THE EFFECT OF BUSING ON SCHOOL SUCCESS OF
MINORITY STUDENTS IN URBAN ELEMENTARY
SCHOOLS

DISSERTATION

Presented to the Graduate Council of the
North Texas State University in Partial
Fulfillment of the Requirements

For the Degree of

DOCTOR OF EDUCATION

By

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The purposes of this study were (1) to determine whether the mean gains on achievement scores in reading and mathematics for bused students in grades four and five after one year in integrated schools is greater than the mean gain in reading and mathematics achievement scores for similar non-bused students in segregated schools; (2) to determine whether school attendance for bused students is greater than attendance for similar non-bused students; and (3) to determine if attitude toward school, academic self-concept, and general self-concept among groups of subjects are different.

The organization of the study included a statement of the problem, a review of related literature, the methodology used in the statistical analysis of the data, the analysis of the data, the summary, findings, conclusions, and recommendations for additional research.

Two instruments were used to gather information for the study. They were the *Iowa Test of Basic Skills* and a Student Inventory developed by the Research and Evaluation Department of the school
district. The Iowa Test of Basic Skills was administered to fourth- and fifth-grade bused students to obtain information for total reading and mathematics gains. The Student Inventory was administered to compare school attitude, academic self-concept, and general self-concept of ethnic groups in the study. Cumulative records were obtained to record absences for the population. A total of 1,050 bused students were the subjects in the study.

Data from the six hypotheses were tested with the analysis of variance. The t-test was used to determine the level of significance among the three ethnic groups on school attitude, academic self-concept, and general self-concept.

The analysis and interpretation of data yielded the following conclusions.

1. The elements associated with increased achievement in reading for fourth-grade minority students are not likely to be positively facilitated by increasing the majority-minority ratio by busing.

2. The elements associated with increased achievement in reading for minority fifth-grade students may be enhanced by busing for racial balance.

3. The elements associated with increased achievement in mathematics for minority fourth-grade students may be enhanced by busing for racial balance.

4. The elements associated with increased achievement in
mathematics for minority students are not likely to be facilitated by increasing the majority-minority ratio.

5. The busing of minority students out of their neighborhood may be expected to result in a higher rate of absenteeism.

6. At the fourth-grade level, the change of setting in schools, busing, and a more varied student body would not seem to be deeply felt in any racial group's view toward school.

7. At the fifth-grade level the variances brought about by busing seem to be most profoundly felt by the Anglo population insofar as attitude is concerned.

8. At both grade levels the academic self-concept of Anglo students can be expected to be higher than that of minority students.

9. Among the ethnic groups no consistent trend can be predicted on general self-concept. Fourth-grade Anglo and Black students might be expected to have stronger self-concepts than do the Mexican-Americans.

10. Fifth-grade Blacks in integrated schools can be expected to see themselves more positively than do other racial groups.

11. There is a possibility that in terms of attitude toward school, self-concept, and certain achievement areas, the fifth-grade level would be an optimal time to bus for desegregation purposes.

From the findings the following recommendations are made.
1. A longitudinal study should be implemented for the purpose of determining the effects of busing on minorities for an extended period of time.

2. A parallel study should be inaugurated to examine the effects of integration on Anglo students.

3. A study should be implemented to determine the effects of absenteeism on minority students in terms of academic growth.
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CHAPTER I

INTRODUCTION

Few persons would deny that during the past two decades there has been more discussion of school desegregation than of any other issue in American education. Few topics related to education have aroused such widespread attention and controversy as has court ordered busing for quality education and for racial balance (4). Possibly as a result of busing, public interest in education in the United States has risen to unprecedented heights (7).

In 1954, the Brown v. Board of Education decision of the United States Supreme Court presented public schools with the complex problem of achieving racial integration. In Brown v. Board of Education an opportunity was offered to amend the dual school systems that had prevailed in this country (5). The Supreme Court order presented a chance to reduce racial segregation that separate schools had only magnified. The intent of the Supreme Court in ordering the desegregation of the public schools was to provide equal rights and opportunities for all young learners by improving the quality of education (17). Almost a quarter of a century has elapsed
since that landmark decision, and educators are still searching for effective plans of desegregation (10).

Desegregation comes about in many ways. Desegregation may occur naturally in racially mixed neighborhoods, or it may be planned by school boards acting spontaneously, in response to a court order, or to community pressure. Desegregation may be accomplished through the selective closing, redistricting, pairing, or building of schools. Local variations complicate the issue even further. Each community has a unique set of variables affecting desegregation (19). Numerous plans for desegregation have been developed with varying degrees of success.

The schools bear many responsibilities. Among the most important is the teaching of certain basic intellectual skills, such as reading, writing, calculating, and problem-solving. One way of assessing the educational effectiveness of the schools is to measure how well the students perform these tasks. Standardized achievement tests are typically used to measure these skills (8).

An analysis of the academic progress, school attendance, and attitudes of students in an integrated school should help ascertain the effects of desegregation for all students, especially for the bused students. The focus on academic and attitudinal consequences for children should be stressed at the outset. The subject here addressed
is not the constitutional or moral necessity for racial desegregation of schools. The questions to be treated are narrow: Is there an increase in academic achievement? Is there an increase in school attendance? What are the attitudes or perceptions a child has in regard to school, to his desire for education, and to his desire for knowledge?

Statement of the Problem

The problem of the study was an examination of the effects of busing on the achievement, school attendance, academic self-concept, general self-concept, and attitude toward school of students in selected impacted schools.

Purposes of the Study

The purposes of this study were as follows.

1. To determine whether the mean gains on achievement scores in reading for bused students in grades four and five after one year in an impacted school are greater than the mean gains on achievement scores in reading for similar non-bused students in segregated schools for an equivalent time period;

2. To determine whether the mean gains on achievement scores in mathematics for bused students in grades four and five after one year in an impacted school are greater than the mean gains on achievement scores in mathematics for similar non-bused students
in segregated schools for an equivalent time period;

3. To determine whether school attendance for bused students in an impacted school will be greater than school attendance in segregated schools;

4. To assess the attitude toward school of all students in grades four and five in the impacted school;

5. To assess the academic self-concept of all students in grades four and five in the impacted school; and

6. To assess the general self-concept of all students in grades four and five in the impacted school.

Hypotheses

In order to give direction to the purposes stated previously, the following hypothesis were formulated.

1. Students who are bused will achieve significantly greater mean gains on achievement scores in reading after one academic year in the impacted schools than will similar non-bused students for an equivalent period of time in segregated schools as measured by the Iowa Test of Basic Skills.

2. Students who are bused will achieve significantly greater mean gains on achievement scores in mathematics after one academic year in the impacted schools than will similar non-bused students for an equivalent period of time in segregated schools as measured by
the Iowa Test of Basic Skills.

3. School attendance of bused students in the impacted schools will significantly exceed school attendance of similar non-bused students in the segregated schools.

4. There will be no significant differences of school attitude among all students in the impacted schools:
   a. Black as compared with Anglo,
   b. Anglo as compared with Mexican-American, or
   c. Mexican-American as compared with Black.

5. There will be no significant differences of academic self-concept among all students in the impacted schools:
   a. Black as compared with Anglo,
   b. Anglo as compared with Mexican-American, or
   c. Mexican-American as compared with Black.

6. There will be no significant differences in general self-concept among all students in the impacted schools:
   a. Black as compared with Anglo,
   b. Anglo as compared with Mexican-American, or
   c. Mexican-American as compared with Black.

Background and Significance of the Study

School desegregation has been a major social as well as a political movement in the past two decades of the twentieth century.
It is still a source of continued national and local conflict (16).

Desegregation comes about in many ways. It may occur "naturally" in racially mixed neighborhoods, or it may be planned to eliminate de jure or de facto segregation by school boards acting either spontaneously or in response to a court order or community pressure. It may be accomplished through the selective closing or building of schools, through redistricting or pairing, and through transporting students (19).

It is understood that all children of any racial group do not arrive at school equally ready to learn. St. John (19) stated that regardless of the relative contributions to academic aptitude of genes, of home environment, or of the interaction of the two, their joint effect on school progress is powerful. Mitchell, Taba, Katz, and Clark (17) determined that the teacher is perhaps the most important determiner of the quality of education. Coleman (5), however, suggested that variations in the background of children impact to a greater degree on school achievement than do school programs, staff, or facilities. Young (22) wrote that one implication stands out above all: that schools bring little influence to bear on a child's achievement that is independent of his background.
Klineberg (21), Pettigrew (13), and North (13) are among those who write that there is no inherent intellectual inferiority among ethnic groups. Erickson and Jensen (17) are among those who question the innate intellectual capacity of minorities. However, this issue will not be pursued in this study.

The Supreme Court asserted and the literature affirmed that only integration into the main stream of the American educational system will allow minorities the opportunities for normal intellectual development (12).

One writer (13) suggested that integration benefits children differently rather than uniformly, tending to produce good results for those who are already advantaged. With popular acceptance of the Coleman Report, the educational goal of "equality of opportunity" was transformed into a political demand for "equality of educational results" (22). This shift in goals appears to have led directly to the massive transportation programs undertaken in major urban school districts. Eubanks (14) and Levin (12) believed that integrated education can help improve achievement if it is well defined. This conclusion is congruent with the literature that has been reviewed. Although the social and economic background of peers are factors that are particularly hard to control in school desegregation research (2), Coleman (6), and Wilson (14) both found that, next to the influences of a student's own family background,
the strongest influence on his achievement was the family background of his school peers.

In 1965, President Johnson requested the United States Commission on Civil Rights to conduct an investigation into the effects of de facto segregation in the nation and to make recommendations about how it might be remedied (9). The Commission recommendations constitute the most comprehensive policy statement to date on the subject of school desegregation; it is the policy being followed by many state and local school boards throughout the country.

Using data from the Coleman Study and several other original studies prepared for the Commission, the report concluded that Negro children suffer serious harm when their education takes place in public schools which are racially segregated, whatever the source of such segregation may be. Negro children who attend predominantly Negro schools do not achieve as well as other children, Negro and white. Their aspirations are more restricted than those of other children, and they do not have as much confidence that they can influence their own futures. When they become adults, they are less likely to participate in the mainstream of American society, and more likely to fear, dislike, and avoid white Americans. The conclusions drawn by the U.S. Supreme Court about the impact upon children of segregation compelled by law—that it "affects their hearts and minds in ways unlikely ever to be undone"—applied to segregation not compelled by law (5, p. 131).

To remedy this situation, the Commission recommended that the Federal government establish a uniform standard for racial balance and provide financial assistance to states that developed
programs to meet the standards. The Commission did not recommend a precise standard, nor did it specifically recommend that busing be the method whereby integration is accomplished (9).

Given these causes and effect relationships, the elimination of segregation in schools should act as a force for increasing achievement, enhancing self-concept, and enabling minority students to achieve better educational opportunities.

Armor (2), in his findings from a study of Boston's Metropolitan Council for Educational Opportunity (METCO), found that the grade equivalent gains for bused third- and fourth-graders after one year are somewhat greater than those for the non-bused students; his conclusion, however, was that the differences are not significant.

Specific studies tend to reinforce the findings of the general studies that bused students will close the academic gap. Wey (19) failed to discover any teachers or administrators who felt the need to lower standards after desegregation. Matzen (18) found bused children still far behind academically but catching up.

In reviewing the literature on the effects of integration in metropolitan areas, Berkowitz (18) found compensatory programs less effective in producing achievement gains for minority youths in contrast to the effects obtained through busing the students to achieve racial balance. Black students bused to predominantly white schools
in Hartford, Connecticut, significantly out-performed non-bused blacks in de facto segregated schools.

Expectations of recent writers, Armor (2), Coleman (5), and Pettigrew (13), for academic improvement of minority scholastics remain high and are supported by traditional theories that view desegregation as contributing to the aspirations and motivations of bused youngsters. Katz (15) wrote that individuals are responsive to norms of their associates and that children who are accepted by peers tend to accept peer norms more readily.

Estes and Skipper (11), in their Comprehensive Evaluation of the Pacesetter Program, Richardson Independent School District, found that the most apparent trend in analyzing achievement test data was the significant increase in scores from pretest to posttest for Black and white students. The magnitude and consistency of this increase suggested that the school is effective in fostering academic achievement. Examining results of total achievement battery scores revealed that both ethnic groups for grades two through five experience a statistically significant increase in academic achievement. White students tended to be one to two grade levels above their grade placement, whereas Black students tended to be slightly below their grade placement in achievement. Such a difference between scores is a national trend (2).
Much of the literature on the testing of academic achievement among ethnic groups centers around the performance of students in segregated educational facilities. Fewer studies have been reported concerning the educational achievement of various ethnic groups in integrated settings. The social-class level of a student's classmates and his academic performance appear to be related. Several studies have suggested that minority children especially are influenced by the attributes of other children with whom they attend school (1).

Specific studies tend to reinforce the finding that bused students will close the academic gap. This study further investigated the academic gains of bused students.

Definition of Terms

For the purposes of this study, the following definitions were formulated.

**Impacted schools** are schools in which students are bused for racial balance.

**de jure segregation** is segregation that is perpetuated by law (9).

**de facto segregation** is segregation that is brought about by residential housing patterns, that which is not the result of state law or purposeful discrimination by school authorities.
Academic year means the period of time from the administering of the achievement tests in September until the administering of the achievement tests in May.

Self-concept is one's feelings about what he perceives himself to be.

Minority population is the population that has the lowest percentage of members in the ethnic groups under consideration. In this study the minority population is Black and Mexican-American students.

Bused refers to students who are transported from a segregated school to an impacted school because of a court order.

Non-bused refers to students who attend the neighborhood school and are not transported because of a court order.

Limitations

The following limitations were imposed on this study.

1. The population of this study was limited to five selected elementary schools in a large urban school district that became integrated because of a court order for the first time. Therefore, the results of the study cannot be generalized to all integrated schools.

2. Data collection for statistical purposes was limited to a period of one academic year, 1976-1977, for bused students in
impacted schools and one academic year, 1975-1976, for similar non-bused students in segregated schools.

3. The grade levels of the participants were restricted to students in grades four and five.

Basic Assumptions

It was assumed that the subjects would respond honestly and to the best of their ability on the Iowa Test of Basic Skills.

It was assumed that the subjects would respond honestly on the Student Inventory of school attitude, academic self-concept, and general self-concept.

It was assumed that instruction in all five schools followed the standard instructional program that is outlined in the baseline curriculum of the school district.

Instruments

The instruments used were the Iowa Test of Basic Skills, Forms 5 and 6, and the Student Inventory developed by the Research and Evaluation Department of the school district.

The Iowa Test of Basic Skills (ITBS) is published by Houghton Mifflin Company. The skills measured by the ITBS are classified into five major areas: vocabulary, reading, language, work-study, and mathematics. A single comprehensive test is provided in each of
the first two areas. Separate subtests are provided for each of four aspects of language development: spelling, capitalization, punctuation, and usage. Three subtests in the work-study area are concerned with map reading, reading graphs and tables, and knowledge and use of references. In the area of mathematics, separate subtests are provided for mathematics concepts and problem solving.

Three areas of the Student Inventory developed by the Research and Evaluation Department of the school district were used to assess school attitude, academic self-concept, and general self-concept. The School Attitude Scale, the Academic Self-Concept Scale, and the Self-Concept Scale were developed during the 1973-1974 school year by the Research and Evaluation Department of the school district (20).

Procedures for Collecting Data

This study was conducted in a large urban school district in the Southwest. The school district had been ordered by the Federal Court to integrate the schools for racial balance. Five selected schools were used for the study. These schools were selected because they were representative of all schools that received bused students. The students who are bused are transported within a subdistrict or quadrant area of the city. The ethnic ratios are the same in each of the selected schools. None of the
schools was previously all Black. The students who are bused are transported from their neighborhood schools to the impacted schools. All students in grades four, five, and six are transported for racial balance. Both Black and Mexican-American students are bused to the five selected schools. All of the selected schools function under the same administrative policies and procedures, use similar instructional programs in reading and mathematics, and maintain similar classroom organizational patterns. The students received similar instructional programs in reading and mathematics as that received in their previous school.

The primary function of this study was to compare the mean gain of the total reading scores and total mathematics scores of bused students in an impacted school for grades four and five with the mean gain of the total reading scores and total mathematics scores of similar non-bused students in the segregated schools. Similar non-bused students were those students of the bused population who were in segregated schools the previous year. Their achievement scores in the segregated schools, pre and post, were used to determine the reading and mathematics gains in achievement for the year 1975-1976. Thus, the mean gains in reading and mathematics scores of the control group were for the same grade levels and an equivalent time period as those for students in the experimental group. The mean gain scores in the segregated schools were compared with the mean
gain scores in the impacted schools for an equivalent time period one year later.

An analysis was made of school attendance for the same population. The attendance of the similar non-bused students in segregated schools in grades four and five for the year 1975-1976 was compared with the attendance of students in grades four and five in the impacted schools for the year 1976-1977. The general procedure was to ascertain whether school attendance is improved because of busing. School attendance was checked at the same period throughout the school district. A student was considered to be present for the entire day if the student was in attendance when attendance was taken. A student was considered to be absent for the entire day if the student was absent when attendance was taken. The first six-week period of the school year and the fourth six-week period of the school year were not used for the analysis of attendance. It was felt that the first six-week period would not be representative because bus routes were not established and buses were not consistent in picking up the students. The fourth six-week period was omitted because of the weather conditions for this particular time period in 1977. During the 1976-1977 academic year, school was closed because of snow, but during the previous year, 1975-1976, severe, inclement weather would not have been a factor causing a decrease in
For this study 1,050 subjects were included. Three ethnic groups were represented in the study—Anglo, Black, and Mexican-American. There were not enough members of any other ethnic group to be significantly represented in the study.

The Iowa Test of Basic Skills was administered in September of the school year to measure academic growth in terms of grade equivalents. The subtests examined were reading and mathematics. These scores were used to determine the mean gain scores for the previous year. The tests were administered again in May, 1977, as the posttest.

The Student Inventory that was administered in December, 1976, was used to compare the effects of desegregation on school attitude, academic self-concept, and general self-concept of all fourth-grade and fifth-grade students in the impacted schools used in this study. An analysis was made of the findings to compare the three ethnic groups on each variable.

Permission for the research was obtained from the Development Council, which is responsible for investigating the advisability of school district participation in educational programs, in extradistrict research projects initiated or sponsored by individuals or agencies outside the system, or in research projects undertaken by
district employees who wish to conduct the educational programs or research to meet requirements of college or university courses or for other reasons. Individual building administrators were contacted to obtain records so that information could be gathered from individual students' cumulative records. The Research and Evaluation Department of the school district gave access to the data print-outs on the selected schools involved for the analysis of the self-concept measures, school attitude, and academic self-concept as measured by the Student Inventory. Cumulative records were analyzed to determine the extent of attendance. Achievement test data were gathered manually. Each of the 1,050 cumulative records was examined so that achievement test results, pre and post, could be recorded for data analysis using the Computer Center of North Texas State University.

Statistical Treatment

The research hypotheses were evaluated on the basis of the appropriate statistical treatment of the data collected from the pre and post test results for all subjects on the variables: reading and mathematics achievement. The analysis of variance was used for statistical analysis (3).

School attendance was compared on the basis of recorded absences of each subject in the segregated school and recorded absences in the impacted school. One-way analysis of variance
yielded an appropriate statistical analysis for this variable.

Simple comparisons were projected for subparts a, b, and c for the hypotheses dealing with school attitude, academic self-concept, and general self-concept. The analysis of variance was used to determine significant differences.

The decision as to the level of significance below which the hypothesis would be accepted or rejected was arbitrarily set at the .05 level.
CHAPTER BIBLIOGRAPHY


CHAPTER II

REVIEW OF RELATED LITERATURE

A review of the literature was undertaken in order to become familiar with writings and research on the various elements involved in this study. Investigations were reviewed relating to the effect of busing on achievement, school attendance, academic self-concept, general self-concept, and attitude toward school of minority and Anglo students. In this chapter an analysis of the relevant research studies and other pertinent literature is presented in order to provide a basis for this study. Research studies and statements concerning the legal implications of desegregation are presented first. Following this are relevant findings from the literature and research studies concerning academic achievement for bused students. Also included is a review of the limited literature concerning school attendance as it relates to desegregation for racial balance. Finally, data on findings relating to academic self-concept, school attitude, and general self-concept are reviewed.

Integration--Legal Implications

Prior to Brown v. Board of Education, in 1954, the Supreme Court decision Plessy v. Ferguson, in 1896, had been the main source
of legislation for the desegregation of the schools. This decision declared that state laws could sanction separate facilities for Black and white citizens so long as the facilities were equal. Further, such a process was not in violation of the Fourteenth Amendment which guaranteed equal protection of the law for all citizens of the nation. The "separate but equal" facilities became accepted and influenced the organization of American schools for more than half a century. The Supreme Court, in *Plessy v. Ferguson*, recorded some language which sounds different today:

Laws permitting, or even requiring, [the separation of the races] in places where they are liable to be brought into contact do not necessarily imply the inferiority of either race to the other... We consider the underlying fallacy of [the Negro] plaintiff's argument to consist in the assumption that the enforced separating of the two races stamps the colored race with a badge of inferiority (26, p. 98).

This ruling in 1896 by the Supreme Court established a legal precedent which enabled school systems to keep children of different races segregated educationally (13).

The segregation period beginning about 1895 and ending in 1954 was supposed to be an era when "separate but equal" educational opportunities were to be provided to both Black and white citizens. Unquestionably throughout the period the educational facilities and opportunities provided Blacks were grossly inferior compared to those for whites (1, 28).
Several more recent court orders that were concerned with the application of *Plessy v. Ferguson* may be noted. In *Missouri ex rel. Gaines v. Canada*, a Black student sought entry to law school in his home state. The state, in turn, offered to pay his tuition out of state. The Court held this offer to be "a denial of the equality of legal right to the enjoyment of the privilege which the state has set up . . . the provision does not remove the discrimination" (28).

At the University of Oklahoma Law School in 1948 a Black applicant asserted that she was entitled to a legal education. The state contended that local law allowed for provision of a separate law school for Blacks upon demand or notice and that the applicant had not sought such relief (33). The Supreme Court recognized that the petitioner could not be expected to wait for construction of a law school before completing her education. In its decision in the case, *Sipuel v. University of Oklahoma*, the Court stated:

The petitioner is entitled to secure legal education afforded by a State institution. To this time, it has been denied her although during the same period white applicants have been afforded legal education by the State. The state must provide it for her in conformity with the equal protection clause of the Fourteenth Amendment and provide it as soon as it does for applicants of any other group (33, p. 631).

Oklahoma officials tried another strategy with another Black student admitted to a state university graduate school. The student
was provided an education on the "separate but equal basis." He sat in a section of the room designated by a sign reading "Reserved for Colored" (7).

This arrangement did not satisfy the Court. It ruled in *McLaurin v. Oklahoma State Regents* that

The state, in administering the facilities it affords professional and graduate study, sets McLaurin apart from the other students. The result is that the appellant is handicapped in his pursuit of effective graduate instruction. . . . This is a vast difference—a Constitutional difference—between restrictions imposed by the state which prohibit the commingling of students, and the refusal of individuals to commingle where the state presents no bar (24, p. 641).

On the same day, the Court decided in *Sweatt v. Painter* that a new separate law school operated by the State of Texas for Blacks could not, in reality, provide equal protection of the laws. In this case, as well as in *McLaurin*, the Court emphasized the "intangibles" that make an educational institution equal: such qualities include the reputation of the faculty, experience of the administration, position and influence of the alumni, standing in the community, tradition, and prestige (35, p. 629).

Four years after the *McLaurin* decision, the Supreme Court declared that the considerations enumerated in *Sweatt* and in *McLaurin* apply "with added force to children in grade and high schools" (35, p. 629).
On May 17, 1954, the Supreme Court of the United States, in *Brown v. Board of Education*, wrote an end to an era in American education. Before that date the Court had interpreted the Fourteenth Amendment to the Constitution to mean that the several states could educate whites and Blacks separately. A part of the proviso had been that the facilities made available for the purpose were substantially equal. Section I of the Fourteenth Amendment deals with civil rights:

> All persons born or naturalized in the United States, and subject to the jurisdiction thereof, are citizens of the United States and of the state wherein they reside. No state shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States; nor shall any state deprive any person of life, liberty, or property without due process of law; nor deny to any person within its jurisdiction the equal protection of the law (31, p. 794).

The Court based its decision on lack of equal protection, contending that separate schools, by their very nature, could not be equal: "... segregation shuts out equality by its very nature, however alike the school buildings, teachers, and books of both white and Black children" (9, p. 483).

The most decisive words in the history of Black education in America were written on May 17, 1954. The historic words, written by a unanimous U.S. Supreme Court, said that
To separate (Black children) from others of similar age and qualifications solely because of their race generates a feeling of inferiority as to their status in the community that may affect their hearts and minds unlikely ever to be undone. . . . We conclude that in the field of public education the doctrine of "separate but equal" has no place. Separate but equal facilities are inherently unequal (9, p. 483).

These words turned the future of Black public education in America. As might have been predicted, the decision met with the same reaction as had the earlier attempts to equalize educational opportunities. But it was to be a decision with both the force of the Federal government and a supporting group of Blacks and whites behind it.

In 1966 an attempt in the United States House of Representatives to legitimize freedom of choice plans barely failed (7). In a press conference shortly after the issuance of the Swann decision in 1971, President Nixon indicated that the decision which sanctioned the use of busing in remedying de jure segregation, was the law of the land and would be enforced by the executive branch (38).

In 1972, the United States Congress bickered over antibusing amendments to pending legislation, and President Nixon delivered a nationally televised address attacking "massive busing" and announced that he was sending legislation to Congress designed to limit busing. In 1974, President Ford stated at a press conference that he thought the law should be obeyed but then noted that he
had "consistently opposed forced busing to achieve racial balance as a solution to quality education" (36).

Despite the publicity that undermined the desegregation process in communities across the country and the violence in some communities, numerous cities have implemented the law peacefully. Although ignored by politicians and the national press, these communities represent the real story of school desegregation.

Integration and Academic Achievement

How Black and white children perform in mixed classes has assumed increased importance to all sectors of society since the 1954, Brown v. Board of Education, landmark decision of the U.S. Supreme Court. The Supreme Court presented the view that segregated education was inferior. It remained for researchers to study the hypothesis that integration pays off for Black and white children.

Coleman insisted that

School integration . . . is the most convenient mechanism for improving the quality of education of disadvantaged children. Integration alone reduces the existing gap between Black and white children by 30 per cent. All other facts alone do not add up to nearly this much (11, p. 81).

Studies of achievement growth and of scores for verbal abilities indicate clear and consistent differences between measured achievement of Blacks, whites, and other ethnic groups in separate
facilities (5, 14, 18). Some school board members, educators, and other citizens feared that mixing Black students with white students of higher performance would decrease the levels of achievement of the white students. The literature and research do not lend credence to such fears (11, 16).

Witty and Decker (39) tested Black and white children in segregated schools and found common differences in achievement results. They calculated that only 14.5 per cent of the Black children in this sample reached or exceeded the median educational age of the white children in the sample. Wilkerson (37), Farr (16), and Stallings (34) in their research consistently found differences in achievement in segregated schools with the Anglo achievement significantly higher. This disparity varied between school systems and between rural and urban areas. There was little tendency of achievement scores to vary with any subject area.

Integration in Riverside, California, provided a situation which tested the following conclusion of the Coleman report: with the exception of Orientals, achievement of minority pupils as compared with Anglo pupils is more affected by the educational aspirations of other pupils in the schools than by the quality of the school. To quote the Coleman Report on these two conclusions,
... if a white pupil from a home that is strongly and effectively supportive of education is put in a school where most pupils do not come from such homes, his achievement will be little different than if he were in a school composed of others like himself. But if a minority pupil from a home without much educational strength is put with schoolmates with strong educational backgrounds, his achievement is likely to increase (11, p. 183).

and

The average white students' achievement seems to be less affected by strengths or weaknesses of his school's facilities, curriculum, and teachers than is the average minority pupils (11, p. 201).

The integration of Riverside, California (28) provided a natural time-series for testing the expected effects of lateral transmission of peer-group values and normalization of instruction on the achievement of Anglos, Blacks, and Mexican-Americans. After one to three years of integration for the various groups, the results were analyzed by comparison of 1966-1968 post-integration data with 1966 pre-integration cross-sectional data. Analysis of covariance was used to analyze the longitudinal data for primary and intermediate grades. Interpretation of these analyses supported the Coleman report only partially: Anglo achievement was not reduced, but Blacks' and Mexican-Americans' achievement was not improved as a consequence of integration (32).

Four years after the beginning of a program of school desegregation through which pupils of minority background were bused to
schools in predominantly Anglo neighborhoods for desegregation purposes, certain information was reported. The average reading achievement test scores of the bused pupils increased at some grade levels, changed little at others, and decreased at still others. The same trends were evident among the receiving pupils and among pupils attending schools which were not affected by desegregation. Therefore, the changes which occurred are probably due to factors other than desegregation, such as the district-wide effort to improve reading achievement (27).

Desegregation, according to Purl and Dawson (27), seemed to be more beneficial for the higher-achieving minority pupils than for the lower achievers. A comparison of 1968 and 1969 students at the 10th, 25th, 75th, and 90th percentiles on achievement tests revealed that Anglo students at all levels scored higher in 1969. As in the previous year, there was a significant correlation between the average achievement of bused and receiving pupils. That is, pupils bused to schools with high-achieving receiving pupils usually had higher average test scores than did pupils bused to school with low-achieving receiving pupils. Certain school factors seem to have similar effects on the achievement of both the bused and the receiving pupils. It is likely that these factors are the socioeconomic backgrounds of the receiving pupils and classroom effects such as the
instructional program, pupil motivation, and certain supportive programs in the integrated school.

St. John (30) found in her study that the best predictors for achievement performance of students were parent attitude, student attitude, socio-economic status, and length of integration. Wilkerson (37), in his study of the reading achievement of pupils bused to predominantly white schools as compared with the reading achievement of pupils remaining in predominantly Black central city schools, recorded these findings. One or two years of busing for pupils at the fifth- and sixth-grade level has a positive effect on reading achievement scores. His conclusion was based on the findings that the evidence was statistically significant in favor of the bused group. The significant difference between the bused and non-bused group on the basis of reading achievement increased after two years of busing.

Stallings (34), director of the National Assessment of Educational Progress, said,

There have been some strong suggestions made that busing would cause white achievement to go down, but if we look at the data it shows gains both for whites and Blacks as well. What it says about the busing situation is that if busing is bad and causes people trouble, then schools must be doing some good things to offset it. No situation has been found in which Black achievement went up and white achievement went down (34, p. 440).

Pettigrew (25), in his research, stated that children of all backgrounds tend to do better in schools with a predominant Anglo,
middle-class milieu. This trend seems especially true in the later grades when the full force of peer-group influence is felt. Black children from classrooms with 50 per cent Anglo students score higher on both reading and mathematical achievement tests than do Black children in an Anglo population of lower proportions. This effect is strongest among those who began their interracial schooling in the early years. In addition, Black students in classrooms with 50 per cent Anglo students yield higher standard deviations in test scores, as a group, than do minority students in classrooms with fewer whites.

Stallings (34) measured the change in Black and white achievement that occurred after the implementation of integration in Louisville, Kentucky. His findings indicated that the achievement scores of neither the white students nor the Black students suffered during the onset of integration. The tests revealed that there were substantial gains on the part of both races with the Blacks making the larger gains.

Maynor (23), in his investigation of the research in Washington, D.C.; Syracuse, New York; Berkeley, California; and the Educational Improvement Program in Philadelphia consistently found that the Black student gains were significant after integration with no negative effects for the whites.
Eash (15), in his evaluation of the mandated integration of the Forrestville, Illinois, school district, found that all children appeared to benefit both academically and socially from integration. He attributed the success of the mandate to the consistent effort of the administration and teachers to make it work. His evidence suggested that many of the problems associated with integration are, in fact, instructional problems common to most schools whether they are integrated or segregated. The evaluative evidence suggested that all children benefit from the concern for improved classroom instruction that was a consequence of integrating the classroom.

Mahon (22), in his interim report of the Hartford, Connecticut, Project Concern, concluded that Black youngsters who were placed in integrated schools outperformed the subjects who were left in the non-integrated settings. Also, the youngsters transported to integrated schools tended to progress in their school placement, attend regularly, and participate in extra-curricular activities.

Gardner (17), in his research on the effects of busing Black ghetto children into white suburban schools, attempted to answer the following questions: (1) Has the experience changed the self-image of Black or white children? (2) Has the experience affected performance as shown by grades on achievement tests? The author found that Blacks who were bused rated themselves lower on certain variables than did Blacks in Black schools.
A person's self-concept reflects in part his contact with the world around him. A bright child among less bright children will probably rate himself brighter than the same child among others equally bright. This suggests that the bused child taken from a familiar situation in which he was succeeding very well and thrust into a white school may become less sure of his superiority (17, p. 26).

Gardner's (17) findings regarding scholastic performance of the bused students revealed that they performed better than did non-bused students. However, the groups had not been matched in terms of achievement so Gardner did not generalize his findings.

Changes in the relative academic achievement of Black children and white children in Florida over the last thirteen years during which desegregation was taking place were investigated by Beard (5). The availability of achievement data for the entire Black and white population and the thirteen-year time span between observations are seen as principal advantages for this study. Data revealed that the academic achievement gap between Anglo children and Black children was smaller in 1974 than in 1961. The amount of decrease in the gap was stated to be small, yet of practical significance, for the four subject areas examined: reading, vocabulary, mathematical competence, and mathematical problem solving. Of these areas, the decrease in the difference in the Black and white distribution was greater for mathematical computation than for other subtest areas examined. Because of the use of different tests, Beard (5)
did not make any absolute statements about performance levels.

The following table presents a summary of six schools after only one to three years of desegregation. In each study, positive conclusions were formulated concerning the effects of school desegregation upon the academic performance of Black children.

From analysis of the literature and research presented in the preceding portion of this chapter, the success of school desegregation evidently depends on a number of factors. These include the leadership given by state and local officials, the application of the plan to all schools in the community, the measures taken to minimize the possibility of racial friction in the newly desegregated schools, the maintenance or improvement of educational standards, the desegregation of classes within the schools as well as within the schools themselves, and the availability of supportive services for individual students who lag in achievement (28).

It would appear that many of the perceived fears associated with busing are unfounded. A study conducted at the Syracuse University Research Corporation showed that consistently higher scores were recorded by racial minority students who participated in busing programs for sustained periods of time (29). Further, neither the academic performance nor the aspirations of white students
TABLE I
EFFECTS OF BUSING ON ACADEMIC ACHIEVEMENT OF BLACK CHILDREN

<table>
<thead>
<tr>
<th>Place</th>
<th>Grades</th>
<th>Time</th>
<th>Achievement Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goldsboro, N.C.</td>
<td>7-11</td>
<td>2 years</td>
<td>Statistically significant gains in reading; gains in math; gains greatest for high achievers</td>
</tr>
<tr>
<td>Newark-Vernon N.J.</td>
<td>1-2</td>
<td>1 year</td>
<td>Statistically significant greater total achievement gain for desegregated</td>
</tr>
<tr>
<td>Rochester, N.Y.</td>
<td>K-2</td>
<td>3 years</td>
<td>Statistically significant greater verbal, reading, and math gains</td>
</tr>
<tr>
<td>Buffalo, N.Y.</td>
<td>5-7</td>
<td>1 year</td>
<td>Two and one-half months' greater achievement gain for the desegregated</td>
</tr>
<tr>
<td>New York, N.Y.</td>
<td>4</td>
<td>1 year</td>
<td>Statistically significant greater math achievement gains and somewhat greater reading gain</td>
</tr>
<tr>
<td>Philadelphia, Pa.</td>
<td>4-6</td>
<td>1 year</td>
<td>Statistically significant greater reading and somewhat greater math gain</td>
</tr>
</tbody>
</table>

Source: (25, pp. 7-8).

were altered when they were bused to achieve racial integration.

However, it was concluded that the entire matter of busing hinges on the presence or absence of high-quality school services at the end of the ride.
Integration and School Attitude, Academic Self-Concept, and General Self-Concept

Chief Justice Earl Warren, in delivering the opinion of the Supreme Court in Brown v. Board of Education, stressed the psychological, rather than the academic, consequences of school desegregation.

To separate them from others of similar age and qualifications solely because of their race generates a feeling of inferiority as to their status in the community that may affect their hearts and minds in a way unlikely to be undone (9, p. 483).

The Brown decision was supported by a brief signed by thirty-two prominent social scientists and reported an earlier poll indicating that anthropologists, psychologists, and sociologists agree overwhelmingly that enforced segregation has detrimental effects (14).

Armor (2) stated, as a result of his research, that busing fails because it lowers both the aspirations and academic self-concepts of Black children. Two desegregation investigations from Pittsburgh and Evanston found lower Black aspirations combined with better academic achievement. Black ninth graders in Pittsburgh had significantly higher arithmetic achievement and lower educational aspiration scores in desegregated, as compared with segregated, schools (30). Similarly, both Black and white pupils in Evanston's third, fourth, and fifth grades, who had been in predominantly Black schools, reported somewhat lower academic self-concept scores after two
years in predominantly white schools (19, 21).

Individual social scientists also made predictions of the effects of desegregation (2, 3, 12). A number of these were very pessimistic. Three arguments predominated. Those who held basically racist views as to the intelligence or learning styles of Blacks hypothesized that both races would suffer from mixed schools (16). Others expressed concern over the psychic tensions that desegregation was likely to engender for Black children (8). A third anti-desegregation argument has been stressed: that dissipation of the ghetto will result in loss of Black identity and any chance for political effectiveness (36).

That Blacks are inherently different from whites in academic potential or learning style is strenuously rejected by leading sociologists and psychologists (25). Most scholars have assumed that desegregation will expose Blacks to a more stimulating academic environment and thus raise their achievement, self-concept, and academic self-concept. As to the psychological hazards of desegregation for the Black child, psychologists argue, on the one hand, that these have been grossly exaggerated (12) and, on the other hand, that stress will be less severe under desegregation than under continued segregation (3, 20, 21).
The contributions of social science to the understanding of the psychological effects of integration are still unclear. Zukil (40), who reviewed a section of the literature, concluded that

The effects of ethnic group mixture in the schools on the self-concept of students is a subject that has evoked much heat but little light... The seeming lack of consistency, clarity, and completeness in the research findings is no doubt due in large part to a "bewildering array" of definitions, instruments, and research designs (40, p. 213).

In spite of the interest of social scientists in the topic, there have been many fewer empirical studies of the effects of integrated schools on attitudes than of its effects on achievement. Schools have made appraisals of student growth in academic skills but not in self-concept and attitudes.

The major concern of some psychologists at the onset of desegregation was the emotional stress that integrated students might feel. There has been little evidence of serious effect in this regard (1, 4, 10).

Another assumption was that self-esteem of Black students would be low because of integration. Weinberg (36) concluded that "a reasonably conservative assessment would be that there are no appreciable racial differences in self-esteem."

Blake studied levels of aspiration for integrated Blacks. In the integrated schools, Blacks were a minority. He set out to test
three hypotheses.

1. On the average, Negro pupils will have higher levels of aspiration than those of their white counterparts in the integrated schools.
2. There will be a greater variability in the aspirations of the minority group in the segregated school system than in the mixed system.
3. The Negro in the mixed school sample will show a higher level of aspiration than the Negro in segregated school samples (6).

Black students in integrated schools did set higher aspirational goals than did their white counterparts. Black students in the segregated schools did not set a wider range of aspirational levels; they set fewer low aspirational levels than Blacks or whites in integrated schools. Blacks in the integrated schools failed to set higher average aspirational levels than did Blacks in segregated schools (6).

Summary

The benefits of education for Black students are influenced by a number of factors including students' home backgrounds, the quality of education provided in their schools, and the social-class background of their classmates. In addition to these factors, the racial composition of schools appears to be a distinct element. Racial isolation in the schools tends to lower students' achievement, restrict their aspirations, and impair their sense of being able to affect their own destiny.
By contrast, minority students in predominantly white schools more often score higher on achievement tests, develop higher aspirations, and have a firmer sense of control over their destinies.

Differences in performance, attitudes, and aspirations occur most often when Blacks are in majority-white schools. Black children in schools that are majority-Black often fail to do better than Black children in all Black schools. The results from desegregation tend to be more positive for those children who began their attendance at desegregated schools in the earlier elementary grades.

Attendance in racially isolated schools tends to generate attitudes that lead to preference for one's own race. The attitude appears early in the schools and carries over into later life.

Segregation has apparent effects on Black and white children. It can impair their achievement and aspirations. It can foster negative interracial attitudes and further perpetuate isolation.
CHAPTER BIBLIOGRAPHY


CHAPTER III

METHODS AND PROCEDURES

This study focused on the effects on academic achievement that busing students into an impacted school might have in the general area of reading achievement, mathematics achievement, school attendance, school attitude, academic self-concept, and general self-concept. These elements were examined over a period of one year. Data regarding both fourth- and fifth-grade students were gathered and analyzed separately. The methods and procedures of the investigation are subdivided into the following topics: description of the subjects, description of the instruments, collection of the data, and analysis of the data.

The general procedures of this study were to measure the gain in reading achievement and mathematics achievement of bused minority students on a pretest and posttest of the Iowa Test of Basic Skills. The results were compared with those of similar non-bused students' test scores in a segregated school. The school attendance variable was compared on the basis of the number of absences recorded for each student in the impacted school and the number of absences recorded for similar non-bused students in segregated
schools. School attitude, academic self-concept, and general self-concept of all students in the impacted schools were analyzed using data from the Student Inventory. This instrument was developed by the Research and Evaluation Department of the school district.

Description of the Subjects

A total of 1,050 subjects participated in this study. They included fourth- and fifth-grade elementary students who were bused to five selected impacted schools in one quadrant, or subdistrict, of a large urban school district. The school district quadrant from which schools were selected was the one most impacted by busing. All the subjects were minority elementary students who were bused for the first time to achieve racially balanced schools in keeping with a Federal Court Order. Students were bused to schools that were previously segregated because of the neighborhood school concept. Generally, students in grades four through six were assigned to schools in an area of centrality. Transportation distances and time were minimized to the greatest extent possible. The student assignment plan utilized the school subdistrict for assigning students according to ethnic makeup. The racial makeup of each school was to match that of the district as a whole, plus or minus 5 per cent. Such a requirement called for a ratio of 60:40 to 55:45. The actual racial makeup of the schools selected can be seen in Table II.
### TABLE II

**STUDENT MEMBERSHIP IN IMPACTED SCHOOLS**

<table>
<thead>
<tr>
<th>Schools Campus Number</th>
<th>Ethnic Makeup</th>
<th>Total Minority Population</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Anglo</td>
<td>Black</td>
</tr>
<tr>
<td>116</td>
<td>52.3%</td>
<td>38.1%</td>
</tr>
<tr>
<td>120</td>
<td>40.1</td>
<td>18.4</td>
</tr>
<tr>
<td>159</td>
<td>42.2</td>
<td>7.0</td>
</tr>
<tr>
<td>193</td>
<td>40.0</td>
<td>58.8</td>
</tr>
<tr>
<td>195</td>
<td>40.9</td>
<td>23.3</td>
</tr>
</tbody>
</table>

At the time of the study all schools had the same grade-level configuration. Each of the five schools selected had kindergarten through third grade Centers on the same campus, but the impacted levels consisted of grades four, five, and six. The entire population of the fourth-, fifth-, and sixth-grade students who were in segregated schools the previous year (1975-1976) were bused into the impacted schools. In no instances were students bused away from the impacted schools. All subjects bused to the impacted schools were students from Title I segregated schools that received Federal assistance for students eligible under the Title I guidelines. The personnel
allocations, materials, supplies, and equipment appropriate to the Title I schools were utilized in the impacted schools. For example, in their previous segregated school assignments, the students were provided a breakfast program and a lunch program at no cost. The breakfast program and the lunch programs continued for the students after the Court Order. Similar supplementary programs in reading and mathematics that were part of the instructional program in the previous schools were continued in the impacted schools. Many of the teachers who taught in the previously segregated schools were transferred by the Personnel Department of the school district to the impacted schools.

All the schools in the subdistrict operated under the same policies and procedures adopted by the Board of Education, used the same Baseline Curriculum, and maintained similar patterns of classroom organization.

Description of the Instruments

**Academic Achievement (ITBS)**

The *Iowa Test of Basic Skills* was administered to both the control groups and the experimental groups at the beginning and ending of the academic school year. The experimental groups included the fourth- and fifth-grade students in the selected impacted
schools for the academic year 1976-1977; these students had been in a segregated school for the previous academic year 1975-1976. The control groups included similar non-bused fourth- and fifth-grade students who were in segregated schools during the academic year 1975-1976. The scores of fourth graders who took the complete battery in the impacted schools in September of 1976 and April of 1977 were compared with scores of similar non-bused fourth-grade students who were administered the same battery of tests in the segregated schools in September of 1975 and April of 1976. The similar non-bused fourth-grade students in 1975-1976 became the bused fifth-grade students in 1976-1977. Their scores as non-bused fourth-grade students (control group) in 1975-1976 were compared with the scores of bused fourth-grade students (experimental group) in 1976-1977. Similarly, the scores of fifth-grade students who took the complete battery in the impacted schools in September of 1976 and April of 1977 were compared with scores of similar non-bused fifth-grade students who were administered the same battery of tests in the segregated schools in September of 1975 and April of 1976. In this instance, the similar non-bused fifth-grade students in 1975-1976 became the bused sixth-grade students in 1976-1977. Their scores as non-bused fifth-grade students (control group) in 1975-1976 were compared with the scores of bused fifth-grade students
The Iowa Test of Basic Skills was administered to measure academic growth in reading achievement and mathematics achievement. All sections of the test battery were administered, but only the reading scores and mathematics scores were chosen for statistical analysis since the school district had emphasized these specific areas in its Baseline Curriculum. The achievement growth was recorded in terms of grade-equivalent scores. This procedure permitted a statistical comparison of differences.

The Iowa Test of Basic Skills is a multi-level test battery requiring about five hours to administer. A choice of three separate reporting systems is provided with the ITBS: (1) grade-equivalents with percentile ranks in grade; (2) age-equivalents with percentile ranks in age group; and (3) normalized standard scores with percentile ranks in grade (1).

Grade-equivalent scores were used for statistical purposes in this study. The total reading score was used to determine the mean gain in reading scores for one academic year for comparison purposes. The total mathematics scores for the same period of time were used to determine the mean gain in mathematics achievement for one academic year. The ITBS was the only instrument used in the study to assess academic achievement.
Content validity was emphasized in the construction of the ITBS, and the very thoroughness with which it was done is a major strength. The tests are based on a careful definition of skills prior to construction with emphasis placed on item analysis (3). The test yields scores on vocabulary, reading, mathematics, language, and work-study skills. Each subtest has a reliability coefficient of .90 or over (2, p. 383). Norms are based on carefully selected national samples for each grade early in the year, at midyear, and at the end of the year. The test reliabilities are quite high; they range from .70 to .93 for the subtests and from .84 to .96 for the five major tests. The composite reliabilities for the total test range from .97 to .98.

All reviewers in Buros’ Mental Measurement Yearbook, Fifth Edition, highly recommend this battery as a valid measure of achievement.

**Student Inventory Instrument**

Three areas of the Student Inventory developed by the Research and Evaluation Department of the school district were used to assess school attitude, academic self-concept, and general self-concept. The Student Inventory was administered in each of the impacted schools during the first half of December, 1977, following a scheduled time frame.
The School Attitude Scale, the Academic Self-Concept Scale, and the General Self-Concept Scale were developed during the 1973-1974 school year by the Research and Evaluation Department of the school district (4). The instruments consist of two sets of eleven-item, Likert-like statements (to which students indicated agreement or disagreement) arranged in an alternating sequence within a finished test form. The items composing each scale were based upon "item formats" derived from a more theoretical analysis of the behavioral referents of "school attitude" and "self (academic)-concept" as derived from The Piers-Harris Children's Self-Concept Scale (4), upon which the validity of the scales was founded. The Piers-Harris Children's Self-Concept Scale was standardized on 1,183 children in grades four through twelve. The internal consistence of the scale ranges from .78 to .93, and test-retest reliability ranges from .71 to .77. Further statistical verification of the validity of the scales was based upon the relationship among the two sets of items as revealed by principal-component factor analysis of the item responses of students followed by a varimax rotation. The factor structure resulting from this analysis illustrates that the items for each scale tended to group themselves in an expected manner about an "attitude" and "self-concept" vector, respectively. Other factor analyses of similar scales based upon the same underlying formats have been
found to yield similar item relationships. The reliabilities for the School Attitude Scale, as estimated by alpha coefficients obtained from the 350 participating students' performance, were .91 and .95, respectively; those for the Self-Concept Scale, .91 and .94; and those for Academic Self-Concept, .91 and .93.

Collection of the Data

The five schools for this study were identified because of the similarities among the schools and the fact that they were in close proximity to one another in the subdistrict. Each of the schools received bused students from previously segregated schools in grades four, five, and six. The bused population was also from representative types of schools insofar as ethnic breakdown was concerned. Each school from which students were bused was considered an inner-city, minority school. The choice of impacted schools provided sizeable contingents of both Black and Mexican-American students. All of the subjects of the bused population in grades four and five were included in this study.

A proposal to conduct the study was outlined and presented to the school district for permission to collect data and to analyze and interpret the findings. The proposal fully explained and described the study, including the hypotheses to be tested, the population, the data to be collected, a description of instruments to be used, and
the procedures for collecting and analyzing the data. The proposal was reviewed and approved by the Council composed of Heads of Departments in the Development and Operations divisions of the school district. Principals of the selected schools were notified of the approval and were asked to cooperate.

Data on the Iowa Test of Basic Skills were manually recorded for the individual subjects in the study. The appropriate scores on reading and mathematics achievement entered on the permanent records of the students were recorded. The pretest and posttest scores were recorded in order to ascertain the mean gain scores of the subjects in the impacted school for the period indicated and to ascertain the mean gain scores of the subjects in similar schools that were segregated for an equivalent period of time.

Information regarding the absences of the subjects was also recorded. This information on each subject was recorded from the permanent records of each individual subject. The total number of absences for four selected reporting periods was recorded for the subjects in the impacted schools and compared with the total number of absences of similar non-bused students for equivalent reporting periods in the segregated schools.

School attitude, academic self-concept, and general self-concept data were obtained from the Student Inventory. All subjects
were administered this instrument. The scores of all subjects—Anglo, Black, and Mexican-American—in grades four and five were included in the analysis of data.

Analysis of the Data

The variables, reading achievement and mathematics achievement, were evaluated on the basis of the appropriate statistical treatment of the data collected from the pretest and posttest results for all the subjects. Simple analysis of variance was used to test Hypotheses 1 and 2 to determine if there were significant differences between the mean gain scores of bused minority students in the impacted schools and similar non-bused students in segregated schools. The acceptable level of significance was predetermined to be .05.

One-way analysis of variance was used to test Hypothesis 3 to determine the level of significance. The .05 level of significance was arbitrarily determined as an appropriate criterion.

Summary

The purpose of Chapter III was to present the methods and procedures used to conduct the investigation related to this study. A description of the subjects and the description of the instruments and the procedures for collecting and analyzing the data were included.
The study included 1,050 fourth- and fifth-grade, bused, minority students. All subjects were bused from previously segregated schools to schools where the ratio of minority to Anglo population would be 50:40 to 65:35.

Academic achievement in reading and mathematics was measured by the *Iowa Test of Basic Skills*. The Student Inventory provided information to determine school attitude, academic self-concept, and general self-concept of all the students in grades four and five in the impacted schools. School attendance was recorded manually from permanent records for analysis. The one-way analysis of variance was selected as the appropriate statistical design to analyze the data collected.
CHAPTER BIBLIOGRAPHY


CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

The basic purpose of this study was to examine the effects of busing on the achievement, school attendance, academic self-concept, general self-concept, and attitude toward school of bused students in selected impacted elementary schools.

This chapter includes the presentation and interpretation of the analyzed data collected for the purposes of the study. The treatment of data, as described in Chapter III, was done by analyzing the mean gains in reading achievement scores and mathematics achievement scores as measured by the *Iowa Test of Basic Skills*. These data were used to test the first two hypotheses in this study. The Student Inventory provided data which was used to analyze the attitude toward school, academic self-concept, and general self-concept. These data were used to test Hypotheses 4 through 6. Attendance data taken from cumulative records were analyzed to secure absenteeism information. These data were used to test Hypothesis 3.

The simple analysis of variance was used to analyze the scores derived for each variable. The .05 level of significance
was calculated for the rejection or the acceptance of each hypothesis (2, 4).

Presentation and Analysis of Data

Pretest data for mean gains were obtained from the Iowa Test of Basic Skills that was administered for the control group in their previous schools in the fall of 1975 and the spring of 1976. Posttest data for the experimental group mean gains were obtained from the Iowa Test of Basic Skills administered in the fall of 1976 and the spring of 1977. This information was used for the analysis of the reading achievement scores and the mathematics achievement scores for the subjects.

The Student Inventory was used to gather data on the school attitude, academic self-concept, and general self-concept of subjects in the impacted elementary schools. This test was administered in December of 1976 in the selected schools.

Throughout this study, "similar non-bused students" refers to subjects in the segregated schools during the academic year 1975-1976. The term "students in impacted schools" refers to the subjects measured on variables during the academic year 1976-1977 in the schools to which they were bused for racial balance.

There were 512 subjects in the fourth-grade test results for reading achievement and mathematics achievement. These data
were analyzed in terms of Hypotheses 1 and 2. There were 584 subjects in the fifth-grade test results for reading achievement and mathematics achievement. These data were also analyzed in terms of Hypotheses 1 and 2.

Data Relative to Hypothesis 1

Hypothesis 1 stated that students who are bused will achieve significantly greater mean gains on achievement scores in reading after one academic year in the impacted schools than will similar non-bused students for an equivalent period of time in segregated schools as measured by the Iowa Test of Basic Skills. The simple analysis of variance was used to indicate significant variations (7).

The data presented in Table III are the statistics relative to Hypothesis 1

<table>
<thead>
<tr>
<th>Source</th>
<th>Degrees of Freedom</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>1</td>
<td>0.3594</td>
<td>0.3594</td>
<td>0.5498</td>
<td>0.4587</td>
</tr>
<tr>
<td>Within</td>
<td>510</td>
<td>333.3827</td>
<td>0.6537</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>512</td>
<td>333.7422</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The F ratio of 0.5498 is not equal to and does not exceed the required table value of 3.86 for 1 and 510 degrees of freedom required for the .05 level of significance (3, p. 453). Therefore, the hypothesis was rejected.

Data presented in Table IV are the descriptive statistics relative to Hypothesis 1.

**TABLE IV**

DESCRIPTIVE STATISTICS FOR HYPOTHESIS 1: READING ACHIEVEMENT MEAN GAINS-- GRADE FOUR

<table>
<thead>
<tr>
<th>Groups</th>
<th>Mean Gain</th>
<th>Standard Deviations</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impacted</td>
<td>0.50992</td>
<td>0.80745</td>
<td>252</td>
</tr>
<tr>
<td>Similar</td>
<td>0.45692</td>
<td>0.63871</td>
<td>260</td>
</tr>
<tr>
<td>Total</td>
<td>0.48301</td>
<td>0.80816</td>
<td>512</td>
</tr>
</tbody>
</table>

The mean gain scores of the subjects in the impacted schools are quite similar to those of the subjects in similar schools. The mean gain score of the impacted subjects is 0.50, and the mean gain score of the similar non-bused subjects is 0.48. The standard deviations are 0.80 and 0.63 respectively. The mean gain for the subjects in the impacted schools is numerically higher than the
mean gain for the similar non-bused subjects. However, this difference is not significant.

Data presented in Table V are the statistics relative to Hypothesis 1 for fifth-grade students.

TABLE V

SIMPLE ANALYSIS OF VARIANCE FOR HYPOTHESIS 1: READING ACHIEVEMENT MEANS--GRADE FIVE

<table>
<thead>
<tr>
<th>Source</th>
<th>Degrees of Freedom</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>1</td>
<td>4.8897</td>
<td>4.8897</td>
<td>7.4511</td>
<td>0.0065</td>
</tr>
<tr>
<td>Within</td>
<td>582</td>
<td>381.9322</td>
<td>0.6582</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>583</td>
<td>386.8219</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The F ratio of 7.4511 does exceed the required table value of 3.86 for 1 and 582 degrees of freedom at the .05 level of significance (3, p. 453). As may be noted, the probability of 0.0065 indicates that the obtained differences are real.

Data presented in Table VI are the descriptive statistics relative to reading achievement in Grade Five.

There is a significant difference between the mean gain scores of the subject in the impacted schools and the mean gain
TABLE VI

DESCRIPTIVE STATISTICS FOR HYPOTHESIS 1: READING ACHIEVEMENT MEANS--GRADE FIVE

<table>
<thead>
<tr>
<th>Groups</th>
<th>Mean Gain</th>
<th>Standard Deviations</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impacted</td>
<td>0.49202</td>
<td>0.77783</td>
<td>263</td>
</tr>
<tr>
<td>Similar</td>
<td>0.30810</td>
<td>0.83557</td>
<td>321</td>
</tr>
<tr>
<td>Total</td>
<td>0.39092</td>
<td>0.81456</td>
<td>584</td>
</tr>
</tbody>
</table>

score of similar non-bused students in the segregated schools. The mean gain score of the subjects in the impacted school is 0.49, and the mean gain score of the similar non-bused students is 0.31. The standard deviations are 0.78 and 0.83 respectively. Therefore, Hypothesis 1 was retained for fifth-grade students.

Data Relative to Hypothesis 2

Hypothesis 2 stated that students who are bused will achieve significantly greater mean gains on achievement scores in mathematics after one academic year in the impacted schools than will similar non-bused students for an equivalent period of time in segregated schools as measured by the Iowa Test of Basic Skills. The ITBS was the instrument used to measure the mean gain. The simple analysis of variance was used to determine whether a significant difference exists.
Data presented in Table VII are the statistics relative to Hypothesis 2.

### Table VII

**SIMPLE ANALYSIS OF VARIANCE FOR HYPOTHESIS 2: MATHEMATICS ACHIEVEMENT MEAN GAINS--GRADE FOUR**

<table>
<thead>
<tr>
<th>Source</th>
<th>Degrees of Freedom</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>1</td>
<td>1.6935</td>
<td>1.6935</td>
<td>4.2850</td>
<td>0.0390</td>
</tr>
<tr>
<td>Within</td>
<td>510</td>
<td>201.5548</td>
<td>0.3952</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>511</td>
<td>203.2482</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The F-ratio of 4.280 exceeds the required table value of 3.86 for 1 and 510 degrees of freedom at the .05 level (3, p. 455). Therefore, the hypothesis was retained; students who were bused did score greater mean gains on mathematics achievement than did similar non-bused students.

Data presented in Table VIII are the descriptive statistics relative to mathematics achievement in Grade Four.

The mean gains of subjects in the impacted schools and the mean gains of similar non-bused students are significantly different. The mean gain of the subjects in the impacted schools is 0.48, and
the mean gain of similar non-bused students is 0.36. The standard deviations are 0.80 and 0.62 respectively. The mean gain for the subjects in the impacted schools was significantly greater than the mean gain of similar non-bused students.

TABLE VIII

DESCRIPTIVE STATISTICS FOR HYPOTHESIS 2: MATHEMATICS ACHIEVEMENT MEANS--GRADE FOUR

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean Gain</th>
<th>Standard Deviations</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impacted</td>
<td>0.47619</td>
<td>0.80745</td>
<td>252</td>
</tr>
<tr>
<td>Similar</td>
<td>0.36115</td>
<td>0.61875</td>
<td>260</td>
</tr>
<tr>
<td>Total</td>
<td>0.41777</td>
<td>0.63067</td>
<td>512</td>
</tr>
</tbody>
</table>

Data presented in Tables IX and X are the statistics relative to Hypothesis 2 for Grade Five regarding mathematics achievement gains.

The F-ratio of 0.3451 is not significant since it does not exceed the table value of 3.86 for 1 and 582 degrees of freedom required for the .05 level of significance (3, p. 453). Therefore, the hypothesis that mathematics achievement would increase after one year of busing was rejected.
TABLE IX

SIMPLE ANALYSIS OF VARIANCE FOR HYPOTHESIS 2:
MATHEMATICS ACHIEVEMENT MEANS--GRADE FIVE

<table>
<thead>
<tr>
<th>Source</th>
<th>Degrees of Freedom</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>1</td>
<td>0.1558</td>
<td>0.1558</td>
<td>0.3451</td>
<td>0.5571</td>
</tr>
<tr>
<td>Within</td>
<td>582</td>
<td>262.7086</td>
<td>0.4514</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>583</td>
<td>262.8644</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Data presented in Table X are the descriptive statistics relative to Hypothesis 2.

TABLE X

DESCRIPTIVE STATISTICS FOR HYPOTHESIS 2: MATHEMATICS ACHIEVEMENT MEANS--GRADE FIVE

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean Gain</th>
<th>Standard Deviations</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impacted</td>
<td>0.40798</td>
<td>0.61481</td>
<td>263</td>
</tr>
<tr>
<td>Similar</td>
<td>0.44081</td>
<td>0.71518</td>
<td>321</td>
</tr>
<tr>
<td>Total</td>
<td>0.42603</td>
<td>0.67148</td>
<td>584</td>
</tr>
</tbody>
</table>
The mean gain scores of students in impacted schools and those of similar non-bused students are numerically different but not at a level of significance. In this hypothesis, the mean gain score of the students in impacted schools is less than the mean gain score for similar non-bused students in the similar schools. The results of these findings led to rejection of Hypothesis 2 for fifth-grade students.

Data Relative to Hypothesis 3

In Hypothesis 3 it was stated that school attendance of bused students in the impacted schools will significantly exceed school attendance of similar non-bused students in the segregated schools. The simple analysis of variance was used to determine whether a significant difference existed. The mean number of days absent for the subjects is reported.

Data presented in Table XI are the statistics relative to this hypothesis.

The F-ratio of 15.8891 does greatly exceed the table value of 3.86 for 1 and 510 degrees of freedom required at the .05 level of significance (3, p. 455). Therefore, the hypothesis was rejected.

Data presented in Table XII are the descriptive statistics relative to Hypothesis 3.
**TABLE XI**

SIMPLE ANALYSIS OF VARIANCE FOR HYPOTHESIS 3: SCHOOL ABSENCES--GRADE FOUR

<table>
<thead>
<tr>
<th>Source</th>
<th>Degrees of Freedom</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>1</td>
<td>1325.1915</td>
<td>1325.1915</td>
<td>15.8891</td>
<td>0.0001</td>
</tr>
<tr>
<td>Within</td>
<td>510</td>
<td>42535.3378</td>
<td>83.4026</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>511</td>
<td>43860.5293</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**TABLE XII**

DESCRIPTIVE STATISTICS FOR HYPOTHESIS 3: SCHOOL ABSENCES--GRADE FOUR

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean Absences</th>
<th>Standard Deviations</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impacted</td>
<td>10.96032</td>
<td>9.52573</td>
<td>252</td>
</tr>
<tr>
<td>Similar</td>
<td>7.74231</td>
<td>8.73455</td>
<td>260</td>
</tr>
<tr>
<td>Total</td>
<td>9.32617</td>
<td>9.26460</td>
<td></td>
</tr>
</tbody>
</table>

There is a significant difference in the number of absences of fourth-graders at the impacted schools and the number of absences of the similar non-bused group of fourth-graders. The mean of the subjects in the impacted schools is 10.9, and the mean of the similar
group is 7.7. The standard deviations are 9.5 and 8.7 respectively. The F-ratio of 15.8891 is significant at the .0001 level. The number of recorded absences for the subjects in the impacted group exceeds the number of absences for the fourth-grade group in the similar group. Therefore, the hypothesis that school attendance of bused students in the impacted schools will exceed school attendance of similar students was rejected.

Data presented in Table XIII are the statistics for absences for Grade Five.

TABLE XIII

SIMPLE ANALYSIS OF VARIANCE FOR HYPOTHESIS 3: SCHOOL ABSENCES--GRADE FIVE

<table>
<thead>
<tr>
<th>Source</th>
<th>Degrees of Freedom</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>1</td>
<td>520.7902</td>
<td>520.7902</td>
<td>6.173</td>
<td>0.0132</td>
</tr>
<tr>
<td>Within</td>
<td>582</td>
<td>49098.3998</td>
<td>84.3615</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>583</td>
<td>49619.1901</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The F-ratio of 6.173 does exceed the table value required for the .05 level of significance (3, p. 455). Therefore, the hypothesis that school attendance will increase is rejected.
Data presented in Table XIV are the descriptive statistics relative to Hypothesis 3.

### TABLE XIV

**DESCRIPTIVE STATISTICS FOR HYPOTHESIS 3: SCHOOL ABSENCES--GRADE FIVE**

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean Absences</th>
<th>Standard Deviations</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impacted</td>
<td>10.38402</td>
<td>9.36010</td>
<td>263</td>
</tr>
<tr>
<td>Similar</td>
<td>8.48598</td>
<td>9.03884</td>
<td>321</td>
</tr>
<tr>
<td>Total</td>
<td>9.34075</td>
<td>9.22551</td>
<td>584</td>
</tr>
</tbody>
</table>

There is a significant difference in the mean score of the experimental group and the mean score of the control group. The mean of the experimental group is 10.3, and the mean of the control group is 8.5. The F-ratio of 6.1733 is significant and requires the rejection of the hypothesis that school attendance of bused students will exceed the attendance of similar non-bused students in the segregated schools.

**Data Relative to Hypothesis 4, Grade Four**

Hypothesis 4 stated there will be no significant differences of school attitude among all students in the impacted schools.
a. Black as compared with Anglo,
   Anglo as compared with Mexican-American, or
b. Mexican-American as compared with Black.

In each of the tables regarding school attitude, academic self-concept, and general self-concept, a complete analysis will be presented. The findings related to fourth graders will be presented first, followed by the findings relating to fifth graders. The simple analysis of variance was used to determine whether a significant attitudinal difference exists.

Data presented in Table XV are the statistics relative to this hypothesis.

**TABLE XV**

**SIMPLE ANALYSIS OF VARIANCE FOR HYPOTHESIS 4: ATTITUDE TOWARD SCHOOL--GRADE FOUR**

<table>
<thead>
<tr>
<th>Source</th>
<th>Degrees of Freedom</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>2</td>
<td>0.0966</td>
<td>0.0483</td>
<td>0.6481</td>
</tr>
<tr>
<td>Within</td>
<td>542</td>
<td>40.3947</td>
<td>0.0745</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>544</td>
<td>40.4913</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The F-ratio of 0.6481 is not significant at the .05 level. Therefore the hypothesis that there will be no significant differences in school attitude among all students in impacted schools was accepted.

Data presented in Table XVI are the descriptive statistics relative to Hypothesis 4.

**TABLE XVI**

**DESCRIPTIVE STATISTICS FOR HYPOTHESIS 4: ATTITUDE TOWARD SCHOOL--GRADE FOUR**

<table>
<thead>
<tr>
<th>Group</th>
<th>Means</th>
<th>Standard Deviations</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anglo</td>
<td>1.626</td>
<td>0.299</td>
<td>222</td>
</tr>
<tr>
<td>Black</td>
<td>1.630</td>
<td>0.251</td>
<td>175</td>
</tr>
<tr>
<td>M-A</td>
<td>1.658</td>
<td>0.257</td>
<td>147</td>
</tr>
<tr>
<td>Total</td>
<td>1.636</td>
<td>0.273</td>
<td>544</td>
</tr>
</tbody>
</table>

Though no significant differences among mean scores existed, the mean score for Anglo students is slightly lower numerically than those for Black and Mexican-American students. The mean of the Anglo's scores is 1.629, and the standard deviation is .299. The mean of the Black's scores is 1.630, and the standard
deviation is .251. The mean of the Mexican-American's scores is 1.658, and the standard deviation is .257.

Data Relative to Hypothesis 5, Grade Four

Hypothesis 5 stated that there will be no significant differences of academic self-concept among all students in the impacted schools:

a. Black as compared with Anglo,
b. Anglo as compared with Mexican-American, or
c. Mexican-American as compared with Black.

Data were secured from the Student Inventory. The simple analysis of variance was used to determine whether significant variations in academic self-concept existed.

Data presented in Table XVII are the statistics relative to this hypothesis.

The F-ratio of 10.4503 is significant, more than meeting the required 3.02 for 2 and 542 degrees of freedom for significance at the .05 level (3, p. 455). Therefore, Hypothesis 5 which stated that no significant differences in academic self-concept will exist was rejected.

Data presented in Table XVIII are the descriptive statistics relative to this hypothesis.
### TABLE XVII

**SIMPLE ANALYSIS OF VARIANCE FOR HYPOTHESIS 5: ACADEMIC SELF-CONCEPT--GRADE FOUR**

<table>
<thead>
<tr>
<th>Source</th>
<th>Degrees of Freedom</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>2</td>
<td>0.9972</td>
<td>0.4986</td>
<td>10.4503</td>
</tr>
<tr>
<td>Within</td>
<td>542</td>
<td>25.8608</td>
<td>0.0477</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>544</td>
<td>26.8580</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### TABLE XVIII

**DESCRIPTIVE STATISTICS FOR HYPOTHESIS 5: ACADEMIC SELF-CONCEPT--GRADE FOUR**

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>Standard Deviations</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anglo</td>
<td>1.693</td>
<td>0.230</td>
<td>221</td>
</tr>
<tr>
<td>Black</td>
<td>1.605</td>
<td>0.203</td>
<td>176</td>
</tr>
<tr>
<td>M-A</td>
<td>1.606</td>
<td>0.218</td>
<td>147</td>
</tr>
<tr>
<td>Total</td>
<td>1.641</td>
<td>0.222</td>
<td>544</td>
</tr>
</tbody>
</table>

The mean of the Anglo's scores is higher, 1.693, than the mean of the Black's scores, 1.605, and that of the Mexican-Americans, 1.606. The mean scores of the Black and Mexican-
American subjects are similar. The standard deviations were .230 for Anglos, .203 for Blacks, and .218 for Mexican-Americans.

Data Relative to Hypothesis 6, Grade Four

Hypothesis 6 stated that there will be no significant differences in general self-concept among all students in the impacted school:

a. Black as compared with Anglo,
b. Anglo as compared with Mexican-American, or
c. Mexican-American as compared with Black.

Data were secured from the Student Inventory. Analysis of variance was the statistical procedure used to examine the findings for a significant difference in general self-concept.

Data presented in Table XIX are the statistics relative to this hypothesis.

The F-ratio of 10.2311 is significant, exceeding the table value of 3.02 for 2 and 526 degrees of freedom at the .05 level of significance (3, p. 455). Therefore, Hypothesis 6 which stated that there would be no significant differences in general self-concept among the students in the integrated school was rejected.

Data presented in Table XX are the descriptive statistics relative to this hypothesis.
TABLE XIX
SIMPLE ANALYSIS OF VARIANCE FOR HYPOTHESIS 6:
GENERAL SELF-CONCEPT--GRADE FOUR

<table>
<thead>
<tr>
<th>Source</th>
<th>Degrees of Freedom</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>2</td>
<td>0.9099</td>
<td>0.4550</td>
<td>10.2311</td>
</tr>
<tr>
<td>Within</td>
<td>526</td>
<td>23.3903</td>
<td>0.0445</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>528</td>
<td>24,3002</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

TABLE XX
DESCRIPTIVE STATISTICS FOR HYPOTHESIS 6:
GENERAL SELF-CONCEPT--GRADE FOUR

<table>
<thead>
<tr>
<th>Group</th>
<th>Means</th>
<th>Standard Deviations</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anglo</td>
<td>1.640</td>
<td>0.220</td>
<td>219</td>
</tr>
<tr>
<td>Black</td>
<td>1.596</td>
<td>0.212</td>
<td>173</td>
</tr>
<tr>
<td>M-A</td>
<td>1.536</td>
<td>0.192</td>
<td>137</td>
</tr>
<tr>
<td>Total</td>
<td>1.599</td>
<td>0.215</td>
<td>529</td>
</tr>
</tbody>
</table>

The mean scores for the Anglos and the Blacks are statistically higher than the mean scores for the Mexican-Americans.

Since a significant difference does exist for the Anglo and Black
students, the hypothesis that stated that there will be no differences in general self-concept among all students in the impacted schools was rejected.

Data Relative to Hypothesis 4, Grade Five

Tables XXI through XVI reflect the findings regarding the fifth-grade students as measured by the Student Inventory. School attitude, academic self-concept, and general self-concept are the variables measured by the Student Inventory. The information presented will be related to these variables.

Tables XXI and XXII present data relative to Hypothesis 4.

**TABLE XXI**

**SIMPLE ANALYSIS OF VARIANCE FOR HYPOTHESIS 4: ATTITUDE TOWARD SCHOOL--GRADE FIVE**

<table>
<thead>
<tr>
<th>Source</th>
<th>Degrees of Freedom</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>2</td>
<td>0.4977</td>
<td>0.2489</td>
<td>3.3805</td>
</tr>
<tr>
<td>Within</td>
<td>514</td>
<td>37.8373</td>
<td>0.0736</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>516</td>
<td>38.3350</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
In Table XXI the F-ratio of 3.3805 is significant at the .05 level and meets the required table value of 3.02 for 2 and 514 degrees of freedom (3, p. 455). Therefore, the hypothesis that stated there would be no significant difference in school attitude among all students in the impacted schools was rejected.

Data presented in Table XXII are the descriptive statistics relative to Hypothesis 4.

**TABLE XXII**

DESCRIPTIVE STATISTICS FOR HYPOTHESIS 4: ATTITUDE TOWARD SCHOOL--GRADE FIVE

<table>
<thead>
<tr>
<th>Group</th>
<th>Means</th>
<th>Standard Deviations</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anglo</td>
<td>1.573</td>
<td>0.312</td>
<td>186</td>
</tr>
<tr>
<td>Black</td>
<td>1.642</td>
<td>0.239</td>
<td>215</td>
</tr>
<tr>
<td>M-A</td>
<td>1.625</td>
<td>0.256</td>
<td>116</td>
</tr>
<tr>
<td>Total</td>
<td>1.614</td>
<td>0.273</td>
<td>517</td>
</tr>
</tbody>
</table>

There is a significant difference at the fifth-grade level among the mean scores on school attitude. The mean score for Blacks is significantly higher than that for Anglos. The mean scores were 1.573 for Anglos, 1.642 for Blacks, and 1.625 for Mexican-Americans. Since the one difference is significant, the hypothesis was rejected.
Data Relative to Hypothesis 5, Grade Five

The data for Hypothesis 5 related to academic self-concept are presented in Table XXIII.

TABLE XXIII

SIMPLE ANALYSIS OF VARIANCE FOR HYPOTHESIS 5:
ACADEMIC SELF-CONCEPT--GRADE FIVE

<table>
<thead>
<tr>
<th>Source</th>
<th>Degrees of Freedom</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>2</td>
<td>1.5752</td>
<td>0.7876</td>
<td>14.9284</td>
</tr>
<tr>
<td>Within</td>
<td>511</td>
<td>26.9602</td>
<td>0.0528</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>513</td>
<td>28.5354</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The F-ratio of 10.4503 is significant at the .05 level and does meet the required table value of 3.02 for 2 and 511 degrees of freedom at the .05 level of significance (3, p. 455). Therefore Hypothesis 5 which stated that no significant differences in academic self-concept would occur was rejected.

Data presented in Table XIV are the descriptive statistics relative to Hypothesis 5.

A statistically significant difference at the .05 probability level indicated that the academic self-concept of Anglos, mean score
of 1.7, is greater than that of Blacks, mean score of 1.605, and that of Mexican-Americans, mean score of 1.562.

**TABLE XXIV**

**DESCRIPTIVE STATISTICS FOR HYPOTHESIS 5: ACADEMIC SELF-CONCEPT--GRADE FIVE**

<table>
<thead>
<tr>
<th>Group</th>
<th>Means</th>
<th>Standard Deviations</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anglo</td>
<td>1.700</td>
<td>0.256</td>
<td>184</td>
</tr>
<tr>
<td>Black</td>
<td>1.603</td>
<td>0.212</td>
<td>214</td>
</tr>
<tr>
<td>M-A</td>
<td>1.562</td>
<td>0.216</td>
<td>116</td>
</tr>
<tr>
<td>Total</td>
<td>1.629</td>
<td>0.236</td>
<td>514</td>
</tr>
</tbody>
</table>

**Data Relative to Hypothesis 6, Grade Five**

Data presented in Table XXV are the statistics relative to Hypothesis 6 for fifth-grade students.

The F-ratio of 3.17 is significant at the .05 level. Therefore, Hypothesis 6 which stated that there would be no significant difference in general self-concept among the three ethnic groups is rejected.

Data presented in Table XXVI are the descriptive statistics relative to Hypothesis 6.
TABLE XXV

SIMPLE ANALYSIS OF VARIANCE FOR HYPOTHESIS 6:
GENERAL SELF-CONCEPT--GRADE FIVE

<table>
<thead>
<tr>
<th>Source</th>
<th>Degrees of Freedom</th>
<th>Sum of Squares</th>
<th>Mean Squares</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>2</td>
<td>0.2777</td>
<td>0.1388</td>
<td>3.1723</td>
</tr>
<tr>
<td>Within</td>
<td>500</td>
<td>21.8815</td>
<td>0.0438</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>502</td>
<td>22.1592</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

TABLE XXVI

DESCRIPTIVE STATISTICS FOR HYPOTHESIS 6:
GENERAL SELF-CONCEPT--GRADE FIVE

<table>
<thead>
<tr>
<th>Group</th>
<th>Means</th>
<th>Standard Deviations</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anglo</td>
<td>1.618</td>
<td>0.223</td>
<td>181</td>
</tr>
<tr>
<td>Black</td>
<td>1.663</td>
<td>0.210</td>
<td>212</td>
</tr>
<tr>
<td>M-A</td>
<td>1.613</td>
<td>0.183</td>
<td>110</td>
</tr>
<tr>
<td>Total</td>
<td>1.636</td>
<td>0.210</td>
<td>503</td>
</tr>
</tbody>
</table>

Significant differences were found among the general self-concepts of Anglos, Blacks, and Mexican-Americans. The means are 1.618, 1.663, and 1.613, respectively. The analysis indicates
that Black students had significantly higher self-concepts at the fifth-grade level than did either Anglos or Mexican-Americans. Thus, the hypothesis that there would be no differences in general self-concept among all students was rejected.

**Specific Interactions for Hypotheses 4, 5, and 6**

The data presented in Tables XXVII through XXIX are the specific interactions related to school attitude, academic self-concept, and general self-concept as determined by the t-tests (6). This test was used to compare the means of two groups. If the t-test yielded a significant difference, the researcher concluded that the two populations did not have the same mean. This entitled the researcher to draw conclusions relative to the stated hypothesis.

The data in Table XXVII present the differences in school attitude among the ethnic groups. The t-value and appropriate probabilities are given. Only one of the six comparisons among all ethnic groups revealed a measured difference in attitude toward school. The observed probability of 0.013 for Black students who scored higher than Anglo students in fifth grade is significant at better than the .05 level. All other comparisons reflected no significant differences.

In order to distinguish specific differences in academic self-concept, the t-value for two-tailed probability was computed. These
TABLE XXVII

t-TEST OF SPECIFIC INTERACTION AMONG ETHNIC GROUPS FOR SCHOOL ATTITUDES

<table>
<thead>
<tr>
<th>Group Interaction</th>
<th>Mean Score₁</th>
<th>Standard Deviation₁</th>
<th>Mean Score₂</th>
<th>Standard Deviation₂</th>
<th>t Value</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fourth Grade</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anglo₁ X Black₂</td>
<td>1.6264</td>
<td>0.299</td>
<td>1.6296</td>
<td>0.251</td>
<td>-0.11</td>
<td>0.910</td>
</tr>
<tr>
<td>M-A₁ X Black₂</td>
<td>1.6576</td>
<td>0.257</td>
<td>1.6296</td>
<td>0.251</td>
<td>0.99</td>
<td>0.324</td>
</tr>
<tr>
<td>Anglo₁ X M-A₂</td>
<td>1.6264</td>
<td>0.299</td>
<td>1.6576</td>
<td>0.257</td>
<td>-1.04</td>
<td>0.300</td>
</tr>
<tr>
<td><strong>Fifth Grade</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anglo₁ X Black₂</td>
<td>1.5732</td>
<td>0.312</td>
<td>1.6424</td>
<td>0.239</td>
<td>-2.51</td>
<td>0.013</td>
</tr>
<tr>
<td>M-A₁ X Black₂</td>
<td>1.6250</td>
<td>0.256</td>
<td>1.6424</td>
<td>0.239</td>
<td>-0.60</td>
<td>0.549</td>
</tr>
<tr>
<td>Anglo₁ X M-A₂</td>
<td>1.5732</td>
<td>0.312</td>
<td>1.6254</td>
<td>0.254</td>
<td>-1.51</td>
<td>0.132</td>
</tr>
</tbody>
</table>
TABLE XXVIII

*t-TEST OF SPECIFIC INTERACTION AMONG ETHNIC GROUPS FOR ACADEMIC SELF-CONCEPT

<table>
<thead>
<tr>
<th>Group Interaction</th>
<th>Mean Score₁</th>
<th>Standard Deviation₁</th>
<th>Mean Score₂</th>
<th>Standard Deviation₂</th>
<th>t Value</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fourth Grade</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anglo₁ X Black₂</td>
<td>1.6927</td>
<td>0.230</td>
<td>1.6051</td>
<td>0.203</td>
<td>3.97</td>
<td>0.000</td>
</tr>
<tr>
<td>M-A₁ X Black₂</td>
<td>1.6063</td>
<td>0.218</td>
<td>1.6051</td>
<td>0.203</td>
<td>0.05</td>
<td>0.959</td>
</tr>
<tr>
<td>Anglo₁ X M-A₂</td>
<td>1.6927</td>
<td>0.230</td>
<td>1.6063</td>
<td>0.218</td>
<td>3.61</td>
<td>0.000</td>
</tr>
<tr>
<td>Fifth Grade</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anglo₁ X Black₂</td>
<td>1.6998</td>
<td>0.256</td>
<td>1.6035</td>
<td>0.212</td>
<td>4.10</td>
<td>0.000</td>
</tr>
<tr>
<td>M-A₁ X Black₂</td>
<td>1.5624</td>
<td>0.216</td>
<td>1.6035</td>
<td>0.212</td>
<td>-1.67</td>
<td>0.096</td>
</tr>
<tr>
<td>Anglo₁ X M-A₂</td>
<td>1.6998</td>
<td>0.256</td>
<td>1.5624</td>
<td>0.216</td>
<td>4.80</td>
<td>0.000</td>
</tr>
</tbody>
</table>
data can be noted in Table XXVIII. For fourth-grade students, the Anglos revealed higher academic self-concepts that were more positive to a highly significant degree. The observed probability of 0.000 in each case suggests an emphatic difference. For fifth-grade students, the Anglo students revealed academic self-concepts which were more positive to a highly significant degree. The observed probability of 0.000 in each case suggests an emphatic difference.

In order to distinguish specific differences in general self-concept, the $t$ test value for two-tailed probability was computed. These data are noted in Table XXIX. For fourth-grade students, all ethnic groups revealed general self-concept measures which were positive. The observed probability of 0.045 favoring fourth-grade Anglo students over Black students indicates that Anglos have a higher general self-concept at this level. Also, at the fourth-grade level the Anglo students had a much higher general self-concept than did Mexican-American students. Blacks were higher than Mexican-Americans.

Table XXIX revealed that fifth-grade Black students were significantly higher on general self-concept than were either Anglos or Mexican-Americans. Thus, at the fifth-grade level the findings are reversed, to an extent, from those of the fourth grade. Evidently, the Black fifth-grade students have comparatively stronger self-concepts. There were no differences between the Anglo and Mexican-American students.
TABLE XXIX
*t-TEST OF SPECIFIC INTERACTIONS AMONG ETHNIC GROUPS FOR GENERAL SELF-CONCEPT

<table>
<thead>
<tr>
<th>Group Interaction</th>
<th>Mean Score₁</th>
<th>Standard Deviation₁</th>
<th>Mean Score₂</th>
<th>Standard Deviation₂</th>
<th>t Value</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fourth Grade</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anglo₁ X Black₂</td>
<td>1.6402</td>
<td>0.220</td>
<td>1.5958</td>
<td>0.212</td>
<td>-2.01</td>
<td>0.045</td>
</tr>
<tr>
<td>M-A₁ X Black₂</td>
<td>1.5364</td>
<td>0.194</td>
<td>1.5958</td>
<td>0.212</td>
<td>-2.54</td>
<td>0.012</td>
</tr>
<tr>
<td>Anglo₁ X M-A₂</td>
<td>1.6402</td>
<td>0.220</td>
<td>1.5364</td>
<td>0.194</td>
<td>4.53</td>
<td>0.000</td>
</tr>
<tr>
<td>Fifth Grade</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anglo₁ X Black₂</td>
<td>1.6179</td>
<td>0.223</td>
<td>1.6634</td>
<td>0.210</td>
<td>-2.08</td>
<td>0.038</td>
</tr>
<tr>
<td>M-A₁ X Black₂</td>
<td>1.6129</td>
<td>0.183</td>
<td>1.6634</td>
<td>0.210</td>
<td>-2.14</td>
<td>0.033</td>
</tr>
<tr>
<td>Anglo₁ X M-A₂</td>
<td>1.6179</td>
<td>0.223</td>
<td>1.6129</td>
<td>0.183</td>
<td>0.20</td>
<td>0.842</td>
</tr>
</tbody>
</table>
Discussion of Findings

The data on the effects of busing on the achievement of students in selected impacted schools are shown in Tables III through X. In Tables III and IV the measures for reading gains for bused fourth-grade students are shown with the reading gains of similar non-bused students in segregated schools. The analysis is interpreted as indicating no differences.

Reading achievement was ascertained to be significantly different for the fifth-grade subjects, as reflected in Tables V and VI. The data support the hypothesis that reading achievement would increase for bused students in the impacted schools.

The quality of learning which takes place is a direct result of the experiential background of the students. St. John (8) found that the best predictors of reading performance of students were student attitude, parent attitude, length of integration, socio-economic status, and sex. The social class of a student's classmates and the educational background of his family strongly influence his achievement (9, p. 287).

Achievement gains in mathematics for bused fourth-grade students are presented in Tables VII and VIII. There was a significant difference in the achievement gains in mathematics. Therefore, the hypothesis that a difference would occur was accepted. This
was not the case for bused students at the fifth-grade level.

The results presented in Tables IX and X did not reflect a significant difference in means for the fifth-grade bused students in mathematics when compared with similar non-bused students in segregated schools. Therefore, the hypothesis that was retained for the bused fourth-grade students on mathematics gain was rejected for the bused fifth-grade students.

Weeks (10), in the study of the schools in Philadelphia, Pennsylvania, found that busing showed greater gains for minorities after desegregation. St. John (8) determined that the best predictors of mathematics performance were parent attitude, socio-economic status, and student attitude.

The data presented on the absences of bused students are analyzed in Tables XI through XIV. For both the fourth-grade and fifth-grade subjects, there was found to be a significant increase in absenteeism. Therefore, the hypothesis that school attendance would increase was rejected.

In the review of the literature, no studies were found that focused on busing as it relates to attendance. The schools of Lynchburg, Virginia, reported an increase in attendance, but it was not attributed to busing (9).
For the interpretation of the data on school attitude, academic self-concept, and general self-concept, Tables XV through XIX were constructed. Hypotheses IV, V, and VI stated that there would be no significant differences among all the students in the impacted schools on the three variables measured.

From the data presented in Tables XV, XVI, XXI, XXII, and XVII only one difference existed among all the students in regard to their attitude toward school. At the fifth-grade level Blacks had a significant difference in school attitude. Based on this difference, the hypothesis was rejected.

The students who are the major actors in the school desegregation process consistently adjust to school desegregation in a positive manner. While busing is considered an inconvenience by some students, many others view it as a positive and often enjoyable experience (8). If any negative debilitating attitudes toward school exist, it would appear to be among the older Anglo students.

In both fourth and fifth grades Anglo students had much higher academic self-concepts than did Blacks and Mexican-Americans. Tables XVII, XVIII, XXIII, XXIV, and XXVIII present these findings. The hypothesis that no differences would occur was rejected.

Armor (1) concluded that busing fails because it lowers both the aspirations and academic self-concepts of Black children.
Hsia (5) reported that students who had been in predominantly Black schools reported somewhat lower academic self-concept scores after two years in predominantly white schools.

For the analysis of Hypothesis 4, data in Tables XIX, XX, XXV, XXVI, and XXIX reflect these findings. The fourth-grade Anglo students reflected scores that were higher than those for Blacks and Mexican-Americans on general self-concept. Blacks had greater scores than did Mexican-Americans. At the fifth-grade level the Blacks scored higher than the Anglos or Mexican-Americans. It is noteworthy that at both grade levels Mexican-American students were lower in general self-concept than were either Blacks or Anglos. There were significant differences so this hypothesis was rejected.

Student testimony received by the U.S. Commission on Civil Rights indicated that although desegregation initially had been an adjustment, it subsequently proved to be a worthwhile experience. One student described his experiences in this way.

I happen to think that integration was the best thing that ever happened to me. I think it's really taught me to live with a lot of different people. So I think it's done me well and I happen to agree with it (9, p. 138).

Chapter Summary

The reading achievement of fourth-grade bused students is not consistent with earlier research studies of integrated schools,
whereas that of fifth-graders is (5). There is no precedent in the literature summarizing previous studies which serves to provide insight into these contradictory findings. There would appear to be some factor, probably related to maturation, which limits fourth-grade progress but which is minimized in the older fifth-grade students. Although no comparative analysis was made, the general self-concept scores for the fourth-grade bused students would appear to be lower than those for fifth-graders. Some generally lower levels of self-confidence and lack of assurance in the new and different school setting may exist for the fourth-graders.

The reverse results for mathematics achievement are equally puzzling and lacking in precedent. No ready explanation can be given. The researcher holds the reading dichotomy to be more significant, however, in that mathematics instruction received far less emphasis. Instruction time, provision for materials, use of aides, volunteers and tutoring help have been directed at improving reading. The time spent for mathematics instruction has followed the basic guidelines before integration.

The hypothesis of improved school attendance had been projected with some anticipation that a Hawthorne, or novelty type, effect might be induced by busing. That is, meeting in a group, riding the bus, and going into a new and different situation in a more
attractive setting might result in greater anticipation for school. The evidence shows that this did not happen and that what might have been the more logical prediction did happen—decreased school attendance.

Some observations seem in order, however. A subject-by-subject examination of the data on attendance indicates that for the vast majority of bused students, figures for the bused year are much the same as those for the non-bused year with little variations. It was only in the case of those students tending to chronic absenteeism that startling increases were noted. There were recorded instances of absentee rates increasing 400 per cent. Riding the bus and its attendant difficulties, then, would appear to legitimize the inclinations of those already prone to miss school. For the great preponderance of children in the study, however, there is a question as to whether the busing was any deterrent at all to school attendance.

An examination of the results of the data on self-concept reveals that the Black students view themselves in a comparatively positive manner, especially at the fifth-grade level. These findings, along with school attitude, suggest that the aspiration level of the students would also be high. The potential pattern could be one which the student would behave in a manner in which achievement might increase. This process might become cyclical, and success in school
would continue to reinforce his self-image.

It would appear that Black and Mexican-American children in schools may face many obstacles in maintaining a positive self-concept. However, if the positive self-image that the student seems to have at the level obtained in this study continues into later grades, many of the real and the imagined obstacles might be eliminated. It was one major contention in the court decision of 1954 that segregation seemed to wreck the Black child's self-concept. The results of this study imply that the melange of conditions related to busing into impacted schools could have positive effects on minority students.
CHAPTER BIBLIOGRAPHY


CHAPTER V

SUMMARY, FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

This study was undertaken to examine the effects of busing into impacted schools on achievement in reading and mathematics, school attendance, academic self-concept, general self-concept, and attitude toward school of students in selected impacted schools.

This chapter begins with a summary of the methods and procedures used to collect and analyze the data. The findings and conclusions derived from the study, as well as the implications and recommendations suggested by these results, are presented.

Summary of Methods and Procedures Used to Collect and Analyze the Data

Five impacted schools from a large urban school district yielded 1,050 fourth- and fifth-grade elementary students as subjects for this study. The experimental subjects were bused from their previous segregated neighborhood schools to integrated schools in the same quadrant of the school district. They were compared on achievement, attendance, and attitude with similar non-bused students...
in segregated schools. Black and Mexican-American students in grades four, five, and six were bused to the schools that had a previous population of predominantly Anglo students.

Two instruments were used to gather data. The Iowa Test of Basic Skills provided information about reading achievement and mathematics achievement of the subjects. The Student Inventory was used to secure information regarding school attitude, academic self-concept, and general self-concept. The permanent records of each individual subject provided the data on school attendance.

The data collected from the two instruments and the data collected from the permanent records were transposed into a form compatible with computer analysis. Analysis of variance was the statistical treatment applied to analyze the appropriate mean gain scores and mean scores derived for each variable. Separate analyses were made for fourth- and fifth-grade students. The findings were used either to accept or to reject the hypotheses as stated for the study.

Findings

Statistical treatment of the data presented in Chapter IV comprised the basis for the retention or rejection of the stated hypotheses. The hypotheses were rejected or retained based on a .05 probability level. The analyses and interpretation of the data resulted in the following findings.
1. Minority fourth-grade students bused into impacted schools did not make greater mean gains in reading performance than did similar fourth-grade students in segregated neighborhood schools.

2. Minority fifth-grade students bused into an impacted school made greater mean gains in reading achievement than did similar fifth-grade students in segregated neighborhood schools.

3. Minority fourth-grade students bused into an impacted school made greater mean gains in mathematics achievement than did similar non-bused fourth-grade students in segregated neighborhood schools.

4. Minority fifth-grade students bused into an impacted school made no greater mean gains in mathematics achievement than did similar non-bused fifth-grade students in segregated neighborhood schools.

5. The absentee rate of minority fourth-grade and fifth-grade students bused into an impacted school was significantly greater than that of similar non-bused students in segregated neighborhood schools.

6. Fourth-grade minority and Anglo students in impacted schools did not differ in attitude toward school.

7. Fifth-grade Black students in impacted schools had higher attitudes toward school than did their Anglo counterparts. Blacks were higher than Mexican-Americans. Anglos and
Mexican-American students did not differ in their attitude toward school.

8. Among the three ethnic groups, Anglo academic self-concept was shown to be higher than that of Blacks which did not differ significantly from that of Mexican-Americans. These findings were consistent with both fourth- and fifth-grade students.

9. Fourth-grade Anglo students had higher general self-concepts than did Black or Mexican-American students. Black students were significantly higher in general self-concept than were Mexican-Americans.

10. Fifth-grade Black students had higher general self-concepts than did Anglo and Mexican-American students. Anglo and Mexican-American students were not significantly different in general self-concept.

Conclusions

The conclusions in this study are based on the analysis of each hypothesis. However, several factors which were controlled only generally in the study are considered in the interpretation of the data: age and grade for the subjects, their degree of maturation, the socio-economic states of the subject, and other factors in the environment that are objective as well as subjective.
1. The elements associated with increased achievement in reading for fourth-grade minority students are not likely to be positively facilitated by increasing the majority-minority ratio by busing for racial balance.

2. The elements associated with increased achievement in reading for minority fifth-grade students may be enhanced by busing to achieve racial balance.

3. The elements associated with increased achievement in mathematics for minority fourth-grade students may be enhanced by busing for racial balance.

4. The elements associated with increased achievement in mathematics for minority fifth-grade students are not likely to be facilitated by increasing the majority-minority ratio by busing to achieve racial balance.

5. The busing of minority students out of their neighborhood schools might be expected to result in a higher rate of absenteeism.

6. At the fourth-grade level, the change of setting in schools, busing, and a more varied student body would not seem to be deeply felt in the students' general feelings about school.

7. At the fifth-grade level the variances brought about by busing seemed to be most profoundly felt by the Anglo population.
8. At both grade levels the academic self-concept of Anglo students can be expected to be higher than that of minority students.

9. Among the ethnic groups at two grade levels in impacted schools no consistent trend can be predicted on general self-concept. Fourth-grade Anglos and Blacks might be expected to have stronger self-concepts than do Mexican-Americans.

10. Fifth-grade Black students in impacted schools can be expected to see themselves more positively than do other racial groups.

11. There is a possibility that in terms of attitude toward school, self-concept, and certain achievement areas, the fifth-grade level would be an optimal time to bus students for desegregation purposes.

Recommendations

The following recommendations are made on the basis of the findings, conclusions, and personal observations of the study.

1. A longitudinal study should be implemented for the purpose of determining the effects of busing on minority students for an extended period of time.

2. A parallel study should be inaugurated to examine the effects of integration on Anglo students.
3. A study should be implemented to determine the effects of absenteeism on minority students and its effect on academic growth.

4. The findings for the study should be utilized judiciously. The study determined the effects for only one year in a large urban school district desegregated for racial balance.

It would appear, from the findings of the study, that the age, grade level, and developmental level of children may be important factors in the degree of positive effect to be gained from busing for integration purposes. Therefore, additional research dealing with a wider range of age and grade level should be undertaken.
APPENDIX A

APPROVAL LETTER FOR STUDY

May 3, 1977

Mr. Kenneth Thomas
3361 Townsend Drive
Dallas, Texas 75229

Dear Ken:

This letter is simply to confirm the Development Council's approval of your study, "The Effect of Busing on School Success of Minority Students in Urban Elementary Schools." Mr. Otto Fridia will serve as the Dallas Independent School District's coordinator of the study.

Best wishes for continued success.

Sincerely,

/s/ Nolan Estes
Nolan Estes
General Superintendent

NE:fMcW

cc: Mr. Otto Fridia
APPENDIX B

STUDENT INVENTORY

School Attitude Scale

1. Do you like to stay home from school?
   A. Yes       B. No

2. Do most school days seem like they never end?
   A. Yes       B. No

3. Are there many fun things to do at school?
   A. Yes       B. No

4. Would you like to leave school and never return?
   A. Yes       B. No

5. Is school exciting?
   A. Yes       B. No

6. Is it hard for you to stay happy at school?
   A. Yes       B. No

7. Do you look forward to coming to school each morning?
   A. Yes       B. No

8. Do you like having to go to school?
   A. Yes       B. No

9. Are you usually happy when you are in school?
   A. Yes       B. No

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10. Do you often wish you did not have to go to school?
   A. Yes    B. No

11. Do you feel good when you're at school?
    A. Yes    B. No

12. Is school work fairly easy for you?
    A. Yes    B. No

13. Do you often get discouraged in school?
    A. Yes    B. No

*Academic Self-Concept Scale*

1. Can you give a good report in front of the class?
   A. Yes    B. No

2. Do you often have trouble doing assignments?
   A. Yes    B. No

3. Can you get good grades if you want to?
   A. Yes    B. No

4. Are you proud of your schoolwork?
   A. Yes    B. No

5. Do your teachers usually like your schoolwork?
   A. Yes    B. No

6. Do you forget most of what you learn in school?
   A. Yes    B. No
7. Does your schoolwork may you feel that you are not smart enough?
   A. Yes          B. No

8. Are you good in your schoolwork?
   A. Yes          B. No

9. Is it hard for you to talk in front of the class?
   A. Yes          B. No

General Self-Concept Scale

1. A person said, "There's a lot wrong with me." How often do you feel like this?
   A. A lot        B. A little    C. Never

2. Another person said, "I'm not much good at anything." How often do you feel like this?
   A. A lot        B. A little    C. Never

3. Everybody has some things about him or her which are good and some things about him or her which are bad. Are more of the things about you good?
   A. Yes          B. No

4. Another person said, "I am no good." How often do you feel like this?
   A. A lot        B. A little    C. Never

5. How happy are you with the kind of person you are?
   A. Very happy   C. A little happy
   B. Pretty happy D. Not at all happy
6. Another person said, "I think I am no good at all." How often do you feel like this?

A. A lot  B. A little  C. Never
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