension" variable. Thus, we treat this lone coefficient as a fluke.

TABLE 5.14

ZERO-ORDER ASSOCIATIONS BETWEEN BUSING VARIABLES
AND SOCIAL TENSION ITEMS

Busing Variable	Tension Measures				Average
	Few Desegregation Problems		No Tensions		
	Fifth Grade	Tenth Grade	Fifth Grade	Tenth Grade	
<u>Busing Per Se:</u>					
Whites . . .	+.21	+.57	-.03	+.38	[+.28]
Blacks . . .	+.07	-.09	+.06	-.12	-.02
<u>Nearest School:</u>					
Whites . . .	.00	-.04	+.01	.00	-.01
Blacks . . .	+.33	-.02	+.04	-.10	+.06
Per Cent Black	-.07	+.18	+.03	+.14	+.07

Busing of whites does show some trends. It has an average association of $+ .28$, and three out of four coefficients are greater than $.20$. The $-.03$ for the no tensions variable for fifth grade is an embarrassment, but since the other three relationships are unambiguous, we will relax our rule and pay some attention to the finding. Thus, perhaps contrary to one's expectations, the busing of white students appears to be associated with lower levels of social tensions in the schools.

Before accepting the proposition, however, we should introduce some control variables. Urbanism is an obvious candidate, but two others are worth attention. The first is racial change. It could happen that findings in our data are due to sudden social change, rather than its content; or that they are temporary relationships that only obtain during transition periods. To examine this possibility we used Question 16 from the principal's questionnaire, "Has the racial (or ethnic) composition of your student population changed since the 1970-71 school year?" (Yes, No). Among the fifth grade principals, 49 per cent said "Yes"; at the tenth grade level, 40 per cent said "Yes."

A second possibility involves community-level variables. If there is a considerable amount of uproar about desegregation in the local community, there might be effects on tensions, morale, and other variables that would produce spurious correlations with modes of desegregation. Our measure of this variable is an index formed from four items in the community leader schedule (the interviews with samples of community leaders are described elsewhere in this report). The index combines answers to four questions on resistance to desegregation by districts in general, local political leaders, white business leaders, and organized whites. High scores on the index indicate high levels of community resistance. We dichotomized the index at the arbitrary value of 28 per cent, which gives 62 per cent high scores for fifth grades and 58 per cent high scores for tenth grades.

Controlling for these three outside variables--urbanism, racial change, and community resistance--we reran the original relationships within categories of the control variable, obtaining partial Q's for the

original association. The four partial Q's (two grades by two measures) were then averaged. Because of the possibility that small cell sizes in the tabulations could affect the results, the data were also calculated ignoring cells in which the "expected" value for the original relationship was less than five cases.

Table 5.15 shows whether these controls affect the association between tension and busing whites. We find that the three control variables have no effect on the relationship. From this, we draw these conclusions:

Busing of white students is, if anything, associated with lower tension levels in the sample schools.

None of the other mode of desegregation variables appear to be associated in any way with a school's level of tension.

TABLE 5.15

AVERAGE ASSOCIATION BETWEEN BUSING WHITES AND TENSION
MEASURES CONTROLLING FOR URBANISM, RACIAL CHANGE,
AND COMMUNITY RESISTANCE

Control	Average of the Coefficients	
	All Cells	Small Cells Excluded
None (See Table 5.14)	+.28	--
Urbanism	+.25	+.25
Urbanism and racial change .	+.26	+.26
Urbanism and community resistance	+.25	+.25

2) Student Morale

Table 5.16 gives the zero-order associations between busing variables and the two measures of student morale--happiness and liking school. Only one relationship meets the consistency test. There is an average correlation of $-.23$ between the per cent black in the school and the morale of white students. Possibly, minority status in a school population lowers morale, but this more abstract formulation implies a reverse correlation among black students. Table 5.16 provides little support for the inference. The average coefficient is only $+.11$ and the two happiness correlations are essentially zero.

TABLE 5.16

ZERO-ORDER ASSOCIATIONS BETWEEN BUSING VARIABLES AND MORALE ITEMS

Morale Item	Busing Variable				Per Cent Black
	Busing Per Se		Nearest School		
	Whites	Blacks	Whites	Blacks	
<u>Black Students:</u>					
Happy					
Fifth grade	+ .11	- .10	- .07	+ .10	+ .01
Tenth grade	- .13	- .06	- .26	+ .01	- .06
Like School					
Fifth grade	- .01	- .03	+ .09	+ .08	+ .18
Tenth grade	- .03	- .03	- .37	+ .14	+ .32
Average . . .	- .02	- .06	- .15	+ .08	+ .11
<u>White Students:</u>					
Happy					
Fifth grade	- .05	+ .13	+ .18	- .21	- .19
Tenth grade	- .18	+ .14	+ .07	- .06	- .27
Like School					
Fifth grade	- .23	- .08	+ .05	- .09	- .07
Tenth grade	- .01	- .32	+ .02	+ .16	- .40
Average . . .	- .12	- .03	+ .08	- .05	[- .23]

Controls for urbanism, racial change, and community resistance do not change the situation much (Table 5.17). How and why the relationship obtains is beyond the assignment of this analysis, but the finding does merit one comment: if integration does have a negative effect on the morale of white students, the mode of integration--busing, failure to attend a neighborhood school--is not the source. Rather, it is some aspect of the integration process within the school doors. We can draw the following conclusions:

Among white students (but not blacks) morale is negatively associated with the per cent black in the school.

Busing per se and attending neighborhood schools have no relationship with morale in either racial group.

TABLE 5.17

AVERAGE ASSOCIATION BETWEEN PER CENT BLACK AND MORALE MEASURES FOR WHITE STUDENTS, CONTROLLING FOR URBANISM, RACIAL CHANGE, AND COMMUNITY RESISTANCE

Control	Average of the Coefficients	
	All Cells	Small Cells Excluded
None (See Table 5.16)	-.23	--
Urbanism	-.25	-.25
Urbanism and racial change . . .	-.25	-.25
Urbanism and community resistance	-.21	-.21

3) Race Relations

Table 5.18 reports the zero-order correlations for the busing variables and the two measures of race relations--cross-race associates, and favorability toward integrated schools. The results in Table 5.18 are more complex than for the previous variables, so we shall proceed item by item.

- a) There is no consistent association between white busing and race relations items in either racial group.
- b) Busing of black students is associated with poor race relations scores among white students, with an average Q of $-.30$.
- c) Busing of black students shows a negative trend among black students too. The average Q, $-.19$, is below our criterion level, but we will relax our rule because of the similar finding among whites.
- d) Attending a neighborhood school (low scores on "nearest school") shows negative associations with good race relations in 16 of 18 coefficients across race, grade, and item, but the magnitudes are so small that they do not meet our decision rule.
- e) The per cent black shows a variety of inconsistent associations that have no simple interpretation.

TABLE 5.18

ZERO-ORDER ASSOCIATIONS BETWEEN BUSING VARIABLES AND RACE RELATIONS ITEMS

Race Relations Item ^a	Busing Variable				Per Cent Black
	Busing Per Se		Nearest School		
	Whites	Blacks	Whites	Blacks	
<u>Black Students:</u>					
Attitude					
Fifth grade .	+.28	-.33	-.19	-.12	9 +.05
Tenth grade .	-.01	-.15	-.21	-.01	+.13
Associates					
Fifth grade .	-.06	-.13	-.07	-.22	-.33
Tenth grade .	-.08	-.14	-.11	-.34	-.48
Average	+.03	[-.19]	-.14	-.17	-.16
<u>White Students:</u>					
Attitude					
Fifth grade .	-.15	-.16	-.06	-.04	-.08
Tenth grade .	+.06	-.37	-.06	-.37	-.53
Associates					
Fifth grade .	+.05	-.36	-.25	+.03	+.38
Tenth grade .	-.29	-.33	-.21	-.32	-.04
Average	-.08	[-.30]	-.14	-.18	-.07

^aItems are scored so that having cross-race associates and favoring integrated schools are positive.

Applying the rule of consistency and magnitude, only one finding emerges: black busing is associated with poor race relations among whites, and probably among blacks.

Before discussing the finding, it is necessary to consider urbanism, since it is associated with both black busing and with race relations. Table 5.7 showed Q's between urbanism and black busing of $-.71$ at the tenth grade and $-.72$ at the fifth grade level, the highest correlations in that table. Table 5.19 shows associations between urbanism and race relations.⁹

TABLE 5.19
ZERO-ORDER ASSOCIATIONS BETWEEN URBANISM AND
RACE RELATIONS ITEMS

Students	Attitude		Associates		Average
	Fifth Grade	Tenth Grade	Fifth Grade	Tenth Grade	
Black .	+.21	+.61	+.08	+.15	+.26
White .	+.19	+.77	+.29	+.73	+.50

Since rural schools have less favorable race relations and much higher levels of black busing, it may be that the correlations between black busing and poor race relations variables among whites will disappear when urbanism is controlled. Table 5.20 presents the results.

Controlling for urbanism does have an impact on the relationship, reducing the average coefficient from $-.30$ to $-.13$ among whites and $-.19$ to $-.08$ among blacks. Neither racial change nor community resistance variables seem to do much, nor does a new control variable, SES. The SES indices, defined elsewhere in the report, combine items such as air conditioner in the home, home ownership, and newspaper subscriptions, to assess the socioeconomic status of the students. We have not discussed

⁹Tabulations not reported here show no strong or consistent associations between urbanism and the morale or tension items.

the item before because tabulations not presented here showed that it had nothing to do with the findings presented up to this point.

TABLE 5.20

AVERAGE ASSOCIATIONS BETWEEN BLACK BUSING AND RACE RELATIONS
ITEMS AMONG BLACKS AND WHITES, CONTROLLING FOR URBANISM,
RACIAL CHANGE, AND COMMUNITY RESISTANCE

Control	Average of Coefficients	
	All Cells	Small Cells Excluded
<u>Whites:</u>		
None (See Table 5.18) . .	-.30	--
Urbanism	-.13	-.13
Urbanism and racial change	-.15	-.17
Urbanism and community resistance	-.15	-.16
Urbanism and SES of whites	-.09	-.10
Urbanism and SES of blacks	-.09	-.10
<u>Blacks:</u>		
None (See Table 5.18) .	-.19	--
Urbanism	-.08	-.08
Urbanism and racial change	-.11	-.20
Urbanism and community resistance	-.11	-.23
Urbanism and SES of whites	-.08	-.16
Urbanism and SES of blacks	-.10	-.10

In summary, urbanism almost explains the correlation. Most of the relationship between black busing and bad race relations among whites and blacks is due to urbanism. We add to our list of conclusions:

Schools where more black students are bused tend to have less favorable race relations scores among white and probably black students, but the bulk of this association can be explained by urbanism.

White busing, attending a neighborhood school, and the per cent black have no clear-cut associations with race relations.

4) Academic Achievement

Table 5.21 presents the basic data on achievement. Three relationships meet the criteria:

There is a negative association between per cent black and black achievement. The greater the per cent of blacks in the school, the lower the test scores of black students (a similar trend among whites does not meet the magnitude criterion).

White busing has a negative association with achievement. In schools where more whites travel by bus, the scores of whites (but not blacks) are lower.

There is a negative association between nearest school blacks and white achievement. The test scores of white students tend to be lower when they attend schools "in black neighborhoods."

TABLE 5.21

ZERO-ORDER ASSOCIATIONS BETWEEN BUSING VARIABLES AND ACADEMIC ACHIEVEMENT TESTS

Achievement	Busing Variable				Per Cent Black
	Busing Per Se		Nearest School		
	Whites	Blacks	Whites	Blacks	
<u>Black Students:</u>					
Reading					
Fifth grade	-.16	-.37	-.14	-.36	-.15
Tenth grade	-.09	.03	.02	.04	-.29
Math					
Fifth grade	.00	.03	-.14	.03	-.01
Tenth grade	.11	-.30	-.08	.15	-.40
Average	-.04	-.15	-.09	-.04	[-.21]
<u>White Students:</u>					
Reading					
Fifth grade	-.33	.03	-.25	-.38	-.26
Tenth grade	-.38	-.25	-.08	-.18	-.14
Math					
Fifth grade	-.08	.04	.05	-.09	-.14
Tenth grade	-.32	-.13	.16	-.25	-.05
Average	[-.28]	-.08	-.03	[-.23]	-.15

Before discussing or interpreting these findings, let us introduce the standard package of controls. These figures are given in Table 5.22.

TABLE 5.22
AVERAGE ASSOCIATIONS BETWEEN BUSING ITEMS AND ACHIEVEMENT
UNDER VARIOUS CONTROLS

Control	Association		
	Per Cent Black and Black Achievement	White Busing and White Achievement	Nearest School Black and White Achievement
None (See Table 5.21)	-.21	-.28	-.23
Urbanism . . .	-.17	-.20	-.13
Urbanism and racial change	-.12	-.18	-.10
Urbanism and community resistance .	-.20	-.15	-.11
Urbanism and black SES . .	-.06	-.11	-.14
Urbanism and white SES . .	-.06	-.09	-.15
Urbanism and nearest school--black	--	-.13	--
Urbanism and busing--white	--	--	-.13

Table 5.22 is difficult to interpret since it has important policy implications and the interpretation depends upon how one reads differences in coefficients that amount to two or three units in the second decimal. We read it like this:

The association between racial composition and black achievement is pretty well explained by socioeconomic status. When one controls for either black or white SES levels, the average coefficient shifts from -.21 to -.06, an essentially trivial value.

The association between white busing and white achievement is fairly well explained by urbanism and SES. When urbanism is controlled, the relationship drops from $-.28$ to $-.20$, and when both urbanism and SES are controlled, it drops to about $-.10$.

The association between nearest school black and white achievement is lowered from $-.23$ to $-.13$ when urbanism is controlled, but the impact of other controls is unclear.¹⁰

These findings lead to the following conclusions:

Achievement of black students is not directly affected by any of the busing variables.

For white students, attending school in black neighborhoods is associated with lower academic performance, but attending school in one's own neighborhood is not associated with academic performance.

Summary and Conclusions

In this chapter we examined correlations between five aspects of busing--bus transportation per se for whites, bus transportation per se for blacks, attending nearest school for whites, attending nearest school for blacks, and per cent black--and four dependent variables--tension levels in the schools, student morale, race relations, and academic achievement--controlling for urbanism, racial change in the school, community resistance to desegregation, and socioeconomic status. The findings can be summarized as shown in Table 5.23.

¹⁰ The failure of white SES to further lower this partial association, as it did in the other two columns of Table 5.21, makes this finding appear suspect. Narot's finding in Working Paper 4 is that using multiple regression to eliminate the effect of white social status eliminates entirely any negative effects attributable to attending a predominantly black school, leaving a slight positive partial association. When Narot's statistical model (multiple regression with undichotomized variables) is used to replicate the tabulations of Table 5.21, the effect on white achievement of attending a school in a black neighborhood becomes positive for both high school tests, remains negative for one fifth grade test, and is zero for the other, indicating no overall effect. (See Appendix 2 to this paper, p. 125.) It seems likely that the difficulty here is that the association between being in school in a black neighborhood and white social class is strongly negative--the whites in ghetto schools being very poor--and that collapsing social class to a dichotomy weakens its effect as a control variable. As we noted in Chapter 2 of Volume I (p. 68), one should be wary of unreliability in control variables causing their effects to be understated.

TABLE 5.23
SUMMARY OF STATISTICAL FINDINGS

Variable	Busing Per Se		Nearest School		Per Cent Black
	Whites	Blacks	Whites	Blacks	
Low Tensions	+.28	--	--	--	--
<u>Morale:</u>					
Blacks	--	--	--	--	--
Whites	--	--	--	--	-.23
<u>Race Relations:</u>					
Blacks	--	-.19 ^a	--	--	--
Whites	--	-.30 ^b	--	--	--
<u>Academic Achievement:</u>					
Blacks	--	--	--	--	-.21 ^b
Whites	-.28 ^b	--	--	-.13 ^c	--

^aArtifact of urban-rural differences.

^bArtifact of urban-rural and SES differences.

^cControlling for rural-urban differences.

Note: Dashes (--) indicate original relationship too small or inconsistent to warrant further analysis.

We draw the following conclusions from Table 5.23:

1. On the average, busing variables are not strongly related to the dependent variables chosen. Of 35 possible findings, 27 showed no acceptable zero-order correlations, four are spurious effects of urbanism or SES, and the three "survivors" show coefficients ranging from .13 to .28 in magnitude.
2. The two best supported findings in the analysis are these:
 - a) There is a positive correlation between white busing and low tension levels in the schools.
 - b) There is a negative association between white morale and the per cent black in the school.

3. A third relationship meets our criteria, although it is marginal in strength and not fully supported when the same data are analyzed by multiple regression techniques:

There is a negative association between white achievement and attending school in black neighborhoods.

Taken as a whole, we believe these results lead to three more general conclusions, two favorable to integrationists and one favorable to "anti-busers."

First, there is no evidence that busing per se has any negative consequences. On the contrary, the strongest finding in the set is the association between busing white students and benign levels of tension in the schools.

Second, there is no evidence that attending one's own neighborhood school has any effects, positive or negative, on a school's achievement levels or social climate.

Third, there is evidence for two negative consequences of integration for white students: lower morale when they are in schools with greater proportions of black students, and lower academic achievement when they attend schools in black neighborhoods.

In our opinion, this boils down to one false issue and one dilemma. The false issue is busing, neighborhood schools, and similar euphemisms. We are quite persuaded that these data show no psychological or academic advantage to schools within walking distance and no deleterious consequences of transportation long distances by bus. The dilemma revealed in these figures (and in many other studies) is how to balance the academic advantages of integration for blacks (shown here by the white SES effects on black achievement) with the apparent negative effects on white morale and the lowering of white achievement when integration involves schools in black neighborhoods.

We are not about to solve that dilemma; it merits a crash program of intensive effort by many social scientists. We can state emphatically, however, that we will all be better off if we concentrate on the real and terrible problems of desegregation rather than discussing the ridiculous and hypocritical proposition that there is something psychologically or academically edifying in children going to school on foot.

APPENDIX 1

On the Agreement between Coefficients of Association

The analysis in this chapter used cross-tabulation tables and the coefficient of association, Yule's Q, while most of the other working papers in the report use multiple regression techniques. This decision was based on taste and training as were the decisions of the other authors, for there seems to be no authoritative rule for choosing between these two popular styles of analysis, despite years of controversy among methodologists.

The crucial point is whether the research worker will draw different conclusions from different coefficients. If not, the issues dwindle to highly technical matters such as the "power" of the tests. But if different conclusions from different coefficients are possible, the reader should be alerted to this problem.

For fourfold tables (cross-tabulation of two dichotomies), the matter has a clear answer, since the formulas for Q and phi (the product moment correlation coefficient applied to a fourfold table) are rather similar. Edmund Dean Meyers of Dartmouth College, in an unpublished computer simulation, has worked this out with the following main conclusions:

- 1) If both items are cut 50-50 (as we tried here), the two coefficients will be quite similar for low relationships, Q will have a greater magnitude for strong relationships, and at the extreme they will converge as they head toward 1.00 for a perfect relationship.
- 2) If one or both of the items are skewed (e.g., cut 30-70 or 10-90), phi will be depressed in value vis-a-vis Q (at least for one of the signs, positive or negative), because skewed marginals create a ceiling for phi, which often cannot reach 1.000 even when the association is maximal.

Figure A.1 is a copy of a computer graphic presentation developed by Meyers that is well worth study.

E. Meyers 10/27/72

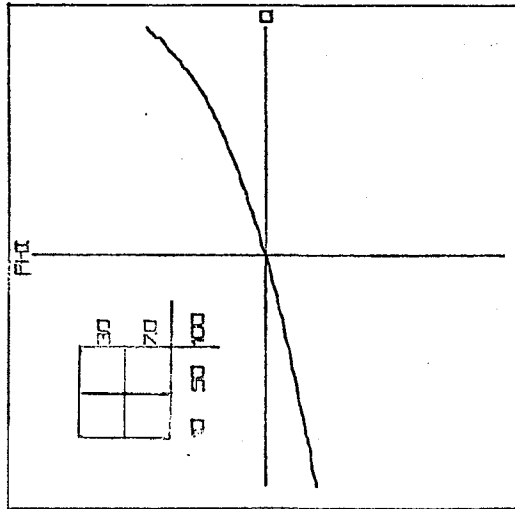
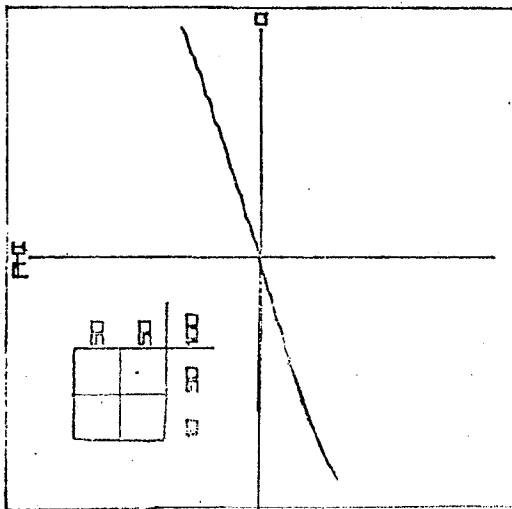
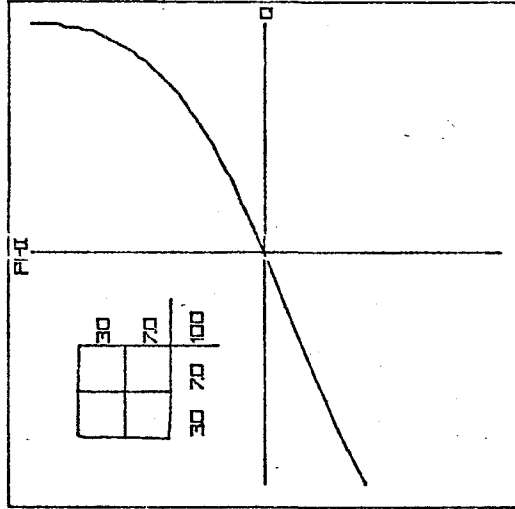
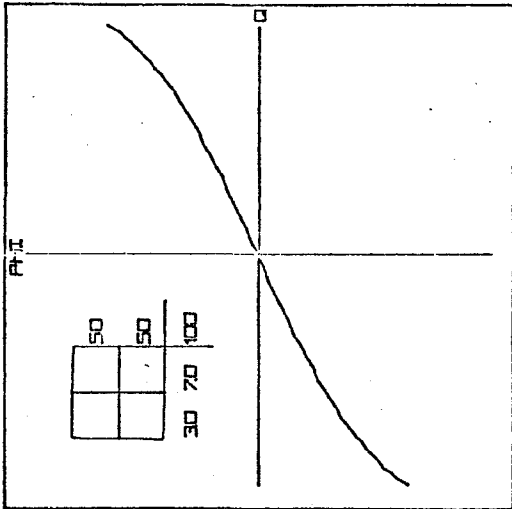
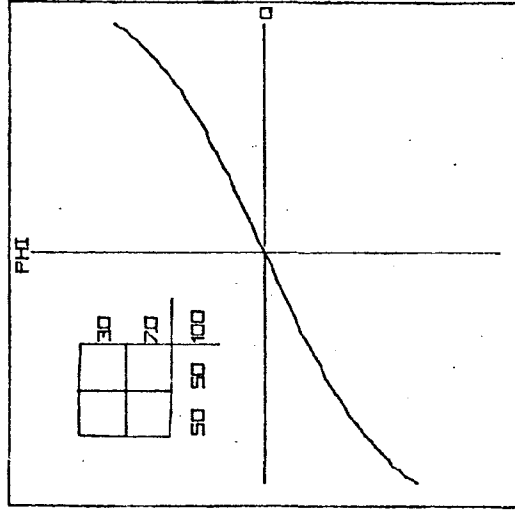
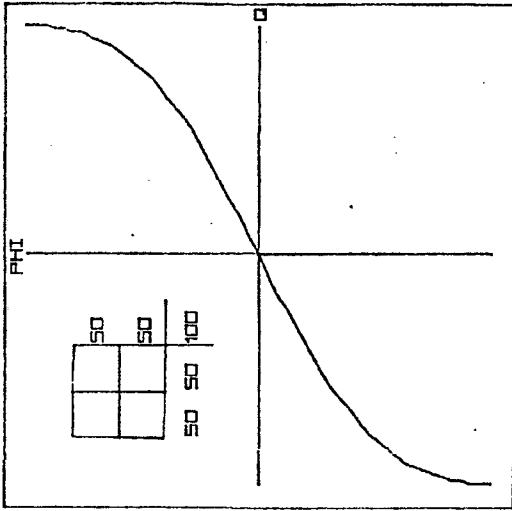


Figure A.1

The main difference when using fourfold tables is that non-trivial Q's will have larger magnitudes. Q's and phi's should never be compared directly. Since regression analysts seldom use fourfold tables, the more interesting question is the agreement between analyzing the data (1) using Q and a fourfold table and (2) using r, a product moment correlation calculated on the raw (ungrouped) data. This is a much more difficult question. Although there are a number of mathematical papers on the topic, the authors must make such strong assumptions about the underlying distributions in attempting to resolve the question that not much can be learned from them. We decided to simply compare Q's and r's for the variables studied in this paper. Specifically, we reran the relationships in Tables 5.14, 5.16, 5.18, and 5.21, and calculated the average r, instead of the average Q. Table A.1 gives the results.

TABLE A.1

AVERAGE Q AND AVERAGE R FOR MAIN RELATIONSHIPS IN THE PAPER

Variable	Average	Busing		Nearest School		Per Cent Black
		Whites	Blacks	Whites	Blacks	
Tensions	Q	+.28	-.02	-.01	+.06	+.07
	R	+.12	+.05	+.03	+.12	-.08
<u>Morale:</u>						
Blacks	Q	-.02	-.06	-.15	+.08	+.11
	R	-.02	-.06	-.08	+.12	+.09
Whites	Q	-.12	-.03	+.08	-.05	-.23
	R	-.06	-.01	+.06	-.06	-.16
<u>Race Relations:</u>						
Blacks	Q	+.03	-.19	-.14	-.17	-.16
	R	-.04	-.07	-.14	-.05	-.15
Whites	Q	-.08	-.30	-.14	-.18	-.07
	R	-.10	-.24	-.20	-.09	+.16
<u>Achievement:</u>						
Blacks	Q	-.04	-.15	-.09	-.04	-.21
	R	-.13	-.13	-.08	-.03	-.14
Whites	Q	-.28	-.08	-.03	-.23	-.15
	R	-.12	-.02	-.09	-.13	-.15

Table A.1 may be analyzed by either approach. We start with a table cross-tabulating the two values (Table A.2). There is a definite,

TABLE A.2

CROSS-TABULATION OF DATA IN TABLE A.1

Value of Q	Value of R													
	-.30 or less	-.25 -.29	-.20 -.24	-.15 -.19	-.10 -.14	-.05 -.09	-.01 -.04	.01 .04	.05 .09	.10 .14	.15 .19	.20 .24	.25 .29	.30 or more
+.30 or more														
+.25 .29										1				
+.20 .24														
+.15 .19									1					
+.10 .14														
+.05 .09						1			1	2				
+.01 .04							1							
-.01-.04					1	1	3	1	1					
-.05-.09					1	3	1				2			
-.10-.14					1	1								
-.15-.19			1	2	1	4								
-.20-.24				1	2									
-.25-.29					1									
-.30 or less			1											

but hardly spectacular agreement between the two coefficients, and only one clear outlier--per cent black and white race relations--where the average Q is -.07 and the average R is +.16. If we go back to the original data, we see the following:

	Attitude		Associates		Average
	Fifth	Tenth	Fifth	Tenth	
Q	-.08	-.53	+.38	-.04	-.07
R	.02	-.07	+.42	+.29	+.16

The discrepancy is coming from two tenth grade coefficients that are just different. Why? All we know is that we reran the fifth and tenth grade coefficients on the computer and got exactly the same values again.

Shifting to the regression approach, we calculated the product moment correlation between the coefficients, obtaining an r of .760 ($r^2 = .5776$). It is our opinion that this amount of agreement between coefficients is about at the level of agreement for different items in a particular attitude scale. If so, we introduce about as much variation into our results by choice of measure of association as we do by choice of seemingly identical items.

But it is possible to take even less optimistic approaches to the data in Table A.1. Solid horizontal cutting points have been drawn in Table A.2. Inspection of the table shows that for the seven Q's we chose to take seriously (including the .19 for busing and black race relations), there would have been ten other relationships of essentially equal magnitude had we chosen to run r 's instead and used cutting points that guaranteed the seven would be chosen (i.e., $\pm .10$). This is troublesome indeed. There is no way to avoid saying that our conclusions about specific variables would have been rather different had we used the regression approach.

An equally troublesome result obtains if we take a closer look at the r of .760. The result follows from the fact that signs of correlations are rather arbitrary. If we reverse the meaning of "high" and "low" on one of the variables in a correlation, we will reverse the sign (+ to - or vice versa) without changing anything else. With this in mind, we can see how much of the r of .760 is coming from sheer agreement on signs and how much from agreement on magnitudes. We simply change all correlations that are minus for both r and Q to plus. This gives us an estimate of how much the two coefficients agree on a set of data where almost all the correlations have the same sign. The new results are $r = .393$, and $r^2 = .154$. The level of agreement on "pure" magnitude leaves a lot to be desired.

These results are frankly surprising and discouraging, especially since we have learned little about the reasons for the discrepancy. One hypothesis does emerge when we try the same procedure on the 30 relationships presented in Table 5.7. There, we get an r of .894 for the two coefficients, and an r of .685 even when the both negative relationships have been reversed to give the data essentially the same signs.

What is the difference between the data in Table 5.7 and those in Table A.1? Inspection of the two tables suggests this: In Table 5.7, there are more strong associations and also more associations that are near zero. Table A.1, in contrast, seems to be characterized by associations that are different from zero but not very strong; that is, by a plethora of low relationships. We infer the following hypothesis:

Where the data contain strong variation in the magnitudes of the associations, Q and r will give much the same results.

Where the data contain great clumps of low relationships, choice of coefficient introduces about as much variation in the final conclusions as choice of items.

Since the busing data are clearly in the latter category, in interpreting the data, the reader must bear in mind the problems outlined here.

APPENDIX 2

EFFECT OF ATTENDING A SCHOOL WHICH IS A "NEIGHBORHOOD SCHOOL" FOR BLACK STUDENTS, ON WHITE ACHIEVEMENT (Standardized Regression Coefficients)

Independent Variable	Grade, Test			
	Fifth Grade		Tenth Grade	
	Reading	Math	Reading	Math
Nearest school for blacks	-.11	-.04	.05	.03
Urbanism of county . .	.13	.04	.03	.06
Educational level of county	.09	-.10	.04	-.12
White socioeconomic status	.58	.46	.57	.54

APPENDIX

QUESTIONNAIRES

NAME OF PUPIL _____

OMB No. 51-S72007
Approval expires December 31, 1972

norc

SURVEY QUESTIONNAIRE

5th GRADE FORM

CONFIDENTIAL

National Opinion Research Center
University of Chicago

Survey 5038

April, 1972

DIRECTIONS

THE RESEARCH WORKER WILL READ EACH QUESTION AND EACH POSSIBLE ANSWER. MARK YOUR ANSWER BY FILLING IN THE CIRCLE NEXT TO THE ANSWER THAT BEST DESCRIBES YOU OR WHAT YOU THINK. MARK ONLY ONE ANSWER FOR EACH QUESTION. IF YOU WISH TO CHANGE AN ANSWER, ERASE YOUR FIRST MARK COMPLETELY. USE ONLY A No. 2 OR SOFTER LEAD PENCIL.

EXAMPLE:

Are you in the fifth grade or in high school?

- ☒ Fifth grade
- ☐ High school

YOU WOULD FILL IN THE FIRST CIRCLE, NEXT TO "FIFTH GRADE" FOR YOUR ANSWER.

1. What is your class number for this survey?

- ① Class number 1
- ② Class number 2
- ③ Class number 3
- ④ Class number 4
- ⑤ Class number 5

(28)

2. Are you a boy or a girl?

- ① Boy
- ② Girl

(29)

3. How old are you now?

- ① 10 or under
- ② 11
- ③ 12
- ④ 13 or over

(30)

4. Which of the following best describes you?

- ① Black, Negro
- ② White
- ③ American Indian
- ④ Chinese or Japanese (Oriental)
- ⑤ I am not any of these;

(31)

I am 

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5. Are you Mexican-American, Cuban, or Puerto Rican?

- ① No, none of these
- ② Yes, Mexican-American
- ③ Yes, Cuban
- ④ Yes, Puerto Rican

(32)

6. Did you go to kindergarten?

- ① Yes
- ② No

(33)

7. Do you own a bicycle?

- ① Yes
- ② No

(34)

8. How many brothers and sisters do you have?

- ① One
- ② Two
- ③ Three
- ④ Four
- ⑤ Five
- ⑥ Six
- ⑦ Seven
- ⑧ Eight or more
- ⑨ None

(35)

9. Do you think you are better than most students at doing school work, about the same, or not as good as most students?

- ① Better
- ② About the same
- ③ Not as good

(36)

10. Does the principal of this school know you by name?

- ① Yes
- ② No

(37)

11. Is there any adult at this school you could talk to if you were upset or in trouble?

- ① Yes
- ② No

(38)

12. Have you talked with a school counselor this school year?

- ① I talked with counselor
- ② I did not talk with counselor

(39)

13. Have you ever talked to your teacher about something interesting you are doing that was not school work?

- ① Yes
- ② No

(40)

14. Do you think you might want to be a teacher when you grow up?

- ① Yes
- ② No

(41)

15. Has your mother or father visited school during this school year?

- ① Yes
- ② No (42)

16. Are you getting more help or less help from your parents with your school work now than in the beginning of this school year?

- ① More help
- ② Less help
- ③ Same amount of help (43)
- ④ My parents never have helped me with school work

17. Do you think your teacher likes you?

- ① Yes
- ② No (44)

18. If you could choose the kind of school you would go to, would you pick one with --

- ① All white students
- ② All black students
- ③ A mixture of different kinds of students (45)

19. In the 5th grade, have you studied anything about black people?

- ① Yes
- ② No (46)

20. Are any of the teachers in this school unfair to white students?

- ① Yes
- ② No
- ③ No white students in this school (47)

21. Are your parents satisfied with the grades you get in school?

- ① Yes
- ② No (48)

22. Do you live with both of your parents?

- ① Yes
- ② No (49)

23. What was the earliest grade you went to school with both black and white students?

- ① Kindergarten
- ② First
- ③ Second
- ④ Third
- ⑤ Fourth
- ⑥ Fifth
- ⑦ Never did (50)

24. How do your parents feel about you going to school with both black and white students?

- ① They like it
- ② They don't like it
- ③ It doesn't matter to them (51)

25. How do you think your teacher feels about black and white students going to the same school together?

- ① My teacher likes it
- ② My teacher doesn't like it
- ③ It doesn't matter to my teacher (52)

26. How about the principal of your school -- how do you think your principal feels about black and white students going to the same school together?

- ① The principal likes it
- ② The principal doesn't like it
- ③ It doesn't matter to the principal (53)

27. Think of your three best friends in the 5th grade in this school. Are they all the same race as you or is one or more of a different race?

- ① Yes, all same race as me
- ② No, one or more is of a different race (54)

28. Would you like to have more friends who are of a different race?

- ① Yes
- ② No (55)

29. Do you think the black students in this school cause a lot of trouble?

- ① Yes
- ② No
- ③ No black students in this school (56)

30. Do you think the white students in this school cause a lot of trouble?

- ① Yes
- ② No
- ③ No white students in this school (57)

31. Are any of the teachers in this school unfair to black students?

- ① Yes
- ② No
- ③ No black students in this school (58)

32. Are you afraid of most grownups of a different race from you?

- ① Yes
- ② No (59)

33. In general, do you think that white people are smarter than black people, that black people are smarter than white people, or do you think that a person's color doesn't have anything to do with how smart he is?

- ① White people are smarter
- ② Black people are smarter (60)
- ③ Color doesn't have anything to do with smartness

34. Did anyone at home read to you when you were little -- before you started school?

- ① Yes
- ② No (61)

35. Does your family own their home?

- ① Yes
- ② No (62)

36. Does your family buy groceries with food stamps or get surplus food?

- ① Yes
- ② No (63)

37. In the past week, did you think any of your school work or homework was fun?

- ① Yes
- ② No (64)

38. Do you usually hate school?

- ① I usually hate school
- ② I usually don't hate school (65)

39. At school, are you often blamed for things that just aren't your fault?

- ① Yes
- ② No (66)

40. Do you like your teacher?

- ① Yes
- ② No (67)

41. Is reading too hard for you now?

- ① Reading is too hard for me
- ② Reading is not too hard for me (68)

42. Is arithmetic too hard for you now?

- ① Yes
- ② No (69)

43. Does your teacher or someone else at school give you special help with your reading?

- ① Yes
- ② No (70)

44. Do you think most of the rules in your classroom are fair?

- ① Yes
- ② No (71)

45. Is there a public elementary school closer to your house than this one?

- ① Yes
- ② No (72)

46. Think about the kids your age who live near you. Do many of them go to a different school, or do they almost all go to this school?

- ① Many go to another school
- ② Almost all of them go to this school (73)

47. Are you satisfied with yourself?

- ① Yes
② No (74)

48. When a teacher says that she is going to give the class a test, do you become afraid that you will do poor work?

- ① Yes
② No (75)

49. Are some kids just naturally lucky?

- ① Yes
② No (76)

50. Do you think you can do things as well as most students can?

- ① Yes
② No (77)

51. Do you feel like you don't really belong in this school?

- ① Yes
② No (78)

52. Do you think most people are better off than you are?

- ① Yes
② No (79)

53. When you take a test, do you get so nervous you can't think straight?

- ① Yes
② No (80)

54. Do you think good luck is just as important for success as hard work?

- ① Yes
② No (81)

55. Do you get really angry when teachers try to make you do things you don't want to do?

- ① Yes
② No (82)

56. Have you been in any fights at school this school year?

- ① I have been in fights
② I have not been in fights (83)

57. Does your family get a newspaper regularly?

- ① Yes
② No (84)

58. Do you think it doesn't pay to try hard because things don't turn out right anyway?

- ① Yes
② No (85)

59. When you make plans, are you almost sure you can make them work?

- ① Yes
② No (86)

60. Does your teacher spend a lot of time getting the kids to behave?

- ① Yes
② No (87)

61. Would you say you are very happy, pretty happy, or not too happy these days?

- ① Very happy
② Pretty happy
③ Not too happy (88)

62. Do you think you will go to college?

- ① Yes
② No (89)

63. Were you a student at this school one year ago?

- ① Yes
② No (90)

64. How do you usually get to school?

- ① Walk or bicycle
② School bus
③ Car
④ Some other way (91)

65. What grade are you in now?

- ① Third grade
② Fourth grade
③ Fifth grade
④ Sixth grade
⑤ Seventh grade
⑥ Eighth grade (92)

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SURVEY TEST OF EDUCATIONAL ACHIEVEMENT

5th GRADE FORM

PART I**READING**

(100 - 109)

EXAMPLES

1 A B C D

2 A B C D

3 A B C D

4 A B C D

5 A B C D

6 A B C D

7 A B C D

8 A B C D

9 A B C D

10 A B C D

11 A B C D

12 A B C D

PART II**MECHANICS OF WRITING**

(110 - 124)

EXAMPLES

13 A B C D

14 A B C D

15 A B C D

16 A B C D

17 A B C D

18 A B C D

19 A B C D

20 A B C D

21 A B C D

22 A B C D

23 A B C D

24 A B C D

25 A B C D

26 A B C D

27 A B C D

28 A B C D

29 A B C D

30 A B C D

PART III**MATHEMATICS COMPUTATION**

(125 - 136)

EXAMPLE

31 A B C D

32 A B C D

33 A B C D

34 A B C D

35 A B C D

36 A B C D

37 A B C D

38 A B C D

39 A B C D

40 A B C D

41 A B C D

42 A B C D

43 A B C D

PART IV**MATHEMATICS - BASIC CONCEPTS**

(137 - 146)

EXAMPLE

44 A B C D

45 A B C D

46 A B C D

47 A B C D

48 A B C D

49 A B C D

50 A B C D

51 A B C D

52 A B C D

53 A B C D

54 A B C D

PART V**SCIENCE**

(147 - 156)

EXAMPLE

55 A B C D

56 A B C D

57 A B C D

58 A B C D

59 A B C D

60 A B C D

61 A B C D

62 A B C D

63 A B C D

64 A B C D

65 A B C D

NAME OF PUPIL _____

OMB No. 51-S72007
Approval expires December 31, 1972

norc

SURVEY QUESTIONNAIRE

10th GRADE FORM

CONFIDENTIAL

National Opinion Research Center
University of Chicago

Survey 5038

April, 1972

Dear Student:

Your answers to the questions in this booklet will help us learn how to improve schools. We are talking with school administrators, teachers, students, and people from the community in many places about this very important subject. All answers will be treated confidentially.

We hope you enjoy thinking about these questions.

Thank you for your help.



Robert L. Crain
Study Director

DIRECTIONS

READ EACH QUESTION CAREFULLY. MARK YOUR ANSWER BY FILLING IN THE CIRCLE NEXT TO THE ANSWER THAT BEST DESCRIBES YOU OR WHAT YOU THINK. MARK ONLY ONE ANSWER FOR EACH QUESTION. IF YOU WISH TO CHANGE AN ANSWER, ERASE YOUR FIRST MARK COMPLETELY. USE ONLY A No. 2, OR SOFTER, LEAD PENCIL.

EXAMPLE:

Are you in the fifth grade or in high school?

- ☐ Fifth grade
☒ High school

YOU WOULD FILL IN THE CIRCLE NEXT TO "HIGH SCHOOL" FOR YOUR ANSWER.

1. What is your class number for this survey?

- ① Class 1
② Class 2
③ Class 3
④ Class 4
⑤ Class 5

(28)

2. Are you a male or a female?

- ① Male
② Female

(29)

3. How old are you?

- ① 14 or under
② 15
③ 16
④ 17
⑤ 18 or over

(30)

4. Which of the following best describes you?

- ① Black, Negro
② White
③ American Indian
④ Chinese, Japanese (Oriental)
⑤ I am not any of these;

(31)

I am →

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5. Are you Mexican-American, Cuban, or Puerto Rican?

- ① No, none of these
② Yes, Mexican-American
③ Yes, Cuban
④ Yes, Puerto Rican

(32)

6. How much education does your mother have? (If you don't know, it's all right to guess.)
 ① Did not go to high school
 ② Went to high school but didn't graduate
 ③ Graduated from high school
 ④ Attended college (33)
7. Do you live with both of your parents?
 ① Yes
 ② No (34)
8. How many brothers and sisters do you have?
 ① One
 ② Two
 ③ Three
 ④ Four
 ⑤ Five
 ⑥ Six
 ⑦ Seven
 ⑧ Eight or more
 ⑨ None (35)
9. Does your family get a newspaper regularly?
 ① Yes
 ② No (36)
10. Does your family own their home?
 ① Yes
 ② No (37)
11. Does your home have an air conditioner?
 ① Yes
 ② No (38)
12. Are you a member of any school clubs or sports teams?
 ① Yes
 ② No (39)
13. Which one of the following best describes the program or curriculum you are enrolled in?
 ① Advanced or special college preparatory
 ② College preparatory
 ③ Business
 ④ Vocational
 ⑤ Work-study
 ⑥ General
 ⑦ Other
 ⑧ Don't know (40)
14. Did you enter that program by your own choice, were you advised to enter it by teachers or counselors, or were you assigned to it?
 ① My own choice
 ② Advised by counselors or teachers
 ③ Assigned
 ④ Don't know (41)
15. During this school year, have you ever talked with a counselor?
 ① Yes
 ② No
 ③ Don't have a counselor (42)
16. Think about most of the work you have to do in school. Is it too hard, too easy, or just about right?
 ① Too hard
 ② Too easy
 ③ Just about right (43)
17. How do your parents feel about the grades you get in school?
 ① Very satisfied
 ② Somewhat satisfied
 ③ Somewhat dissatisfied
 ④ Very dissatisfied
 ⑤ I don't know (44)
18. Forget for a moment how teachers grade your school work. How do you rate yourself in school ability compared with those in your class at school?
 ① I am one of the best
 ② I am above average
 ③ I am average
 ④ I am below average
 ⑤ I am one of the poorest (45)
19. Do you think you have the ability to complete college?
 ① Definitely yes
 ② Probably yes
 ③ Probably no
 ④ Definitely no
 ⑤ Not sure either way (46)
20. How much time do you usually spend doing homework after school?
 ① None, or almost none
 ② Less than ½ hour a day
 ③ About ½ hour a day
 ④ About 1 hour a day
 ⑤ About 2 hours a day or more (47)
21. In the past week, did you do any school work or homework that was interesting?
 ① Yes
 ② No (48)
22. Have either of your parents come to school this year for PTA, parents' days, or for parent conferences?
 ① Yes
 ② No (49)

23. When a teacher says that she is going to give the class a test, do you become afraid that you will do poor work?
 ① Yes
 ② No (50)
24. At school, are you often blamed for things that just aren't your fault?
 ① Yes
 ② No (51)
25. Was the elementary school you went to for the longest time --
 ① All white
 ② Mostly white
 ③ Mostly black
 ④ All black
 ⑤ Other (52)
26. Was the junior high school you went to for the longest time --
 ① All white
 ② Mostly white
 ③ Mostly black
 ④ All black
 ⑤ Other
 ⑥ Didn't go to junior high (53)
27. What about the first time you went to school with black and white students, either in elementary or junior high school; were you assigned to that school, or did you or your parents select it?
 ① I didn't go to elementary or junior high with black and white students
 ② I was assigned to that school
 ③ My parents or I selected that school
 ④ I don't know (54)
28. When you first started going to school with both black and white students, how did your parents feel about it?
 ① They liked it
 ② They didn't like it
 ③ It didn't matter to them
 ④ They were angry about it
 ⑤ Never went to a school with black and white students (55)
29. How do your parents feel now about your going to school with both black and white students? If you don't go to school with both black and white students, answer for how your parents feel about the idea.
 ① They like it
 ② They don't like it
 ③ It doesn't matter to them (56)

30. How about most of your teachers--how do you think they feel about blacks and whites going to the same school together?
 ① They like it
 ② They don't like it
 ③ It doesn't matter to them
 ④ Don't know (57)
31. How do you think your principal feels about blacks and whites going to the same school together?
 ① The principal likes it
 ② The principal doesn't like it
 ③ It doesn't matter to the principal
 ④ Don't know (58)
32. What about the student leaders and popular students at your school? How do they feel about black and white students going to the same school together?
 ① Most of them like it
 ② Most of them don't like it
 ③ Some like it, some don't
 ④ Don't know (59)
- Here is a list of things that have happened in some schools. Please indicate whether or not each of these has happened at your school this school year.
- (60 - 65)
- Yes No
33. ① ② Groups of black students attacking white students.
34. ① ② Groups of white students attacking black students.
35. ① ② White students complaining that favoritism is being shown to black students.
36. ① ② Black students complaining about white racism -- favoritism to white students.
37. ① ② Tensions have made it hard for everyone.
38. ① ② The school pretends there are no problems.
39. Think for a moment about the three students you talk with most often at this school. Are they the same race as you?
 ① Yes, all same race as me.
 ② No, one or more is from another race (66)
40. Have you ever called a student of a different race on the phone?
 ① Yes
 ② No (67)

41. This school year, have you helped a student from another race with school work?
 ① Yes
 ② No (68)

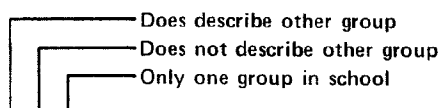
42. This school year, have you asked a student from another race to help you with your homework?
 ① Yes
 ② No (69)

43. If you could choose the kind of school you would go to, would you pick one with:
 ① All white students
 ② All black students
 ③ A mixture of different kinds of students
 ④ Other (70)

44. Do you think your friends would think badly of you if you went someplace after school with a student of a different race?
 ① Yes
 ② No (71)

45. Would you like to have more friends who are of a different race?
 ① Yes
 ② No (72)

Below is a list of words. Think about most of the students of the other racial group in this school (not your own group) and mark whether or not each of the words describe students of the other race.



46. ① ② ③ Friendly (73)

47. ① ② ③ Keep to themselves (74)

48. ① ② ③ Dumb (75)

49. ① ② ③ Ambitious (76)

50. Think about the students of a different race from you. Do you think they get special advantages around here?
 ① Yes
 ② No
 ③ No students of a different race here (77)

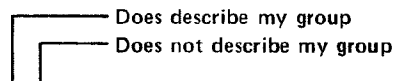
51. Are any of the teachers in this school unfair to black students?
 ① Yes
 ② No
 ③ No black students (78)

52. If you have a bi-racial student committee in your school, how effective has the committee been in solving problems that came up because different races are going to the same school?
 ① No such committee
 ② Effective; it has helped
 ③ Somewhat effective; it has helped a small amount
 ④ It hasn't really accomplished anything
 ⑤ It has done as much harm as it has done good (79)

53. How uncomfortable do you feel around students of a different race?
 ① Generally very uncomfortable
 ② Generally somewhat uncomfortable
 ③ Occasionally somewhat uncomfortable
 ④ Not at all uncomfortable (80)

54. How often do you have class discussions about intergroup relations?
 ① About once a week or more often
 ② About once a month
 ③ Every few months
 ④ No such discussions so far (81)

Below is a list of words. Think about most of the students in this school in the same racial group as you are and mark whether or not each of the words describes students in your own group.



55. ① ② Friendly (82)

56. ① ② Keep to themselves (83)

57. ① ② Dumb (84)

58. ① ② Ambitious (85)

59. In general, do you think that white people are smarter than black people, that black people are smarter than white people, or do you think that a person's color doesn't have anything to do with how smart he is?
 ① White people are smarter
 ② Black people are smarter
 ③ Color doesn't have anything to do with smartness (86)

60. On the whole, how would you say things are working out with both blacks and whites in the school?
 ① Almost no problems
 ② Some minor problems
 ③ Some serious problems
 ④ Many serious problems
 ⑤ School does not have both black and white students (87)

61. The way things are going between blacks and whites in this school, do you think things will be better or worse next year?

① Better
② Same
③ Worse
④ School does not have both black and white students (88)

62. Are any of the teachers in this school unfair to white students?

① Yes
② No
③ No white students (89)

Think of the one adult you like best in this school. Now answer three questions about this person.

63. First, are you thinking of a man or woman?

① Man
② Woman (90)

64. Second, what job does the adult you like best have?

① A regular teacher
② An assistant to a teacher
③ A counselor
④ The principal
⑤ Assistant principal
⑥ A guard or policeman
⑦ Some other job (91)

65. Third, is your favorite adult white or black?

① White
② Black
③ Other (92)

66. Have you discussed women's liberation in any of your classes this school year?

① Yes
② No (93)

67. Have you discussed the war between India and Pakistan in any of your classes this school year?

① Yes
② No (94)

68. Have you ever talked to any of your teachers or other adults here at school about things you are doing outside of school -- your job, a hobby, or something you are really interested in?

① Yes
② No (95)

69. Has any adult here at school ever told you, personally, not to quit high school?

① Yes
② No (96)

70. Has any adult here at school ever told you, personally, that you should go to college?

① Yes
② No (97)

Here is a list of people. In each case, mark whether the person was white or black. If you don't know, mark "Don't know."

White
Black
Don't know

71. ① ② ③ John Wilkes Booth (98)

72. ① ② ③ Harriet Tubman (99)

73. ① ② ③ Booker T. Washington (100)

74. ① ② ③ F. Scott Fitzgerald (101)

75. ① ② ③ Nat Turner (102)

76. Which one of the following was a scientist?

① Booker T. Washington
② George Washington Carver
③ Paul Lawrence Dunbar (103)

77. Ralph Bunche was --

① A civil rights leader
② A U. S. Congressman
③ A United Nations official (104)

78. Do you think most of the rules in this school are fair?

① Yes
② No (105)

79. Do you think you might want to be a teacher someday?

① Yes
② No (106)

80. Is there any adult at this school you could talk to if you were upset or in trouble?

① Yes
② No (107)

81. Have you been in any fights at school this school year?

① Yes
② No (108)

82. In the past year, were you ever sent to the office because someone thought you were breaking some school rule?

① Yes, only once
② Yes, two or more times
③ No (109)

83. During this school year, did you ever stay away from school just because you didn't want to come?
- ① Never
 - ② Yes, for 1 or 2 days
 - ③ Yes, for 3 to 6 days
 - ④ Yes, for 7 to 15 days
 - ⑤ Yes, for 16 or more days
- (110)

In general, do you tend to agree or disagree with each of the following?

(111 - 124)

Agree
Disagree

84. ① ② A lot of people who are smart at books have good common sense, too.
85. ① ② The nation which is in the right nearly always wins in a war.
86. ① ② Most people can be trusted.
87. ① ② When bad things are going to happen, they just are going to happen no matter what you try to do to stop them.
88. ① ② When taking a test, I get so nervous I can't think straight.
89. ① ② On the whole, I am satisfied with myself.
90. ① ② Good luck is just as important for success as hard work is.
91. ① ② I feel I do not have much to be proud of.
92. ① ② Some kids are just naturally lucky.
93. ① ② I feel like I don't really belong in this school.
94. ① ② When I make plans, I am almost sure I can make them work.
95. ① ② Most people are better off than I am.
96. ① ② Most of the time it doesn't pay to try hard because things never turn out right anyway.
97. ① ② A lot of what they teach you in school is not worth learning.
98. Do you get really angry when teachers try to make you do things you don't want to do?
- ① Yes
 - ② No
- (125)
99. Everything considered, are you very happy, pretty happy, or not too happy these days?
- ① Very happy
 - ② Pretty happy
 - ③ Not too happy
- (126)
100. Do you like the principal of this school?
- ① Yes
 - ② No
- (127)

101. Do you think you will go to college?
- ① Yes
 - ② No
- (128)
102. In the morning, are you usually glad to go to school?
- ① Yes
 - ② No
- (129)
103. When you get punished at school, does it usually seem it's for no good reason at all?
- ① Yes
 - ② No
- (130)
104. Do you usually hate school?
- ① Yes
 - ② No
- (131)
105. Why are you attending this particular school?
- ① I was assigned here
 - ② My parents or I selected this school
- (132)
106. Were you a student at this school one year ago?
- ① Yes
 - ② No
- (133)
107. How do you usually get to school (please mark only one)?
- ① Walk or bicycle
 - ② School bus
 - ③ Car
 - ④ Some other way
- (134)
108. How long does it usually take you to get to school in the morning?
- ① Less than 20 minutes
 - ② 20-29 minutes
 - ③ 30-39 minutes
 - ④ 40-49 minutes
 - ⑤ 50-59 minutes
 - ⑥ 60-69 minutes
 - ⑦ 70 minutes or more
- (135)
109. Is there a public high school closer to your house than this one?
- ① Yes
 - ② No
- (136)
110. What grade or year of school are you in now?
- ① 9th Grade (Freshman)
 - ② 10th Grade (Sophomore or Freshman)
 - ③ 11th Grade (Junior or Sophomore)
 - ④ 12th Grade (Senior)
- (137)

SURVEY TEST OF EDUCATIONAL ACHIEVEMENT

10th GRADE FORM

PART I**READING**

(140 - 149)

EXAMPLES

1 (A) (B) (C) (D)

2 (A) (B) (C) (D)

3 (A) (B) (C) (D)

4 (A) (B) (C) (D)

5 (A) (B) (C) (D)

6 (A) (B) (C) (D)

7 (A) (B) (C) (D)

8 (A) (B) (C) (D)

9 (A) (B) (C) (D)

10 (A) (B) (C) (D)

11 (A) (B) (C) (D)

12 (A) (B) (C) (D)

PART II**MECHANICS OF WRITING**

(150 - 164)

EXAMPLES

13 (A) (B) (C) (D)

14 (A) (B) (C) (D)

15 (A) (B) (C) (D)

16 (A) (B) (C) (D)

17 (A) (B) (C) (D)

18 (A) (B) (C) (D)

19 (A) (B) (C) (D)

20 (A) (B) (C) (D)

21 (A) (B) (C) (D)

22 (A) (B) (C) (D)

23 (A) (B) (C) (D)

24 (A) (B) (C) (D)

25 (A) (B) (C) (D)

26 (A) (B) (C) (D)

27 (A) (B) (C) (D)

28 (A) (B) (C) (D)

29 (A) (B) (C) (D)

30 (A) (B) (C) (D)

PART III**MATHEMATICS COMPUTATION**

(165 - 176)

EXAMPLE

31 (A) (B) (C) (D)

32 (A) (B) (C) (D)

33 (A) (B) (C) (D)

34 (A) (B) (C) (D)

35 (A) (B) (C) (D)

36 (A) (B) (C) (D)

37 (A) (B) (C) (D)

38 (A) (B) (C) (D)

39 (A) (B) (C) (D)

40 (A) (B) (C) (D)

41 (A) (B) (C) (D)

42 (A) (B) (C) (D)

43 (A) (B) (C) (D)

PART IV**MATHEMATICS - BASIC CONCEPTS**

(177 - 186)

EXAMPLE

44 (A) (B) (C) (D)

45 (A) (B) (C) (D)

46 (A) (B) (C) (D)

47 (A) (B) (C) (D)

48 (A) (B) (C) (D)

49 (A) (B) (C) (D)

50 (A) (B) (C) (D)

51 (A) (B) (C) (D)

52 (A) (B) (C) (D)

53 (A) (B) (C) (D)

54 (A) (B) (C) (D)

PART V**SCIENCE**

(187 - 196)

EXAMPLE

55 (A) (B) (C) (D)

56 (A) (B) (C) (D)

57 (A) (B) (C) (D)

58 (A) (B) (C) (D)

59 (A) (B) (C) (D)

60 (A) (B) (C) (D)

61 (A) (B) (C) (D)

62 (A) (B) (C) (D)

63 (A) (B) (C) (D)

64 (A) (B) (C) (D)

65 (A) (B) (C) (D)

CONFIDENTIAL

OMB No. 51-S72007
Approval expires December 31, 1972

TEACHER QUESTIONNAIRE

(28 - 29)

FOR NORC USE				
①	④	⑦	⑩	⑬
②	⑤	⑧	⑪	⑭
③	⑥	⑨	⑫	⑮

(20 - 27)

FOR NCS USE ONLY									
0	0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9

norc

national opinion research center

UNIVERSITY OF CHICAGO

6030 South Ellis Avenue, Chicago, Illinois 60637
684-5600 Area Code 312

JAMES A. DAVIS, *Director*

PAUL B. SHEATSLEY, *Survey Research Service Director*

April, 1972

Dear Teacher:

The Superintendent of Schools in your District and your own school principal have agreed to participate in a large scale evaluation study of the Emergency School Assistance Program. The U. S. Office of Education is trying to learn all it can that will help them at the federal level, and school administrators at the local level, to design and carry out programs which will effectively achieve desegregation goals.

Participants will include 5th and 10th grade students, teachers, principals, and community leaders.

All answers will be treated confidentially and only reported statistically. No one's name will ever be revealed or identified with his or her questionnaire either locally or to the Office of Education in Washington.

Our grateful thanks in advance for your cooperation.

Sincerely,



Robert L. Crain
Project Study Director

RLC:ns

5038

OE Form No. 190 - 3

EASTERN OFFICE: • 817 Broadway • New York, New York 10003 • Telephone: 677-4740 • Area Code 212

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DIRECTIONS

READ EACH QUESTION CAREFULLY. MARK YOUR ANSWER BY FILLING IN THE CIRCLE NEXT TO THE ANSWER THAT BEST DESCRIBES YOU OR WHAT YOU THINK. MARK ONLY ONE ANSWER FOR EACH QUESTION, UNLESS INSTRUCTED OTHERWISE. IF YOU WISH TO CHANGE AN ANSWER, ERASE YOUR FIRST MARK COMPLETELY. USE ONLY A No. 2 (OR SOFTER) PENCIL—NEVER USE INK OR BALLPOINT PEN. DO NOT MAKE ANY STRAY MARKS IN THIS BOOKLET.

FOR NCS USE ONLY

1	①	②	③	④	⑤	⑥	⑦
2A	①	②	③	④	⑤	⑥	⑦
2B	①	②	③	④	⑤	⑥	⑦
3	①	②	③	④	⑤	⑥	⑦
5A	①	②	③	④	⑤	⑥	⑦
5B	①	②	③	④	⑤	⑥	⑦

(30 - 35)

Please fill in a circle for every question. We have provided "doesn't apply" type answer categories for some questions in case you feel that a question doesn't apply in your school.

EXAMPLE:

Do you presently live in --

- ① Canada
- United States
- ③ England
- ④ Mexico

1. Are you currently a

- ① Classroom teacher in any elementary grades (K-8)
- ② High school teacher in academic subject
- ③ Speech therapist or remedial reading teacher
- ④ Physical education teacher
- ⑤ Counselor
- ⑥ Administrator
- ⑦ Other (What?) →

(36)

Print

2. Which age group are you in?

- ① 25 or under
- ② 26-35
- ③ 36-45
- ④ 46-55
- ⑤ 56-65
- ⑥ Over 65

(37)

3. Are you male or female?

- ① Male
- ② Female

(38)

4. What is your race?

- ① Black, Negro
- ② White, Caucasian
- ③ White, Mexican-American
- ④ American Indian
- ⑤ Oriental
- ⑥ Other (What?) →

(39)

Print

5. What is the highest level of education you have completed?

- ① Less than one year of college
- ② 1-3 years of college
- ③ 4 years of college
- ④ More than 4 years of college
- ⑤ Master's degree
- ⑥ Graduate work beyond Master's
- ⑦ Doctor's degree

(40)

6. Everything considered, would you say you are very happy, pretty happy, or not too happy these days?

- ① Very happy
- ② Pretty happy
- ③ Not too happy

(41)

7. On the whole, how would you evaluate the way in which desegregation is working out in your school?

- ① Almost no problems
- ② Some minor problems
- ③ Some serious problems
- ④ Many serious problems
- ⑤ Does not apply

(42)

8. Here is a list of things that have happened in some desegregated schools. Please indicate whether or not each of these things happened at your school.

(43 - 48)

- Yes No Does not apply
- ① ② ③ A greater amount of fighting than before desegregation
 - ① ② ③ Minority groups demanding ethnic studies
 - ① ② ③ All students are learning more
 - ① ② ③ Teachers from different groups are learning to work well together
 - ① ② ③ White students are becoming less prejudiced
 - ① ② ③ New educational programs are improving schools

We are interested in relations between blacks and whites and also between Mexican-Americans and Anglo-Americans in the schools. Please answer these questions for the appropriate groups in your school.

9. How would you describe the contact between minority (black or Mexican-American)-and majority (white, Anglo)-group pupils in your school?

- ① Very tense relationship
- ② Formal relationships are satisfactory, but no intergroup friendships
- ③ A few intergroup friendships
- ④ Many intergroup friendships
- ⑤ Does not apply

(49)

10. Some educators talk about a "tipping point." They say that if the number of minority-group students in a school goes over a certain "tipping" percentage, it becomes almost impossible to maintain school quality, and white students will withdraw from the school. In your opinion, what percentage of minority students is the "tipping point"?

(50 - 51)

- ① 10%
- ② 20%
- ③ 30%
- ④ 40%
- ⑤ 50%
- ⑥ 60%
- ⑦ 70%
- ⑧ 80%
- ⑨ 90%
- ⑩ No such point

11. Some people say that black students would really be better off in all-black schools. Others say that black students are better off in racially mixed schools. What do you think?
- ① Most black students are better off in all-black schools
 - ② Most black students are better off in mixed schools (52)
12. What about white students—do you think that white students are better off in all-white schools, or are they better off in racially mixed schools?
- ① Most white students are better off in all-white schools
 - ② Most white students are better off in mixed schools (53)
13. During this school year, have you taken any in-service training, college courses, workshops, or other teacher education dealing with intergroup relations or instruction of disadvantaged students?
- ① I haven't taken any training
 - ② Yes, intergroup relations
 - ③ Yes, instruction of disadvantaged
 - ④ Yes, both intergroup relations and instruction of disadvantaged
 - ⑤ Took training, but not on those topics (54)
14. Which one of the following best describes the amount of time you spent at those teacher-education sessions and preparing for them?
- ① I haven't taken any training
 - ② 1 day or less
 - ③ 2 or 3 days
 - ④ About a week
 - ⑤ 8–13 days
 - ⑥ 2 weeks or more (55)
15. On the whole, how would you evaluate the in-service training?
- ① I haven't taken any training
 - ② It was a valuable experience for me
 - ③ It was all right, but I didn't learn much
 - ④ It was mostly a waste of time, but I did learn something
 - ⑤ It was a complete waste of time (56)
16. Can you think of any way you have changed your thinking as a result of this in-service training?
- ① I haven't taken any training
 - ② No, I can't think of anything specific
 - ③ Yes, I can think of a specific change (57)
17. How much time do you usually spend each day preparing for the next day's classes?
- ① I don't spend any time in preparation
 - ② Approximately one hour per day
 - ③ Approximately two hours per day
 - ④ Approximately three hours per day or more (58)
18. Do other teachers ever ask you for advice about their teaching problems?
- ① Yes, often
 - ② Yes, occasionally
 - ③ Yes, seldom
 - ④ No, never (59)
19. During the usual school day, how much time altogether do you have to yourself, away from your students?
- ① None
 - ② A few minutes (up to 15)
 - ③ More than 15 minutes but less than an hour
 - ④ An hour or more (60)
20. As far as you know, do white (Anglo) parents come to school more often this year than last year, less often, or about the same?
- ① More
 - ② Less
 - ③ About the same
 - ④ Does not apply (61)
21. As far as you know, do minority-group parents come to school more often this year than last year, less often, or about the same?
- ① More
 - ② Less
 - ③ About the same
 - ④ Does not apply (62)
22. What proportion of your white (Anglo) students would you say are discipline problems—cut classes, damage property, get into fights?
- ① 20% or more
 - ② 15–19%
 - ③ 10–14%
 - ④ 5–9%
 - ⑤ Less than 5%
 - ⑥ Does not apply (63)
23. What proportion of your minority-group students would you say are discipline problems—cut classes, damage property, get into fights?
- ① 20% or more
 - ② 15–19%
 - ③ 10–14%
 - ④ 5–9%
 - ⑤ Less than 5%
 - ⑥ Does not apply (64)

24. What proportion of your white (Anglo) students would you say are performing adequately by your standards for this grade level?

- ① Almost all are doing adequate work
- ② More than half are doing adequate work
- ③ Less than half are doing adequate work
- ④ Very few are doing adequate work
- ⑤ Does not apply

(65)

25. What proportion of your minority-group students would you say are performing adequately by the same standards?

- ① Almost all are doing adequate work
- ② More than half are doing adequate work
- ③ Less than half are doing adequate work
- ④ Very few are doing adequate work
- ⑤ Does not apply

(66)

26. A number of schools have adopted multi-ethnic texts which discuss minority-group leaders and portray minority-group characters. Are texts of this type used in your school?

- ① Yes, most of the texts discuss minority groups
- ② Some of the texts are multi-ethnic, but most are not
- ③ No, none of the texts are multi-ethnic

(67)

27. Have there been any special projects in this school, such as plays or group discussions, which deal openly with intergroup problems?

- ① No, not to my knowledge
- ② Yes, I know of one such project
- ③ Yes, several projects

(68)

28. Do you feel that you should let your students know how you feel about race relations, or would that be improper?

- ① I should let them know
- ② That would be improper

(69)

29. How often do you have class discussions about race?

- ① Once a week or more
- ② Once a month
- ③ Once every few months
- ④ No such discussions so far

(70)

30. Think for a moment about the three teachers you talk with most often at this school. Are they the same racial (or ethnic) group you are?

- ① Yes, all same group as me
- ② No, one or more is from another group
- ③ All teachers in this school are the same group

(71)

31. Every teacher is bothered by some things about teaching. Look at this list of things that may have been a source of frustration to you this year. For each, fill in the circle in the "yes" column if you have felt this way, or the circle in the "no" column if you have not.

(72 - 78)

Yes No

- ① ② There is just too much work to do.
- ① ② Many of my students won't try to learn.
- ① ② The range of ability among my students makes it really hard to keep them all interested and learning.
- ① ② I feel as if I have a great deal of responsibility and no one to share it with.
- ① ② I feel as if no one appreciates my work.
- ① ② Too often I feel I don't have the training to solve some of the problems I am faced with.
- ① ② I feel the atmosphere is tense in this school.

32. What proportion of your white (Anglo) students would you say have the potential to attend the largest state university in your state?

- ① Almost all
- ② More than half
- ③ Less than half
- ④ Very few
- ⑤ Does not apply

(79)

33. What proportion of your minority-group students would you say have the potential to attend the largest state university in your state?

- ① Almost all
- ② More than half
- ③ Less than half
- ④ Very few
- ⑤ Does not apply

(80)

34. Do you feel scores on standardized tests are generally a good indicator of a pupil's ability?

- ① Yes, good indicator
- ② No, not good indicator

(81)

35. Are you enjoying teaching more or less this year than you did last year?

- ① I enjoy teaching more this year than last year
- ② I enjoy teaching less this year than last year
- ③ I really don't feel any difference
- ④ Does not apply

(82)

36. If you were starting your working life over again, would you decide to become a teacher, or would you select some other career?

- ① Teacher
- ② Other career

(83)

37. How often, this school year, have you gone to the head of your department or the principal to get advice on a teaching problem you were encountering?

① I haven't done this at all
 ② I asked for advice once or twice this year
 ③ I asked for advice 3 to 10 times
 ④ More than 10 times
 ⑤ Does not apply (84)

38. Compared to what you think other principals in other schools are like, do you think this school's principal is better than the average, as good as most, or below average?

① Principal is outstanding
 ② Principal is better than average
 ③ Principal is as good as most
 ④ Principal is below average (85)

39. Are any of the teachers in this school unfair to minority-group students?

① Almost all of them
 ② Many of them
 ③ A few
 ④ Only one teacher
 ⑤ None
 ⑥ Does not apply (86)

40. Are any of the teachers in this school unfair to white students?

① Almost all of them
 ② Many of them
 ③ A few
 ④ Only one teacher
 ⑤ None
 ⑥ Does not apply (87)

41. As far as you know, has your principal talked with any teachers because they have treated minority-group students unfairly?

① Yes
 ② No
 ③ No unfair teachers
 ④ Does not apply (88)

42. As far as you know, has your principal talked with any teachers because they have treated white students unfairly?

① Yes
 ② No
 ③ No unfair teachers
 ④ Does not apply (89)

43. For how many years have you worked with pupils of other racial or ethnic groups--that is, with students from a racial (or ethnic) group different from your own?

① Never
 ② 1 year (This is my first year)
 ③ 2 years
 ④ 3 years
 ⑤ 4 years
 ⑥ 5 or more years (90)

44. As far as you know, how do each of the following feel about desegregation? (91 - 95)

Like it very much
 Like it somewhat
 Do not care
 Dislike it somewhat
 Dislike it very much
 Don't know
 Does not apply

① ② ③ ④ ⑤ ⑥ Most of your students
 ① ② ③ ④ ⑤ ⑥ The principal of this school
 ① ② ③ ④ ⑤ ⑥ The Superintendent of this school district
 ① ② ③ ④ ⑤ ⑥ ⑦ Most white teachers in this school
 ① ② ③ ④ ⑤ ⑥ ⑦ Most minority teachers in this school

45. Listed below are some statements other people have made. For each, please mark whether you strongly agree, agree somewhat, disagree somewhat, or strongly disagree. (96 - 99)

Strongly agree
 Agree somewhat
 Disagree somewhat
 Strongly disagree

① ② ③ ④ The amount of prejudice against minority groups in this country is highly exaggerated.
 ① ② ③ ④ I would like to live in an integrated neighborhood.
 ① ② ③ ④ The civil rights movement has done more good than harm.
 ① ② ③ ④ Blacks and whites should not be allowed to intermarry.

46. If you had to choose one factor which accounts most for failure of the Negro to achieve equality, which would you choose--a lack of initiative and drive, or the restrictions imposed by a white society?

① Lack of initiative and drive
 ② Restrictions imposed by a white society (100)

47. In some schools, a student who is placed in a particular ability class will almost always stay in that level until he graduates; in other schools, a fairly large number of students are changed into different levels before they graduate. What happens in your school? (101)

- ① We do not separate students by ability level or into different academic programs
 ② Very few students change from one academic level or program to another
 ③ Approximately one student out of every ten changes between the time he enters school and the time he leaves
 ④ More than one-tenth of the students change

48. Would you say that your school is trying harder this year than it has in the past to get parents to visit the school or come to PTA or other parent groups, or is it not trying as hard?

- ① School is trying harder this year
 ② School is not trying as hard this year
 ③ No difference (102)

49. In the past week, have any students come to you to ask your advice on some problem they were having outside of your class? (103)

- ① No
 ② Yes, one did
 ③ Yes, two or three did
 ④ Yes, more than three did

50. In some school years, a teacher learns a lot about education, while in other years a teacher doesn't learn much. This year, have you learned a lot about: (104 - 110)

Yes No

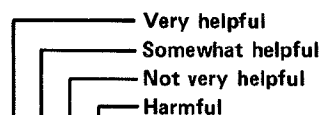
- ① ② new materials, new kinds of texts, supplementary materials?
 ① ② theories of teaching reading?
 ① ② effective methods of maintaining discipline?
 ① ② how to handle intergroup relations among students?
 ① ② being less afraid of other racial and ethnic groups?
 ① ② minority-group history?
 ① ② how better to deal with heterogeneous classes?

51. Compared to other schools that you know about, would you say that the tone of this school is more strict, more easy going, or about average?

- ① More strict
 ② More easy going
 ③ About average (111)

52. Below is a list of programs which have started in some schools. Think about a school like this one which might not have any of these programs, and tell us (by filling in one circle for each program) how helpful you think that program would be.

(112 - 134)



- ① ② ③ ④ Guidance counselors program
 ① ② ③ ④ Social worker-home visitor program
 ① ② ③ ④ Teacher aides
 ① ② ③ ④ Teacher workshops or in-service training for teachers or aides
 ① ② ③ ④ Remedial reading program
 ① ② ③ ④ Vocational training courses
 ① ② ③ ④ Minority group history or culture courses
 ① ② ③ ④ Special classrooms for underachievers
 ① ② ③ ④ Special classrooms for socially or emotionally maladjusted
 ① ② ③ ④ Achievement grouping of classrooms
 ① ② ③ ④ Achievement grouping within classes
 ① ② ③ ④ Major curriculum revisions
 ① ② ③ ④ Extracurricular activities geared towards minority students
 ① ② ③ ④ Late bus for students who stay for extracurricular activities
 ① ② ③ ④ Program for tutoring low achieving students
 ① ② ③ ④ Special program to increase parent-teacher contact (e.g., conferences)
 ① ② ③ ④ Programs to improve intergroup relations among students
 ① ② ③ ④ Program to improve intergroup relations among teachers
 ① ② ③ ④ Bi-racial advisory committee of students
 ① ② ③ ④ Equipment for students to use, such as reading machines, tape recorders, videotape machines, etc.
 ① ② ③ ④ Team teaching
 ① ② ③ ④ Ungraded classes
 ① ② ③ ④ Demonstration or experimental classrooms

HIGH SCHOOL TEACHERS PLEASE NOTE:

Please skip to page 10 now and answer questions H-1 to H-9.

COUNSELORS PLEASE NOTE:

Please skip to page 11 now and answer questions C-1 to C-3.

ELEMENTARY GRADES TEACHERS PLEASE NOTE:

Please turn to page 8 now and answer questions E-1 to E-11.

FOR TEACHERS IN ELEMENTARY GRADES

E-1. Are you involved in a team teaching program with more than one teacher (not an aide) sharing students and teaching them?

- ① Yes, all day
- ② Yes, part of every day
- ③ Yes, on some days
- ④ No

(135)

E-2. Do you have any teacher aides working with you and your students?

- ① Yes, full time for my class
- ② Yes, part time for my class
- ③ No

(136)

E-3. How is most of the teacher aide time spent in your class? (PLEASE MARK ONLY ONE CIRCLE.)

- ① I don't have an aide
- ② Doing clerical and other tasks
- ③ Helping students with their work
- ④ Working with parent or community groups
- ⑤ Helping to counsel students

(137)

E-4. What ethnic group is your aide? (If you have aides from more than one ethnic group, mark "Other" and describe in box.)

- ① I don't have an aide
- ② Black
- ③ White (Anglo)
- ④ Mexican-American
- ⑤ Puerto Rican
- ⑥ Cuban
- ⑦ American Indian
- ⑧ Other (What?)

(138)

Print

E-5. Is your classroom ungraded?

- ① Yes
- ② No

(139)

E-6. In an average week, how much extra time (not counting homework) do most poor readers spend in reading?

- ① None
- ② 1 hour to 2 hours a week extra
- ③ 3 or more hours a week extra

(140)

E-7. In an average week, how much extra time (not counting homework) do most poor math students spend on arithmetic?

- ① None
- ② 1 hour to 2 hours a week extra
- ③ 3 or more hours a week extra

(141)

E-8. I usually don't permit students to talk in class unless they first raise their hands.

- ① Agree
- ② Disagree

(142)

E-9. Have you or anyone else from the school system visited the homes of any of your students this school year?

- ① Yes, visited five or more homes
- ② Yes, visited three or four homes
- ③ Yes, visited one or two homes
- ④ No homes visited
- ⑤ I haven't, but don't know about others

(143)

E-10. We would like some additional information about two pupils in your class.

A. First, think of the white (Anglo) student whose name is first in alphabetical order. Please answer each of the following about that child.

Initial of child's last name

(144 - 150)

- Yes
- No
- Don't know
- Does not apply, no white students

Does that child--

- ① ② ③ ④ have many friends?
- ① ② ③ ④ have a hobby he or she is especially interested in?
- ① ② ③ ④ talk to you a lot about what he or she is doing?
- ① ② ③ ④ seem to have a difficult home life?
- ① ② ③ ④ have a special interest in some school project?

Is that child--

- ① ② ③ ④ often unhappy?
- ① ② ③ ④ likeable around adults?

E-10. (Continued)

B. Now please answer the questions about the first minority group child in alphabetical order.

Initial of child's last name (151 - 157)

- Yes
No
Don't know
Does not apply, no minority group students

- Does that child--
① ② ③ ④ have many friends?
① ② ③ ④ have a hobby he or she is especially interested in?
① ② ③ ④ talk to you a lot about what he or she is doing?
① ② ③ ④ seem to have a difficult home life?
① ② ③ ④ have a special interest in some school project?

- Is that child--
① ② ③ ④ often unhappy?
① ② ③ ④ likeable around adults?

E-11. We would like you to think about your classroom on the last school day before today.

NOW answer items A - D:

A. How many times did you have to interrupt what you were doing in order to tell students to stop talking, to pay attention, or to discipline them in some other way? (158)

- ① Only about once each hour
② Only about once every half hour
③ Once about every 15 minutes
④ More often than every 15 minutes

B. Offhand, how many students would you say paid attention to most of the school work during that day? (159)

- ① I think everyone paid attention
② All the students except one, two, or three paid attention
③ Most of the students paid attention, but there were more than 3 who did not
④ Less than half the class was paying attention

E-11 (Continued)

C. How many students participated individually--by reading a passage, working a problem on the board, etc.?

- ① None
② One to three
③ Four to ten
④ More than ten
⑤ Every student

(160)

D. How much time each day did you spend using classroom discussion as a method of teaching?

- ① None--my students cannot really benefit from it
② About 15 minutes
③ About 30 minutes
④ An hour or more

(161)

THANK YOU FOR THE TIME AND HELP YOU HAVE GIVEN TO THIS STUDY.

PLEASE

MAKE NO

STRAY

MARKS

ON THIS

PAGE

FOR HIGH SCHOOL TEACHERS

H-1. If you have a bi-racial student committee in your school, how effective has the committee been in solving intergroup problems and making desegregation go smoothly?

- ① No such committee
- ② Effective; it has helped
- ③ Somewhat effective; it has helped a small amount
- ④ It hasn't really accomplished anything
- ⑤ It has done as much harm as it has done good
- ⑥ It has been definitely harmful

(162)

H-2. Has the school organized any new bi-racial extracurricular activities this school year?

- ① Yes
- ② No
- ③ Does not apply

(163)

H-3. Has the school taken steps to make sure that all social clubs, band, athletic teams, etc., are integrated?

- ① Yes, all integrated
- ② No, some are not integrated
- ③ No extracurricular activities
- ④ Does not apply

(164)

H-4. Does the school have a course in minority group history or culture?

- ① Yes, more than one class
- ② Yes, one class
- ③ No

(165)

H-5. Compared to last year, as far as you know, has student participation in extracurricular activities increased, decreased, or remained the same in your school?

- ① Increased
- ② Decreased
- ③ Remained the same

(166)

H-6. Has the school eliminated any student dances because of possible racial problems?

- ① Yes
- ② No

(167)

H-7. Has the school eliminated any student elections because of possible racial problems?

- ① Yes
- ② No

(168)

H-8. We would like you to think about the last regular class (not a test or study period) you had before filling in this questionnaire.

NOW answer the following questions:

A. How often did you have to interrupt your work in that class to tell students to stop talking, to pay attention, or to discipline them in some other way?

- ① Not once in that period
- ② Only once or twice
- ③ Three or four times
- ④ More than four times

(169)

B. Off-hand, how many students would you say were paying little attention in that class?

- ① I think everyone paid attention
- ② All the students except 1, 2, or 3 paid attention
- ③ Most of the students paid attention, but more than 3 did not
- ④ Less than half the class was paying attention

(170)

C. In that class, how many students participated individually in the class--by answering a question, reading a passage, working a problem on the board, etc.?

- ① None
- ② One to three
- ③ Four to ten
- ④ More than ten
- ⑤ Every student

(171)

H-9. In an average series of five days of a given class, how often do you devote most of the time to classroom discussion?

- ① Less than one day out of five
- ② About one day in five
- ③ About two days in five
- ④ About three days in five
- ⑤ About four days in five
- ⑥ Nearly every period is mostly discussion

(172)

THANK YOU FOR THE TIME AND HELP YOU HAVE GIVEN TO THIS STUDY.

FOR COUNSELORS

C-1. About how many different students did you see in your role as counselor last week?

C-2. Of that total, about how many did you see primarily for each of the reasons listed below? (Write in approximate number of all students and approximate number of minority group students under appropriate columns.)

Approximate number of all students	Approximate number of minority students	Counseling primarily for ---								
<table border="1"><tr><td></td><td></td><td></td><td></td></tr></table>					<table border="1"><tr><td></td><td></td><td></td><td></td></tr></table>					Vocational counseling--helping students decide what kind of work they will do after graduation
<table border="1"><tr><td></td><td></td><td></td><td></td></tr></table>					<table border="1"><tr><td></td><td></td><td></td><td></td></tr></table>					College choice counseling--helping students choose a college and apply
<table border="1"><tr><td></td><td></td><td></td><td></td></tr></table>					<table border="1"><tr><td></td><td></td><td></td><td></td></tr></table>					Discipline problems; truancy, breaking rules, etc.
<table border="1"><tr><td></td><td></td><td></td><td></td></tr></table>					<table border="1"><tr><td></td><td></td><td></td><td></td></tr></table>					Handling racial problems--fights between white and black students, other racial issues
<table border="1"><tr><td></td><td></td><td></td><td></td></tr></table>					<table border="1"><tr><td></td><td></td><td></td><td></td></tr></table>					Academic counseling--trying to help students do better academic work
<table border="1"><tr><td></td><td></td><td></td><td></td></tr></table>					<table border="1"><tr><td></td><td></td><td></td><td></td></tr></table>					Personal counseling--not directly concerned with school work--helping students with emotional problems, family problems, sexual problems, etc.

C-3. About how many of these students decided to see you without being referred by a teacher?

THANK YOU FOR THE TIME AND HELP
YOU HAVE GIVEN TO THIS STUDY.

NORC-5038
March, 1972

OMB No.
Approval expires December 31, 1972

NATIONAL OPINION RESEARCH CENTER
University of Chicago

U.S. Office of Education Study
Evaluation of ESAP
and
Study of the Process of School Desegregation

PRINCIPAL'S INTERVIEW

School District: _____ Number:

 BEGIN DECK 1
1-3

Name of School: _____ Number:

 4-5 KEY PUNCH
GO TO
PAGE 5

Date	Record of Calls	Interviewer's Initials

1. First, I'd like to ask some questions about various categories of personnel at this school. HAND RESPONDENT CARD A.

A.			IF ANY IN A, ASK B-D.				C.	
How many full-time and part-time staff members in each of the categories on the card are currently working at this school? ASK A-D AS APPROPRIATE FOR EACH CATEGORY BEFORE GOING ON TO NEXT CATEGORY.			B.				(Is that person/are they available to (5th/10th) grade students?)	
			Of those, how many are . . .					
#Full time	#Part time	# Black	# White	#Mexican American	# Other	Yes	No	
Remedial reading teacher						1	2	
Remedial math teacher						1	2	
Music or art teacher						1	2	
Drama or speech teacher						1	2	
Gym teacher or coach						1	2	
Vocational education teacher						1	2	
Counselor aides						1	2	
Guidance counselor						1	2	
Psychologist						1	2	
Social worker						1	2	
Speech therapist						1	2	
Teacher aides						1	2	
Library aide or clerk						1	2	
Librarian						1	2	
Nurse						1	2	
Audio-visual specialist						1	2	
Truant officer/home visitor						1	2	
Community relations specialist						1	2	
Administrator (not listed above)						1	2	
Other (What?)						1	2	

E

Please look at Card A again and tell me how many persons in each category worked here either full time or part time during the 1970-71 school year.

not
college
graduates

# Full time	# Part time
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
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86	86
87	87
88	88
89	89
90	90
91	91
92	92
93	93
94	94
95	95
96	96
97	97
98	98
99	99
100	100

[illegible]

2. We've talked about special personnel. Now, please tell me how many regular classroom teachers are on your staff.

Total number of regular classroom teachers: _____

ASK A AND B FOR EACH CATEGORY BEFORE GOING ON TO NEXT CATEGORY.

A. Approximately how many of the teachers are . . . READ CATEGORY AND RECORD BELOW; THEN ASK B.	B. Approximately how many (READ CATEGORY) regular classroom teachers did you have last year?

Black	_____	_____
White	_____	_____
(Mexican-American) .	_____	_____
(American Indian) .	_____	_____

3. Including yourself, how many people hold administrative positions here?

Total number of administrators: _____

ASK A AND B FOR EACH CATEGORY BEFORE GOING ON TO NEXT CATEGORY.

A. Approximately how many administrators are . . . READ CATEGORY AND RECORD BELOW; THEN ASK B.	B. Approximately how many (READ CATEGORY) admin- istrators did you have last year?

Black	_____	_____
White	_____	_____
(Mexican-American) .	_____	_____
(American Indian) .	_____	_____

4. And how many people all together do you have on your clerical and secretarial staff?

Total number of clerical and secretarial staff: _____

ASK A AND B FOR EACH CATEGORY BEFORE GOING ON TO NEXT CATEGORY.

A. Approximately how many sec- retaries and clerks are READ CATEGORY AND RECORD BELOW; THEN ASK B.	B. Approximately how many (READ CATEGORY) clerks and secretaries did you have last year?

Black	_____	_____
White	_____	_____
(Mexican-American) .	_____	_____
(American Indian) .	_____	_____

5. How many clerical or para-professional positions that we've mentioned are filled by parents of children who attend this school?

CODE "0" FOR None 0

OR RECORD NUMBER _____ AND CODE "1" FOR ANY . . 1

6. During this school year, were any teacher institutes, workshops, or other in-service training offered to your teaching staff?

Yes . (ASK A) . 1

No 2

- A. IF YES: We'd like to know about the topics covered at some of the teacher institutes your teachers attended. For example, were there any programs which concentrated on [ITEM (1)]? NOW ASK ITEMS (2) - (4).

	Yes	No
(1) Teaching methods?	1	2
(2) Were there any which concentrated on curriculum development?	1	2
(3) How about school discipline--did any concentrate on that?	1	2
(4) And did any concentrate on desegregation and intergroup relations?	1	2

The next series of questions has to do with the ways in which individuals and groups in this community might have worked with your school during this school year.

7. Compared to last year, has the white (Anglo) community been more active in working with your school, less active, or has there been no change?

More active 1 10/

Less active 2

No change 3

8. Compared to last year, has the black (Mexican-American) community been more active in working with your school, less active, or has there been no change?

More active 1 11/

Less active 2

No change 3

9. As far as you know, does this community have an adult bi-racial committee to advise the school system on racial issues?

Yes . . (ASK A) . . 1 12/

No 2

- A. IF YES: Has that committee made any recommendations regarding your school?

Yes 1 13/

No 2

10. During this school year, approximately how many times have school personnel met with community or parent groups (excluding meetings with the bi-racial advisory committee) for the purpose of informing the community about the process of de-segregation here at (NAME OF SCHOOL)?

Not at all 0 14/
Once or twice 1
Three or four times . 2
Five or more times . 3

11. Does your school have a parent organization like the PTA or any other organized parent group?

Yes . . (ASK A) 1 15/
No 2

- A. IF YES: Think about this year's officers of that group--are they all white (Anglo), all minority group, or are the officers from more than one (racial) group?

All white 1 16/
All minority group . 2
More than one group . 3
Don't know 4

Now, I have some questions about special classes, programs, or activities.

12. Is there a special school in this district to which you can refer pupils with special learning disabilities or social adjustment problems?

Yes 1 17/
No 2

13. Has your school established any program to meet the needs of poor students for better nutrition, clothing, or financial help either this school year or last?

Yes, this school year 1 18/
Yes, last school year 2
Yes, this and last year . . . 3
No 4

14. What proportion of your students would you estimate meet the federal requirements as disadvantaged under Title I? (If you can give me the number of students more easily than per cent, I can take it that way.)

Number: _____ or _____ %

19	20	21

15. Approximately how many pupils at this school receive free hot lunches under the Department of Agriculture School Lunch Program? (Per cent is OK too, if it's easier.)

Number: _____ or _____ %

22	23	24

16. Has the racial (or ethnic) composition of your student population changed since the 1970-71 school year?

Yes	1	25/
No	2	

17. In what year did the desegregation plan have the greatest effect on change in the racial (or ethnic) composition in your student body?

1971	1	26/
1970	2	
1969	3	
1968	4	
1967	5	
1966	6	
1965 or before	7	
No change yet (SKIP TO Q. 20)	8	

18. At that time (YEAR CODED IN Q. 17), did you talk to your teachers either formally or informally regarding the way they should handle the new students, or did you feel it best to let each of them handle new students in their own way?

Talked to teachers	1	27/
Let them handle in own way	2	
Wasn't principal at time of desegregation	3	

19. Before desegregation, was this a white or black school?

White	1	28/
Black	2	KEYPUNCH
Mexican-American	3	GO TO
American Indian	4	PAGE 9.
Built as desegregated school	5	
Other (SPECIFY)	6	

20. A. Approximately how many white students are enrolled in this school? #: _____
B. Are they all assigned to this school, or are some of them voluntary transfers into this school? (IF NONE TO A, GO TO C[1])
All assigned 1
Some voluntary transfers
(ASK [1]) 2
[1] IF SOME VOLUNTARY TRANSFERS: About how many white students are voluntary transfers into this school? #: _____
C. Do all (or almost all) of the white students assigned to this school attend here, or have some transferred to another public or private school? All assigned attend here . . 1
Some assigned here have transferred (ASK [1]) . . 2
[1] IF "NONE" TO A OR SOME ASSIGNED TRANSFERRED OUT TO C: About how many white students who are assigned here have transferred to another public or private school? #: _____
-
21. A. Approximately how many black students are enrolled in this school? # _____
B. Are they all assigned to this school, or are some of them voluntary transfers into this school? (IF NONE TO A, GO TO C[1])
All assigned 1
Some voluntary transfers
(ASK [1]) 2
[1] IF SOME VOLUNTARY TRANSFERS: About how many black students are voluntary transfers into this school? #: _____
C. Do all (or almost all) of the black students assigned to this school attend here, or have some transferred to another public or private school? All assigned attend here . . 1
Some assigned here have transferred (ASK [1]) . . 2
[1] IF "NONE" TO A OR SOME ASSIGNED TRANSFERRED OUT TO C: About how many black students who are assigned here have transferred to another public or private school? #: _____
-
22. ASK ONLY IF SOME OTHER MINORITY GROUP CONSTITUTES 5% OR MORE OF STUDENT BODY. CODE OR RECORD WHICH GROUP THAT IS HERE; OTHERWISE, GO TO Q. 23. Mexican-American . 1
American Indian . 2
Other (SPECIFY) . 3
A. Approximately how many (GROUP CODED ABOVE) students are enrolled in this school? #: _____
B. Are they all assigned to this school, or are some of them voluntary transfers into this school? All assigned 1
Some voluntary transfers
(ASK [1]) 2
[1] IF SOME VOLUNTARY TRANSFERS: About how many (GROUP CODED ABOVE) students are voluntary transfers into this school? #: _____
C. Do all (or almost all) of the (GROUP CODED ABOVE) assigned to this school attend here, or have some transferred to another public or private school? All assigned attend here . . 1
Some assigned here have transferred [ASK [1]) . . 2
[1] IF SOME ASSIGNED HERE HAVE TRANSFERRED OUT: About how many (GROUP CODED ABOVE) students who are assigned here have transferred to another public or private school? #: _____

ASK EVERYONE:

23. What about religious minorities. Approximately what proportion of the student body here is Catholic? (Just your best guess.)

_____ %

29	30	31

24. Approximately what proportion of the student body is Jewish? (Just your best guess.)

_____ %

32	33	34

25. Have this school's attendance boundaries been redrawn, or have non-contiguous attendance areas been created to provide for more racial desegregation in this school?

Yes, boundaries redrawn 1 35/

Yes, non-contiguous attendance areas . . . 2

Yes, both 3

END
DECK 1

New School and boundaries drawn to provide for desegregation . . 4

No, neither 5

26. A. During the 1971-72 school year, did this school receive any [ASK ITEMS (1) - (6)]? CODE IN COL. A.

- B. How about last year (1970-71), did this school receive any [ASK ITEMS (1) - (7)]? CODE IN COL. B.

	A. 1971-72		B. 1970-71	
	Yes	No	Yes	No
(1) School furnishings?	1	2	1	2
(2) Funds for renovation?	1	2	1	2
(3) Funds for additional space?	1	2	1	2
(4) More text books than usual?	1	2	1	2
(5) More testing materials than you usually do?	1	2	1	2
(6) Human or community relations literature?	1	2	1	2
(7) Buses	////////////////		1	2

INTERVIEWER:

CONTINUE WITH Q. H-1 BELOW FOR HIGH SCHOOL PRINCIPAL
OR SKIP TO PAGE 16 FOR ELEMENTARY GRADES PRINCIPAL.

BEGIN
DECK 2

H-1. Does your school have a "career day" when representatives of various professions and occupations come to talk to the students about careers in their fields?

Yes 1 10/

No 2

H-2. Do college representatives come to your school to talk to students about their colleges or universities?

Yes 1 11/

No 2

H-3. Do you have a work-study program--we mean any kind of institutionalized program where students both work and attend classes?

Yes 1 12/

No 2

H-4. When your present 10th graders were in 7th and 8th grades, approximately how many of them went to schools which had ability-grouping? Would you say almost all, over half, less than half, or very few?

Almost all 1 13/

Over half 2

Less than half . . . 3

Very few 4

H-5. (HAND CARD C) Here is a card which lists three ability-grouping procedures.
Which best describes the ability-grouping procedure used in this school?

Students are placed into programs--college
preparatory, vocational, etc., by their
own choice (ASK A-C) . . 1 14/

Students are placed into programs or academic
tracks primarily on the basis of test
scores or teachers' recommendations . (ASK A-C) . . 2

We don't have academic programs or tracks,
either because the school is too small or
because we disapprove of tracking (GO TO Q. H-7) . 3

A. Approximately what proportion of the 10th grade academic classes--English,
Math, Social Studies, etc.--are separated by program, so that students are
in class only with students in their ability-group level or program?
(READ CATEGORIES)

All 1 15/
More than half . . . 2
About half 3
Less than half . . . 4

B. Are the non-academic classes, such as home room, gym, health, music, art--
separated by ability-group levels or tracks?

Yes, all are separated . 1 16/
Some are separated . . . 2
None are separated . . . 3

C. How many different levels of 10th grade English are there in this school?

One 1 17/
Two 2
Three 3
Four 4
Five 5
Six 6
Seven or more . . . 7

H-6. HAND RESPONDENT CARD D. Now I want to ask you about some programs, courses, and personnel. First, please look at this list and tell me which of these . . . CONTINUE IN COL. A.

	A. ... you don't have here at (NAME OF SCHOOL). Now, let's go thru the list of those you do have. Considering the size, composition, and needs of your particular student body, tell me for each one if it is large enough or too small.			ASK B & C FOR EACH "large enough" OR "too small" IN A BEFORE GOING ON TO NEXT ITEM IN A.		D. If you had to advise a principal of a school which didn't have any of these, which three would you say are most important? CIRCLE ONLY THREE CODES.		E. And of these three, which one would you pick as the single most important? CIRCLE ONLY ONE CODE.	
	Large enough	Too small	None	B. (Is that/are) (ITEM) available to 10th graders?	C. Did the school have (ITEM) last year (1970-71)?				
	Yes	No	Yes	No	Yes	No			
(1) Guidance counselors	1	2	3	4	5	6	7	01	01
(2) Social worker or home visitor program	1	2	3	4	5	6	7	02	02
(3) Teacher aides	1	2	3	4	5	6	7	03	03
(4) Teacher workshops or in-service training for teachers or teacher aides	1	2	3	4	5	6	7	04	04
(5) Remedial reading program	1	2	3	4	5	6	7	05	05
(6) Vocational training courses	1	2	3	4	5	6	7	06	06
(7) Minority group history or culture courses	1	2	3	4	5	6	7	07	07
(8) Special classrooms for underachievers	1	2	3	4	5	6	7	08	08

(9) Special classrooms for socially or emotionally maladjusted	1	2	3	4	5	6	7	09	09
(10) Achievement grouping of classrooms	1	2	3	4	5	6	7	10	10
(11) Major curriculum revisions	1	2	3	4	5	6	7	11	11
(12) Extracurricular activities geared toward minority students	1	2	3	4	5	6	7	12	12
(13) Late bus for students who stay late for extracurricular activities	1	2	3	4	5	6	7	13	13
(14) Program for tutoring low achieving students	1	2	3	4	5	6	7	14	14
(15) Special program to increase parent-teacher contact (e.g., conferences)	1	2	3	4	5	6	7	15	15
(16) Programs to improve intergroup relations among students	1	2	3	4	5	6	7	16	16
(17) Program to improve intergroup relations among teachers	1	2	3	4	5	6	7	17	17
(18) Bi-racial advisory committee of students	1	2	3	4	5	6	7	18	18
(19) Equipment for students to use, such as reading machines, tape recorders, video tape machines, etc.	1	2	3	4	5	6	7	19	19

INSTRUCTIONS FOR THIS PAGE: CHECK SCHOOL ENROLLMENT BY RACE ON PAGE 8.

IF BOTH BLACK AND WHITE STUDENTS, ASK H-7--H-10; THEN GO TO H-13.

IF NO WHITE STUDENTS (NONE TO Q. 20A), ASK H-8 & H-10 ONLY.

IF NO BLACK STUDENTS (NONE TO Q. 21A), ASK H-7 & H-9 ONLY.

IF 5% OR MORE OTHER MINORITY GROUP (Q. 22, PAGE 8), ASK H-7--H-10 AS APPROPRIATE AND ALSO ASK H-11 & H-12.

		NUMBER OF STUDENTS								
H- 7.	A. How many white 10th graders were enrolled here last fall (September, 1971)?	<table border="1" style="display: inline-table; vertical-align: middle;"><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td>18</td><td>19</td><td>20</td><td>21</td></tr></table>					18	19	20	21
18	19	20	21							
	B. How many of them have been expelled?	<table border="1" style="display: inline-table; vertical-align: middle;"><tr><td> </td><td> </td></tr><tr><td>22</td><td>23</td></tr></table>			22	23				
22	23									
	C. How many of them have dropped out of school now?	<table border="1" style="display: inline-table; vertical-align: middle;"><tr><td> </td><td> </td><td> </td></tr><tr><td>24</td><td>25</td><td>26</td></tr></table>				24	25	26		
24	25	26								
H- 8.	A. How many black 10th graders were enrolled here last fall (September, 1971)?	<table border="1" style="display: inline-table; vertical-align: middle;"><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td>27</td><td>28</td><td>29</td><td>30</td></tr></table>					27	28	29	30
27	28	29	30							
	B. How many of them have been expelled?	<table border="1" style="display: inline-table; vertical-align: middle;"><tr><td> </td><td> </td></tr><tr><td>31</td><td>32</td></tr></table>			31	32				
31	32									
	C. How many of them have dropped out of school now?	<table border="1" style="display: inline-table; vertical-align: middle;"><tr><td> </td><td> </td><td> </td></tr><tr><td>33</td><td>34</td><td>35</td></tr></table>				33	34	35		
33	34	35								
H- 9.	A. How many white seniors (12th graders) are enrolled here now?	<table border="1" style="display: inline-table; vertical-align: middle;"><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td>36</td><td>37</td><td>38</td><td>39</td></tr></table>					36	37	38	39
36	37	38	39							
	B. Approximately how many of them plan to go to college?	<table border="1" style="display: inline-table; vertical-align: middle;"><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td>40</td><td>41</td><td>42</td><td>43</td></tr></table>					40	41	42	43
40	41	42	43							
	C. Of the others, how many, if any, do you know have obtained employment for after graduation?	<table border="1" style="display: inline-table; vertical-align: middle;"><tr><td> </td><td> </td><td> </td></tr><tr><td>44</td><td>45</td><td>46</td></tr></table>				44	45	46		
44	45	46								
H-10.	A. How many black seniors (12th graders) are enrolled here now?	<table border="1" style="display: inline-table; vertical-align: middle;"><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td>47</td><td>48</td><td>49</td><td>50</td></tr></table>					47	48	49	50
47	48	49	50							
	B. Approximately how many of them plan to go to college?	<table border="1" style="display: inline-table; vertical-align: middle;"><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td>51</td><td>52</td><td>53</td><td>54</td></tr></table>					51	52	53	54
51	52	53	54							
	C. Of the others, how many, if any, do you know have obtained employment for after graduation?	<table border="1" style="display: inline-table; vertical-align: middle;"><tr><td> </td><td> </td><td> </td></tr><tr><td>55</td><td>56</td><td>57</td></tr></table>				55	56	57		
55	56	57								
H-11.	A. How many (GROUP CODED IN Q. 22) 10th graders were here last fall (September, 1971)?	<table border="1" style="display: inline-table; vertical-align: middle;"><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td>10</td><td>11</td><td>12</td><td>13</td></tr></table>					10	11	12	13
10	11	12	13							
	B. How many of them have been expelled?	<table border="1" style="display: inline-table; vertical-align: middle;"><tr><td> </td><td> </td></tr><tr><td>14</td><td>15</td></tr></table>			14	15				
14	15									
	C. How many of them have dropped out of school now?	<table border="1" style="display: inline-table; vertical-align: middle;"><tr><td> </td><td> </td><td> </td></tr><tr><td>16</td><td>17</td><td>18</td></tr></table>				16	17	18		
16	17	18								
H-12.	A. How many (GROUP CODED IN Q. 22) seniors are enrolled here now?	<table border="1" style="display: inline-table; vertical-align: middle;"><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td>19</td><td>20</td><td>21</td><td>22</td></tr></table>					19	20	21	22
19	20	21	22							
	B. Approximately how many of them plan to go to college?	<table border="1" style="display: inline-table; vertical-align: middle;"><tr><td> </td><td> </td><td> </td></tr><tr><td>23</td><td>24</td><td>25</td></tr></table>				23	24	25		
23	24	25								
	C. Of the others, how many, if any, do you know have obtained employment for after graduation?	<table border="1" style="display: inline-table; vertical-align: middle;"><tr><td> </td><td> </td><td> </td></tr><tr><td>26</td><td>27</td><td>28</td></tr></table>				26	27	28		
26	27	28								

BEGIN
DECK 3

H-13. Are the student government officers in your school all of the same racial (ethnic) group, or are they from different groups?

All same . . . 1 29/
Different . . 2

H-14. Are the cheerleaders in your school all of the same racial (ethnic) group, or are they from different groups?

All same 1 30/
Different . . . 2

H-15. During this school year, how many students in your school have been warned or disciplined because of inappropriate dress or hair length?

NUMBER OF STUDENTS: _____

31	32	33

H-16. How did your football team do this school year--was the team undefeated or lost only one game, did they win more than half their games, or less than half?

No football team 1 34/
Undefeated or lost only
one game 2
Won more than half their
games 3
Won less than half their
games 4

H-17. How about your basketball team this school year--was the team undefeated or lost one game, did they win more than half their games, or less than half?

No basketball team 1 35/
Undefeated or lost only
one game 2
Won more than half their
games 3
Won less than half their
games 4

END OF DECK 3

NOW CONTINUE WITH Q. 27, PAGE 18.

ASK Q. E-2 (PAGES 16 & 17) FOR ELEMENTARY GRADES PRINCIPAL (FOR HIGH SCHOOL PRINCIPAL, SKIP TO PAGE 18.)

E-2. HAND RESPONDENT CARD E.

Now I want to ask you about some programs, courses, and personnel. First, please look at this list and tell me which of these . . .
CONTINUE IN COL. A.

	A. ... you don't have here at (NAME OF SCHOOL). Now, let's go thru the list of those you do have. Considering the size, composition, and needs of your particular student body, tell me for each one if it is large enough or too small.			ASK B & C FOR EACH "large enough" OR "too small" IN A BEFORE GOING ON TO NEXT ITEM IN A.				D. If you had to advise a principal of a school which didn't have any of these, which three would you say are most important? CIRCLE ONLY THREE CODES.	E. And of these three, which one would you pick as the single most important? CIRCLE ONLY ONE CODE.
	Large enough	Too small	None	B. (Is that/are) (ITEM) available to 5th graders?		C. Did the school have (ITEM) last year (1970-71)?			
	Yes	No		Yes	No	Yes	No		
(1) Guidance counselors	1	2	3	4	5	6	7	01	01
(2) Social worker or home visitor	1	2	3	4	5	6	7	02	02
(3) Team teaching	1	2	3	4	5	6	7	03	03
(4) Teacher aides	1	2	3	4	5	6	7	04	04
(5) Teacher workshops or in-service training for teachers or teacher aides	1	2	3	4	5	6	7	05	05
(6) Remedial reading program	1	2	3	4	5	6	7	06	06
(7) Ungraded classrooms	1	2	3	4	5	6	7	07	07
(8) Demonstration or experimental classrooms	1	2	3	4	5	6	7	08	08

(9) Special classrooms for underachievers	1	2	3	4	5	6	7	09	09
(10) Special classrooms for socially or emotionally maladjusted	1	2	3	4	5	6	7	10	10
(11) Achievement grouping of classrooms	1	2	3	4	5	6	7	11	11
(12) Achievement grouping within classes	1	2	3	4	5	6	7	12	12
(13) Major curriculum revisions	1	2	3	4	5	6	7	13	13
(14) Program for tutoring low achieving students	1	2	3	4	5	6	7	14	14
(15) Special program to increase parent-teacher contact (e.g., conferences)	1	2	3	4	5	6	7	15	15
(16) Programs to improve intergroup relations among students	1	2	3	4	5	6	7	16	16
(17) Program to improve intergroup relations among teachers	1	2	3	4	5	6	7	17	17
(18) Equipment for students to use, such as reading machines, tape recorders, video tape machines, etc.	1	2	3	4	5	6	7	18	18

CONTINUE WITH Q. 27 ON PAGE 18.

27. When this school year started, did your school develop any sort of contingency plan in case of any sort of racial (intergroup) difficulty?

Yes 1 10/
No 2

28. During this school year, has this school been kept closed any days or has it closed early because of racial (intergroup) tensions or problems?

Yes 1 11/
No 2

29. What about last year--was the school kept closed any days or did it close early because of racial (intergroup) tensions or problems?

Not closed 1 12/
Closed one or more days . 2

30. During this school year, have you held any faculty meetings specifically to discuss problems of desegregation or to deal with racial (intergroup) issues?

Yes 1 13/
No 2

31. During this school year, has the situation required that you write any memos to the faculty, talk to faculty members individually or in groups, or do anything else to help them handle racial (intergroup) issues?

Write memos 1 14/
Talk with faculty members
individually or in groups . . 2
Other (SPECIFY) 3
No, none of these 4

32. This school year, have you called any assemblies on racial (intergroup) issues, or on current events having to do with race (or ethnicity)?

Yes 1 15/
No 2

33. Have you received any memoranda during this school year from the superintendent of your school district giving suggestions or guidelines about how to make desegregation go more smoothly?

A. IF YES: Did you find these suggestions or guidelines helpful, or were you doing something like that already, or did you think the suggestions weren't useful to you?

Yes . (ASK A) . 1 16/
No 2
Found them helpful 1 17/
Already doing something like
that 2
Weren't useful 3

34. What was the average daily absenteeism rate for this school in January 1972?

_____ % absent

18	19	20

35. Has the absenteeism of minority group students been greater or less in this school year than in 1970-71, or about the same?

Greater	1	21/
Less	2	
No change	3	
No minority group students last year	4	

36. Has the absenteeism of white (Anglo) students been greater or less this school year than it was in 1970-71, or about the same?

Greater	1	22/
Less	2	
No change	3	
No white students last year	4	

37. In your opinion, are test scores generally a good indicator of a pupil's ability?

Yes, good indicator . . .	1	23/
No, not good indicator . .	2	

38. What was the most recent--preferably Spring 1970--median or mean achievement score for your school on some standardized achievement test? We would prefer scores for students now in (5th/10th) grade, but the median or mean score for a grade close to the (5th/10th) would be all right.

SCORE: _____

INTERVIEWER: FIND OUT INFORMATION NECESSARY TO COMPLETE A-D.

A. Is the score the mean or the median?

Mean	1
Median	2
Other (SPECIFY) . . .	3

B. What is the name of the standardized test?

C. CODE SEASON AND WRITE IN YEAR TEST GIVEN.

SEASON

YEAR: _____

Spring	1
Fall	2
Winter	3

D. CODE GRADE LEVEL TESTED FOR WHICH YOU GOT TEST SCORE.

3rd	1	8th	6
4th	2	9th	7
5th	3	10th	8
6th	4	11th	9
7th	5	12th	0
		School as a whole	X

39. We're interested in your personal opinion of the quality of teaching of the white and black (minority group) teachers in this school.

A. First, if you had to divide the white teachers into three categories--good, average, and poor--what proportion would you put in each?

			% good	24-26
			% average	27-29
			% poor	30-32

No white teachers in school . . . 0

B. How about black (minority group) teachers--what proportion of the black teachers would you put into each of the three categories?

			% good	33-35
			% average	36-38
			% poor	39-41

No black teachers in school . . . 0

40. Some people say that black students would really be better off in all-black schools. Others say that blacks are better off in racially mixed schools. Which do you think --that READ CATEGORIES.

Most black students are better
off in all-black schools . . . 1 42/

or

Most black students are better
off in mixed schools 2

41. What about white students--do you think that most white students are better off in all-white schools, or are they better off in racially mixed schools?

Most white students are better
off in all-white schools . . . 1 43/

or

Most white students are better
off in mixed schools 2

42. This school year, have you had time to observe any classes, or does your schedule not allow for that?

Yes 1 44/

No 2

43. Now I will read some statements other people have made. For each, please tell me whether you strongly agree, agree somewhat, disagree somewhat, or strongly disagree

	Strongly agree	Agree somewhat	Disagree somewhat	Strongly disagree	
A. First, the amount of prejudice against minority groups in this country is highly exaggerated	1	2	3	4	45/
B. You would like to live in an integrated neighborhood	1	2	3	4	46/
C. The civil rights movement has done more good than harm	1	2	3	4	47/
D. Blacks and whites should not be allowed to intermarry	1	2	3	4	48/

44. If you have to choose one factor which accounts most for failure of the Negro to achieve equality, which would you choose--a lack of initiative and drive, or the restrictions imposed by a white society?

A lack of initiative and drive 1 49/
 Restrictions imposed by a white society 2

45. The amount of violence varies from community to community and school to school. Thinking about the entire current school year here at (NAME OF SCHOOL), how many instances of a student being hurt in a fight seriously enough to require hospitalization have occurred? CODE ON LINE FOR ITEM A. NOW ASK B-F IN SAME WAY.

NUMBER OF INSTANCES

	None	One	Two	Three	Four or more	
A. A student being hurt in a fight seriously enough to require hospitalization?	0	1	2	3	4	50/
B. A student being hurt seriously enough in a fight to require attention by a doctor or nurse?	0	1	2	3	4	51/
C. A student's locker being broken into?	0	1	2	3	4	52/
D. How many instances of a student being robbed by a gang or group of other students have occurred this school year?	0	1	2	3	4	53/
E. A teacher being attacked by a student?	0	1	2	3	4	54/
F. A robbery of school property worth over \$50?	0	1	2	3	4	55/

46. Are you enjoying your work more this year than last year, or less, or about the same?

More 1 56/
Less 2
Same 3

47. Some educators say that the principal of a school can have a very important effect on how well his students do in school; others say that so much depends upon the teachers, the family background of the students, and the school district's finances that there is little a principal can do. Which comes closest to how you feel?

Principal can have an important effect 1 57/
Much depends on others; principal can do little 2

48. Compared to superintendents in other districts in this part of the country, how would you rate your superintendent in his overall ability--outstanding, better than most, about average, or below average.

Outstanding 1 58/
Better than most . . . 2
About average 3
Below average 4

49. As far as you know, how do (ITEM A) feel about desegregation--do they like it very much, like it somewhat, dislike it somewhat or dislike it very much?
(NOW ASK B & C IN SAME WAY.)

Like it very much	Like it somewhat	Dislike it somewhat	Dislike it very much	Don't know	Don't care	Doesn't apply

A. Most white teachers in this school	1	2	3	4	5	6	7	59/
B. Most minority teachers in this school	1	2	3	4	5	6	7	60/
C. The superintendent of your school district	1	2	3	4	5	6	///////	61/

50. How do you feel about desegregation--do you (READ CATEGORIES)?

Like it very much . . 1 62/
Like it somewhat . . . 2
Dislike it somewhat . 3
Dislike it very much 4

51. What would you say is the worst problem your school is having this school year?
(PROBE: In what way is that a problem?)

-
52. As far as you are concerned, has the busing program had any particular advantage or disadvantage at this school?

Yes (ASK A & B) 1 63/
No 2
No busing program 0

IF YES:

A.

What are the advantages? (PROBE:
What other advantages can you
think of?)

IF NONE CODE 0 AND ASK B.

B.

What are the disadvantages? (PROBE:
What other disadvantages?)

IF NONE CODE 0

Up to now, we have been talking about the school, about teachers, students, and your view of things in your role as the principal. Now let's finish up with a few questions about yourself and your own background.

53. Which age group are you in? READ CATEGORIES:

25 or under . . .	1	64/
26-35	2	
36-45	3	
46-55	4	
56-65	5	
Over 65	6	

54. What is the highest level of education you have completed?

1-3 years of college	1	65/
4 years of college	2	
More than 4 years of college	3	
Master's degree	4	
Graduate work beyond Master's	5	
Doctor's degree	6	

55. A. What is the highest level of education your father completed? CODE IN COL. A.

	A. Father	B. Mother
No formal schooling	00 66-67/	00 68-69/
Less than 5 grades	01	01
5 to 7 grades	02	02
8 grades	03	03
9 to 11 grades	04	04
12 grades	05	05
1-3 years of college	06	06
4 years of college	07	07
Master's degree	08	08
Doctor's degree	09	09

B. What is the highest level of education your mother completed? CODE IN COL. B.

56. Was the high school from which you graduated in this state or another state?

This state . . .	1	70/
Another state . .	2	

57. Was the college from which you received your bachelor's degree segregated or integrated?

Segregated . . .	1	71/
Integrated . . .	2	

58. How long have you been principal of this school?

One year (This is my 1st year) . . .	1	72/
Two years	2	
Three years	3	
Four years	4	
Five or more years	5	

Thank you very much for your time. You have been most helpful.

A. CODE SEX: Male . . . 1 73/ Female . . . 2

B. CODE White 1 74/ RACE: Black 2 Other (SPECIFY) . . . 3

C. Time Ended: _____

D. Total Length of Interview: _____
Minutes

E. _____
(Signature of Interviewer)

Survey 5038
March, 1972

OMB No.
Approval expires December 31, 1972

NATIONAL OPINION RESEARCH CENTER
University of Chicago

BEGIN DECK 8

United States Office of Education Study
Evaluation of ESAP
and
Study of the Process of School Desegregation

ESAP PROJECT DIRECTOR INTERVIEW

Before going to field:

COPY NAMES OF SAMPLE SCHOOLS IN THIS DISTRICT FROM YOUR SCHOOL ROSTER TO:

CARD 1;
TO Q. 7, PAGE 3; AND
TO SEPARATE SUPPLEMENT FOR EACH SCHOOL.

Optional Introduction:

I'm _____ from the National Opinion Research Center.
As you know, we are working with the U.S. Office of Education to
study the impact of ESAP and other compensatory education programs.
We need to get the knowledge and opinions of people who have worked
with these programs on a local level so that the Office of Education
may incorporate such knowledge in their planning of future programs.

School District: _____

Respondent's Name: _____

and Title: _____

IF R IS NOT ESAP DIRECTOR LISTED ON FACE SHEET, GIVE REASON FOR CHANGE.

TIME	_____	AM
BEGAN:	_____	PM

DECK 8

1. Of all the various educational programs and innovations you know about, which one do you think has turned out to have the most effect in raising achievement levels of the students involved. (PROBE: Why is that?)

-
2. Is there some program you or other school staff here would like to see implemented but for which you have been unable to get ESAP or other funding?

IF YES: DESCRIBE. IF NO: CHECK HERE ☐

-
3. Who participates in planning and developing ESAP programs in this district?

-
4. I need to find out details about the use of ESAP (Title 45) funds in this school district. How much money was granted to the district by ESAP for the 1971-72 school year?

\$

10-16

-
5. A. On what date was this year's (1971-72) ESAP grant approved for this district?

DATE: _____

- B. What is the earliest date (approximately) by which programs or personnel paid for by this year's (1971-72) ESAP grant became operational in this district?

DATE: _____

6. And how much money did this district receive from ESAP during the 1970-71 school year? 17-23

\$

7. HAND RESPONDENT CARD 1.

- A. On this card I have a list of schools in our sample. To make sure that I have each one in the correct category, please tell me whether or not any ESAP funds have been allocated to that school during this 1971-72 school year. CODE YES OR NO IN COLUMN A.

IF ANY ESAP FUNDS IN DISTRICT LAST YEAR (Q. 6), ASK B.

- B. Please tell me for each school on the card whether or not they received any ESAP funds last year (1970-71). CODE YES OR NO IN COLUMN B.

School Names	(DECK 6/10)		(DECK 6/11)	
	A. Funds this year? 1971-72		B. Funds last year? 1970-71	
	Yes	No	Yes	No
	1	2	1	2
	1	2	1	2
	1	2	1	2
	1	2	1	2
	1	2	1	2
	1	2	1	2
	1	2	1	2
	1	2	1	2
	1	2	1	2

7. (Cont'd)

FOR DISTRICTS WITH MORE THAN 10 SAMPLE SCHOOLS:

(DECK 6/10)

(DECK 6/11)

[illegible]

I'm going to ask you for details about the use of ESAP funds at schools in our sample in this district. But before I do, I'd like to find out about ESAP funds used for community-wide programs or for more than one school so that the programs or personnel involved could not be correctly described as at an individual school.

8. Were ESAP funds used to pay personnel hired on a community-wide basis, such as anyone involved in long-range planning for the district, or in community relations, or in a centrally located remedial or tutorial program available to children from various schools?

IF YES: DESCRIBE. IF NO: CHECK HERE ☐ AND GO TO Q. 9.

24-25/

(DECK 6/12)

A. CARD 1. From which of the schools on this list (do/did) teachers or pupils participate in that program?	B. ASK FOR EACH SCHOOL NAMED IN A: (Are/ Were) (fifth/tenth) grade pupils or teachers involved?		
	Yes, pupils	Yes, teachers	No, neither
	1	2	3
	1	2	3
	1	2	3
	1	2	3
	1	2	3
	1	2	3

9. Were (these or similar) community-wide personnel provided by ESAP funds during the last school year (1970-71)?

26/9

Yes, same or similar 1

No, not provided last year . . . 2

Differences in this category
last year (DESCRIBE BRIEFLY) 3

10. Were any district-wide or inter-school teacher education programs, institutes, or workshops paid for by ESAP funds? IF YES: DESCRIBE. IF NO: CHECK HERE ☐ AND

GO TO
Q. 11.

27-28/

DECK 6/13)

A.	B.	
CARD 1.	ASK FOR EACH SCHOOL NAMED	
From which of the schools on this list (do/did) teachers participate in that program?	IN A: (Are/were) teachers of (fifth/tenth) grade pupils involved?	
	Yes	No
	1	2
	1	2
	1	2
	1	2
	1	2
	1	2

11. Were (these or similar) teacher education programs provided by ESAP funds during the last school year (1970-71)? 29/9

Yes, same or similar 1

No, not provided last year 2

Differences in this category
last year (DESCRIBE BRIEFLY) . . . 3

12. Were any of the supplies, equipment or materials purchased by ESAP funds made available district-wide or to more than one school so that you can't actually specify which school they belong to? IF YES: DESCRIBE. IF NO: CHECK HERE ☐ AND GO TO Q.13.
30-31/

(DECK 6/14)

A. CARD 1. From which of the schools on this list (do/did) teachers or pupils use the equipment or materials?	B. ASK FOR EACH SCHOOL NAMED IN A: (Are/Were) (fifth/tenth) grade pupils or teachers involved? Yes, pupils Yes, teachers No, neither
	1 2 3
	1 2 3
	1 2 3
	1 2 3
	1 2 3
	1 2 3

13. Were (these or similar) supplies and equipment provided by ESAP funds during the last school year (1970-71)?
- Yes, same or similar 1 32/9
- No, not provided last year 2
- Differences in this category
last year (DESCRIBE BRIEFLY) . 3

14. Were ESAP funds used for any other programs or other purposes that affected more than one school in the district? IF YES: DESCRIBE. IF NO: CHECK HERE ☐ AND GO TO Q. 15.
33-34/

(DECK 6/15)

A.	B.		
CARD 1. From which of the schools on this card (are/were) teachers or pupils involved in that program	ASK FOR EACH SCHOOL NAMED IN A: (Are/Were) (fifth/tenth) grade pupils or teachers involved?		
	Yes, pupils	Yes, teachers	No, neither
	1	2	3
	1	2	3
	1	2	3
	1	2	3
	1	2	3
	1	2	3

15. Were (these or similar) programs paid for by ESAP funds during the last school year (1970-71)?
- Yes, same or similar 1 35/9
- No, not provided last year . . 2
- Differences in this category
last year (DESCRIBE BRIEFLY) 3

Next, I have a series of detailed questions about the schools listed on Card 1. I'll start with (NAME OF SCHOOL), and we can either go through them all for one school or ask each question for the whole group of schools before going on to the next question--which-ever plan seems most convenient to you. AFTER ALL SUPPLEMENTS, RETURN TO Q. 16, PAGE 9.

IF THERE ARE MANY SCHOOLS, COMPLETE THIS QUESTIONNAIRE, LEAVE THE SUPPLEMENTS FOR ESAP DIRECTOR TO COMPLETE, AND ARRANGE TO PICK THE SUPPLEMENTS UP OR LEAVE BUSINESS REPLY ENVELOPE FOR ESAP DIRECTOR TO MAIL TO NORC, CHICAGO.

16. A.	Have any previously all black high schools in this district been closed or converted into vocational or special schools?	Yes	No	
		1	2	36/9
B.	Have any previously all black high schools in this district been integrated as high schools?	1	2	37/9
C.	Are any previously all black high schools still all black?	1	2	38/9

17. A.	ASK ITEMS (1)-(4); IF YES, ASK B BEFORE GOING TO NEXT ITEM.	A.		B.	IF YES TO A: In what year was (that/the most recent)?
		Yes	No		
(1)	Has there ever been a boycott in this district because of desegregation? 39/9	1	2		40-41/99
(2)	Are there any segregated private schools in this community? 42/9	1	2		43-44/99
(3)	Was there any effort made to defeat the superintendent or school board in an election since desegregation of schools? 45/9	1	2		46-47/99

18.	Has there been a protest by whites this year?	Yes . . .	1	
		No . . .	2	48/9

19.	Has there been a protest by blacks this year?	Yes . . .	1	
		No . . .	2	49/9

20.	When was the most recent large protest by blacks here in (NAME OF COUNTY OR CITY) about a civil rights issue such as employment or education? (By large, I mean where there were demonstrations for more than one day, with arrests, or violence, or large numbers of people involved.)	1971	00	
		1970	01	
		1969	02	
		1968	03	50-51/99
		1967	04	
		1966	05	
		1965	06	
		1964	07	
		1963 or earlier	08	
		Never	09	

21.	In what year did this district first assign black students to attend previously all white schools? DO NOT COUNT VOLUNTARY TRANSFERS.	1971	00	52-53/99
		1970	01	
		1969	02	
		1968	03	
		1967	04	
		1966	05	
		1965	06	
		1964	07	
		1963 or earlier	08	
		Never	09	

22. In what year did this district desegregate all of its previously white schools, or are some still all white?

1971	0	54-55/ 99
1970	1	
1969	2	
1968	3	
1967	4	
1966	5	
1965	6	
1964	7	
1963 or earlier	8	
Some still white	9	

23. In what year did this district first require white students to attend previously all black schools?
DO NOT COUNT VOLUNTARY TRANSFERS.

1971	0	56-57/ 99
1970	1	
1969	2	
1968	3	
1967	4	
1966	5	
1965	6	
1964	7	
1963 or earlier	8	
Never	9	

24. In some districts the desegregation plan requires that some students attend schools that are not the nearest to their home.

- A. Approximately how many, if any, white students here attend a school that is not the nearest school to their home for purposes of desegregation?

58-63/
99

Number:

- B. Approximately how many, if any, black students here attend a school that is not the nearest school to their home?

64-59/
99

Number:

25. During the 1970-71 school year what was the current expenditure per pupil in average daily attendance?

\$

70-73/
9999

26. Is the school board here elected at large, elected from districts, or appointed?

Elected-- 74/9

at large 1

from districts 2

Appointed 3

27. Is the superintendent in this district elected or appointed?

Elected 1 75/9

Appointed 2

28. Did (you/the superintendent) hold another position in this district before becoming superintendent?

Yes 1 76/9

No 2

Thank you very much for your assistance.

INTERVIEWER REMARKS

TO BE FILLED OUT IMMEDIATELY AFTER INTERVIEW.

A. CODE RESPONDENT'S RACE/ETHNICITY:

B. CODE SEX:

Black 1 77/

Male 1 78/

White 2

Female 2

Mexican-American 3

C. Time Ended: _____

E. Date of Interview: _____

D. Total Length: _____

F. Signature of
Interviewer: _____

G. Number of supplements completed during interview (ENCLOSE THEM
WITH THIS INTERVIEW) _____

H. Plus number of supplements I left with ESAP Director to complete
(LIST SPECIFIC SCHOOLS ON BACK OF FACE SHEET) _____

+ _____

I. Equals total supplements for this school district (should also
equal total number of schools listed in Q. 7) _____

= _____

J. IF ONE OR MORE IN H: What will ESAP Director do with the supplements?

Hold them for me
to pick up on _____ 1
(date)

Mail them to NORC, Chicago in
Business Reply Envelope 2

Other (SPECIFY) 3

NORC - 5038
March, 1972

OMB No.
Approval expires December 31, 1972

NATIONAL OPINION RESEARCH CENTER
University of Chicago

U.S. Office of Education Study
Evaluation of ESAP
and
Study of the Process of School Desegregation

Supplement for: _____ School

School District: _____

Please answer all of the questions in this booklet for the above school. All questions can be answered by either making a (✓) in a box, writing in a number, or giving a short description in your own words. If a question does not seem to apply or the answer is "none," please write that in so that we will know our information is complete.

S-1. A. During this school year (1971-72), did ESAP (Title 45) pay for any teacher (or teacher aide) preparation programs, institutes, workshops, or other in-service training programs for personnel at this school (other than district-wide programs that you may have told me about already)?

IF YES: DESCRIBE. IF NO: CHECK HERE ☐

B. Did fifth or tenth grade teachers participate?

Yes, fifth . . . ☐

Yes, tenth . . . ☐

No, neither . . . ☐

S-2. Were teacher or teacher aide preparatory programs paid for by ESAP for this school last year (1970-71)?

Yes, same or similar . . . ☐

No, no programs ☐

Different programs
PLEASE DESCRIBE ☐

- S-3. A. During this school year (1971-72), did ESAP (Title 45) pay for any team teaching, ungraded classrooms, remedial or other special classes, or any other new techniques at this school?

IF YES: DESCRIBE.

IF NO: CHECK HERE

☐

- B. (Is/was) the fifth or tenth grade involved in these special classes or new techniques?

Yes, fifth grade ☐

Yes, tenth grade ☐

No, neither ☐

-
- S-4. Last year (1970-71), did ESAP funds pay for any special classes or new techniques for this school?

Yes, same or similar . . . ☐

No, none ☐

Different (PLEASE DESCRIBE) ☐

-
- S-5. A. During this school year (1971-72), did ESAP (Title 45) funds pay for any programs of physical care for the students at this school--things such as free hot lunch programs or medical or dental care?

IF YES: DESCRIBE.

IF NO: CHECK HERE

☐

- B. IF YES: (Are/Were) fifth or tenth grade students involved?

Yes, fifth . . . ☐

Yes, tenth . . . ☐

No, neither . . . ☐

S-6. Were physical care programs paid for by ESAP for this school last year (1970-71)?

Yes, same or similar program . . . ☐

No, no physical care program . . . ☐

Different programs
(PLEASE DESCRIBE) ☐

S-7. A. During this (1971-72) school year, did ESAP (Title 45) pay for any (other) special curriculum revisions at this school--besides what you may already have mentioned?

IF YES: DESCRIBE. IF NO: CHECK HERE ☐

B. IF YES: (Is/Was) the curriculum for the fifth or tenth grade involved?

Yes, for fifth ☐

Yes, for tenth ☐

No, neither ☐

S-8. Were curriculum revisions paid for for this school by ESAP last year (1970-71)?

Yes, same or similar . . ☐

No, no curriculum revisions last year . . . ☐

Different revisions
(PLEASE DESCRIBE) . . ☐

S-10.	A.		B.			C.	
	During this school year (1971-72) did ESAP funds pay for materials and equipment for this school? (Please do not include any materials you may have mentioned earlier as belonging to more than one school.)		Is this available to the 5th or 10th grade?			Was this paid for by ESAP last year (1970-71)?	
	Yes	No	Yes, 5th	Yes, 10th	No	Yes	No
Text books							
Other written teaching materials							
Reading machine or other instructional equipment							
Audio visual equipment							
Testing materials							
Human or community relations literature							
Recreation equipment							
Office supplies							
School furnishing							
Renovations							
Additional space							
Were buses paid for by ESAP last year? CODE IN COL. C.							

S-11. What other programs or services at this school were paid for by ESAP funds during this school year (1971-72)?

Thank you very much for your assistance.

5038
3/72

BEGIN DECK 9

Respondent's Name	No.	4

```

Respondent's Race/Ethnicity:  Black . . . . . 1
                               White . . . . . 2
                               Mexican-American . . 3

```

[illegible]

TIME	_____	AM
BEGAN:	_____	PM

INTRODUCTION

Hello, Mr./Ms. _____, this is (YOUR NAME) from the National Opinion Research Center. I'm calling from Chicago in connection with a study of school desegregation we are doing in a number of different school systems across the country.

We have been talking to some school people, but we are also interested in talking to a few other knowledgeable people in the community, such as yourself, to get their point of view.

Of course, your responses will be kept completely confidential. In fact, we are not going to mention (NAME OF CITY OR COUNTY) by name in our report. (Our report will be a statistical analysis of what we learn.)

The questions are worded so that you can give a short answer, and they should take less than ten minutes to ask. Please keep in mind that we are particularly interested in your personal opinion about the schools in (NAME OF CITY OR COUNTY).

IF RESPONDENT ASKS:

SAY:

How did you get my name?

We've been talking to a number of people in the community, and your name was mentioned. (We keep all names of people confidential, yours as well as anyone else's, so let me just say again that your name was mentioned as a person knowledgeable about the racial situation in [NAME OF CITY OR COUNTY].)

Who is paying for this?

NORC is conducting this study under contract with U.S. Office of Education. We will publish the statistical report, and probably the director of the study will write some articles in sociological and other learned journals.

First, in order for us to understand what the schools are like now, we need to know what has happened in the past few years.

1. Some southern school districts put up a great deal of resistance to desegregation by appealing decisions, making public statements, etc.. Others made only token resistance.

Thinking back over the past 3 or 4 years, would you say that compared to other southern school systems, (NAME OF SCHOOL DISTRICT) put up a great deal of resistance, a moderate amount, or relatively little resistance?

Great deal (volunteered comments which suggest an unusually great amount of resistance) . . .	1	10/9
Great deal (no volunteered comments)	2	
Moderate	3	
Relatively little	4	

2. How have the local political leaders responded to the desegregation issue in the past few years: Did they strongly oppose desegregation, mildly oppose it, did they not take a stand, or did they support desegregation?

Strongly oppose	1	11/9
Mildly oppose	2	
Took no stand (divided)	3	
Supported	4	

3. What about the white business leaders here--did they strongly oppose desegregation, mildly oppose it, did they not take a stand, or did they support desegregation?

Strongly oppose	1	12/9
Mildly oppose	2	
Took no stand (divided)	3	
Supported	4	

4. Would you say there was a great deal of organized white opposition to desegregation, a moderate amount, or relatively little?

Great deal	1	13/9
Moderate amount	2	
Relatively little	3	

5. In some communities there has been protest about school busing. In others there has not.

Has there been a great deal of protest about school busing in your community, a moderate amount, relatively little, or no protest about busing at all?

Great deal	1	14/9
Moderate amount	2	
Relatively little	3	
No protest about busing	4	
No busing	5	

6. In some places, the black community and its leaders have supported desegregation; in others they have opposed it.

On the whole, would you say that in the past 3 or 4 years, the black community and its leaders in (NAME OF CITY OR COUNTY) have strongly supported desegregation, mildly supported it, or have they opposed desegregation?

Strong support.	1	15/9
Mild support	2	
Some support, some opposition (volunteered)	3	
Neither supported nor opposed (volunteered)	4	
Opposed	5	

7. How much civil rights activity has there been in (NAME OF CITY OR COUNTY) in the past ten years? Would you say a great deal, a moderate amount, or relatively little?

INTERVIEWER NOTE:

CIVIL RIGHTS ACTIVITY CAN

INCLUDE: Committee presenting demands, filing a suit, demonstrations, or anything the respondent wants to consider as civil rights activity.

Great deal 1 16/9
Moderate amount 2
Relatively little (or none) . . . 3

8. In some communities civil rights activity has resulted in trouble--meaning either very bitter feelings, or many arrests, violence on the part of police or demonstrators, or property damage. Has there been, in your judgment a great deal of trouble here in the past decade, some trouble, or almost none?

Great deal 1 17/9
Some 2
Almost none (or none) 3

9. What has been the public position of the school superintendent about desegregation? Has he generally strongly supported desegregation, mildly supported desegregation, has he avoided taking a stand, or has he been opposed to it?

Strongly supported desegregation 1 18/9
Mildly supported desegregation . 2
Avoided taking a stand 3
Opposed desegregation 4

10. What about the present school board members? Has the board as a whole strongly supported desegregation, mildly supported desegregation, has it been divided, or has it avoided taking a stand, or has it been opposed to it?

Strongly supported 1 19/9
Mildly supported 2
Divided 3
Avoided taking a stand 4
Opposed 5

11. In some cities, the community bi-racial committee dealing with school desegregation problems has been very forceful in influencing the way in which desegregation takes place; in other places the bi-racial committee has done almost nothing. Would you say the committee in your community has done a great deal, a moderate amount, or very little?

No committee (volunteered)	4	20/9
A great deal	1	
A moderate amount	2	
Very little	3	

12. How good a job do you feel the school system is doing in educating white and black children now--would you say they are doing a very good job, a pretty good job, a fair job, or a poor job?

Very good job	1	21/9
Pretty good job	2	
Fair job	3	
Poor job	4	

13. How do you think the white community as a whole feels--do you think most whites are very pleased with the schools in (NAME OF CITY OR COUNTY), moderately pleased, or displeased?

Very pleased	1	22/9
Moderately pleased	2	
Displeased	3	

14. How do you think the black community as a whole feels--do you think most blacks are very pleased with the schools in (NAME OF CITY OR COUNTY), moderately pleased, or displeased?

Very pleased	1	23/9
Moderately pleased	2	
Displeased	3	

15. ASK Q. 15 ONLY IF OCCUPATION NOT ALREADY KNOWN (CHECK p.1).

What is your occupation? _____

IF THIS IS THE LAST COMMUNITY INTERVIEW FOR THIS SCHOOL DISTRICT, OMIT Q. 16 AND END INTERVIEW. FILL OUT INTERVIEWER REMARKS ON BOTTOM OF PAGE 8.

16. I have one last question. As you know, we want to talk to several people in the community who are interested in and informed about racial issues, but not school board members. Could you give the names of several such people?

IF RESPONDENT IS BLACK:

- A. For example, who would be a white businessman here in (NAME OF CITY OR COUNTY) whom you think we should talk to?

(NAME OF WHITE BUSINESSMAN)

- B. How do you think we could best reach him?

(NAME OF BUSINESS)

(ADDRESS OF BUSINESS)

- C. Can you think of another white businessman here whom we should talk to?

(NAME OF WHITE BUSINESSMAN)

- D. How do you think we could best reach him?

(NAME OF BUSINESS)

(ADDRESS OF BUSINESS)

- E. Could you think of a prominent white woman here in (NAME OF CITY OR COUNTY), perhaps someone who is involved in the PTA (but not a school board member)?

(NAME OF WHITE WOMAN)

- F. How could she be reached?

(ADDRESS)

IF RESPONDENT IS WHITE:

- A. For example, who would be a prominent Negro (black) businessman here in (NAME OF CITY OR COUNTY) whom you think we should talk to?

(NAME OF BLACK BUSINESSMAN)

- B. How do you think we could best reach him?

(NAME OF BUSINESS)

(ADDRESS OF BUSINESS)

- C. Can you think of another Negro (black) businessman here whom we should talk to?

(NAME OF BLACK BUSINESSMAN)

- D. How do you think we could best reach him?

(NAME OF BUSINESS)

(ADDRESS OF BUSINESS)

- E. Who would be the most prominent Negro (black) lawyer in (NAME OF CITY OR COUNTY)?

(NAME OF BLACK LAWYER)

- F. How could he be reached?

(NAME OF BUSINESS)

(ADDRESS OF BUSINESS)

16. (Continued)

IF RESPONDENT IS BLACK:

G. Can you think of another prominent white woman here whom we should talk to?

(NAME OF WHITE WOMAN)

H. How could she be reached?

(ADDRESS)

IF RESPONDENT IS WHITE:

G. IF NO NEGRO LAWYER, END INTERVIEW.
Can you think of another prominent Negro (black) lawyer here whom we should talk to?

(NAME OF BLACK LAWYER)

H. How could he be reached?

(NAME OF BUSINESS)

(ADDRESS OF BUSINESS)

Thank you very much for your time and interest. You have been most helpful.

TIME	_____	AM
ENDED:	_____	PM

INTERVIEWER REMARKS

INTERVIEWER'S NAME: _____

DATE OF INTERVIEW:

Month	Date	

24-26/

TOTAL LENGTH OF INTERVIEW: _____ minutes

RESPONDENT IS: Businessman 1 27/
 Prominent woman 2
 Lawyer 3
 Other (SPECIFY) 4

RESPONDENT IS: White (Anglo) 1 28/
 Black 2
 Mexican-American 3
 Other (SPECIFY) 4

RESPONDENT IS: Male 1 29/
 Female 2

National Opinion Research Center
University of Chicago

Survey 5038
2/72

SCHOOL OBSERVATION FORM

BEGIN
DECK 5

The questions on this form can be answered in part by the supervisor when she is in the school for the first time. The remainder can be completed by the coordinator when she is in the school on the school survey day. The form should be returned to Chicago with other completed data forms for the school.

SCHOOL DISTRICT: _____

NUMBER

1-3/

SCHOOL NAME: _____

NUMBER

4-5/

1. Please rate the condition of :

	A. The landscaping around the school		B. The physical condition of the classrooms	
Very attractive and well maintained	1	10/9	1	11/9
Well maintained but nothing special	2		2	
Not too well maintained	3		3	
Had been nice once, but very bad condition now	4		4	
Poorly maintained/heavily littered	5		5	
No landscaping at all	6		////////////////////	

2. How many broken windows were there in the school on any single day?

None or very few .	1	12/9
Some	2	
Many	3	

3. Please rate the condition of lockers and/or locker doors.

They look to be generally fine.	1	13/9
A few locker doors are broken .	2	
Many locker doors are broken .	3	
There aren't any lockers . . .	4	

4. Are the water fountains in working order?

Yes	1	14/9
No	2	
There aren't any water fountains . .	3	

5. How many, if any, security officers are at this school? JUST RECORD THE NUMBER OF OFFICERS YOU HAVE SEEN ON ANY ONE DAY.

_____ security officers 15-16/

6. Are there student monitors in the halls?

Yes, while classes are in session .	1	17/9
Yes, between classes	2	
Yes, both of those	3	
No, neither	4	

7. Do students need a pass to be in the hall during the class sessions?

Yes	1	18/9
No	2	

8. A. How many of the following are displayed in the school, either on walls or in show cases, or displayed in some other way? RECORD "0" FOR NONE.

	<u>NUMBER</u>	
(1) Confederate flag	_____	19-20/
(2) (Black/other minority group) cultural symbols	_____	21-22/
(3) Pictures of famous (black/other minority group) people	_____	23-24/
(4) Pictures of famous white people	_____	25-26/

- B. Were any of the following noticeable on walls?

	<table border="1" style="display: inline-table;"><tr><td>Yes</td><td>No</td></tr></table>	Yes	No	
Yes	No			
(1) Art work done by students	1 2	27/9		
(2) Graffiti or profanities	1 2	28/9		
(3) Bulletin board for students to put up announcements	1 2	29/9		

9. Is this school named after a person? ASK SOMEONE IF NECESSARY.

Yes . (ANSWER A & B) .	1	30/9
No	2	

IF YES:

- A. What (was/is) the race or ethnicity of that person?

Black	1	31/9
White	2	
Mexican or Mexican-American	3	
Other (SPECIFY)	4	

- B. What was that person known for?

10. Of the groups of students you observed walking together before, between, or after classes, how many interracial groups were there?

None	1	34/9
One	2	
Two or three . .	3	
Four or more . .	4	

11. Is the pushing in the halls generally of a friendly nature or not?

Generally friendly	1	35/9
Not always friendly, but it doesn't seem to be related to race when it isn't friendly .	2	
It does seem related to race when it is not friendly	3	
Generally not friendly	4	
Too hard to tell	5	

12. How many teachers did you see walking together in the hall with one or more students?

None	1	36/9
One	2	
Two or three teachers . .	3	
Four or more teachers . .	4	

13. Did you see any students talking pleasantly to teachers in their classrooms after class had been formally dismissed?

Many	1	37/9
Some	2	
Just a few	3	
None	4	

14. How much interaction did you observe between teachers of different races--a great deal, some, a little, or none at all?

A great deal	1	38/9
Some	2	
A little	3	
None at all	4	
All teachers are same race race	5	
No opportunity to observe	6	

15. Was the interaction you observed between teachers of different races friendly and natural or stilted?

Friendly and natural	1	39/9
Stilted	2	
All teachers are same race .	3	
No opportunity to observe .	4	

16. Did you ever see the principal walking around the school?

Yes	1	40/9
No	2	

17. Did you ever see the principal talking to a student somewhere other than his office?

Yes	1	41/9
No	2	

18. Does the principal seem to like most of the students, or does he see them mainly as problems?

Likes students	1	42/9
Sees them as problems . .	2	

19. Thinking about all the classrooms you happened to pass, did you see any classes where students appeared to be working together on some sort of group project?

Yes, many	1	43/9
Yes, a few	2	
No, none	3	

20. Do any of the white boys have long hair (collar length or longer)?

Most	1	44/9
Many	2	
A few	3	
Didn't see any white boys . .	4	

21. Do any of the black students have natural (Afro) hairdos?

Most	1	45/9
Many	2	
A few	3	
Didn't see any black students .	4	

22. How about the black teachers, do any of them have natural (Afro) hairdos?

Most	1	46/9
Many	2	
A few	3	
Didn't see any black teachers .	4	

23. FOR ELEMENTARY GRADES ONLY. Observe children at recess. Pick out the largest cluster of children on the playground. Are all the children in that group the same race or ethnic group?

Yes	1	47/9
No	2	

24. Is the atmosphere in the student cafeteria relaxed and friendly, just noisy, or were there tensions or fights?

Relaxed and friendly . . .	1	48/9
Just noisy	2	
Tense	3	
Fights	4	
Could not observe cafeteria at lunch time	5	
No cafeteria	6	

25. Were there any interracial groups sitting together at lunch?

None	1	49/9
One	2	
Two or three	3	
Four or more	4	
Could not observe at lunch time	5	
No cafeteria	6	

26. Would you say that the general atmosphere of the school is tense or relaxed?

Tense	1	50/9
Relaxed	2	
Neither (DESCRIBE)	3	

27. If you had a child of the age of any of the children in this school, is this the kind of school you would like a child of yours to attend?

I'd like it very much	1	51/9
I wouldn't mind, but I wouldn't be thrilled	2	
I would not like it (ANSWER A) . .	3	
I would not allow my child to attend this school (ANSWER A) .	4	

A. Why do you feel that way?

28. TO BE ANSWERED BY WHOEVER INTERVIEWED THE PRINCIPAL IN THIS SCHOOL.

Just your personal opinion--do you feel that the principal of this school is the kind of person you would like to have as a supervisor?

Definitely would . . .	1	54/9
Probably would	2	
Probably wouldn't . . .	3	
Definitely wouldn't . .	4	

Any other comments?

Signature of first observer: _____

Signature of second observer: _____

ERRATA

Several tables in working paper 4 are incorrect due to computational errors. In two cases the errors are large enough to require changes in the text as well. We are enclosing new versions of papers 63, 65, 67, 70, 71, and 72. For your convenience we have printed the changed pages on 8 x 10 $\frac{1}{2}$ paper so it may be inserted over the old pages.

In addition, some other minor errors may be corrected as follows:

p. 62, Table 4.1: change 175 to 174 in the center cell;

change 175 to 166 in the right cell.

p. 68, Table 4.6: change 121 to 120 in the lower left cell;

change 104 to 105 in the upper right cell;

change 120 to 127 in the lower right cell.

p. 79, 3rd line from bottom; the sentence beginning on this line should now read (changed words underlined) For black female the effect of racial composition is monotonic -- they show no loss in schools where a high percentage of students are white.

p 80, Conclusions, 4th line, beginning "There" and ending "grades" should be deleted.