A COMPARISON OF ACADEMIC PERFORMANCE AND SELECTED SCHOOL-RELATED ATTITUDES OF BUSED AND NON-BUSED WHITE STUDENTS IN URBAN ELEMENTARY SCHOOLS

DISSERTATION

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By

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This study reports on an investigation of the effects of busing on the academic performance and selected school-related attitudes of white fourth- and fifth-grade students in urban elementary schools. The 900 subjects of this study included 169 fourth-grade bused white students, 298 fourth-grade non-bused white students, 189 fifth-grade bused white students, and 264 fifth-grade non-bused white students, all assigned to desegregated schools.

Four instruments yielding academic achievement and school-related success factor data were administered. One instrument—the *Iowa Test of Basic Skills*—provided information about areas of academic achievement, whereas the other three—the *School Attitude Inventory, Academic Self-Concept Scale*, and the *Intellectual Achievement Responsibility Scale*—provided information regarding areas of the students' affective domain.
The research hypotheses were stated in the null form and grouped according to the achievement and attitudinal variables tested. The analysis of covariance was used to analyze data pertinent to academic achievement. The one-way analysis of variance was used to analyze scores for attitudinal data. Bartlett's chi square was used to insure homogeneity of variance between groups with varying numbers of group members.

The data indicate several broad trends. Compulsorily bused white students achieved, academically and attitudinally, as well as did non-bused white students. Fourth-grade bused white students seem to adjust more readily to the processes of desegregation, although no data are available to support any attempted explanation. Additionally, busing, as a tool of desegregation, is no deterrent to academic achievement of those bused white students and apparently does not endanger the scholastic progress of white students.

Based on the findings of this study, the following conclusions were drawn.

1. When middle-class, white fourth-grade students are bused to desegregated schools similar to their neighborhood schools, they can be expected to sustain positive attitudes about school and self.

2. The achievement made by fourth-grade bused white students in desegregated schools can be anticipated to be equivalent
to the achievement of non-bused white students in desegregated neighborhood schools.

3. When middle-class, white fifth-grade students are bused to desegregated schools similar to their neighborhood schools, they can be expected to sustain positive attitudes about school and self.

4. The achievement made by fifth-grade bused white students in desegregated schools can be anticipated to be equivalent to the achievement of non-bused white students in desegregated neighborhood schools.

5. The effects of busing on middle-class, white fourth- and fifth-grade students transported to environments similar to their former schools appear unrelated to school achievement and attitudinal factors toward school.
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CHAPTER I

INTRODUCTION

For at least two decades, there has been a general consensus among those seeking educational opportunities that schools should be integrated by race. Although some civil rights groups have shifted their demands from desegregation to school improvements, race is still the leading issue. As in past years, the leading public policy question appears to be whether to leave students and school attendance patterns as they are and raise achievement by improving educational quality in the existing school or to desegregate schools and thereby seek to improve educational opportunities for students.

What equal educational opportunity has meant in the past or should mean in the future lacks the clarity of definition to provide for effective achievement of the concept. Still, the law of desegregation implies that the responsibility to create achievement rests with the educational institution (2, p. 16).

In 1896, the U.S. Supreme Court, in upholding the Southern states' "separate but equal" facilities doctrine, endorsed the concept of equality of educational opportunity as providing all children exposure to the same curriculum (2, p. 16). This stage, however,
ended in 1954 when the U.S. Supreme Court, in the Brown v. Board of Education decision, ruled that legal separation by race inherently constitutes inequality of opportunity (2, p. 16); thus, the concept of equality of educational opportunity is focused on the effects of schooling. While educators, almost a quarter of a century after that landmark decision, still search for effective means of desegregation, the courts most frequently mandate busing as the tool to achieve equal educational opportunities for students.

The main fear harbored by white parents concerning desegregation is that educational quality will be reduced. Admittedly, concerns about educational quality do seem widespread. National polls show that one-fourth of the American public believes that the test scores of white students decline sharply in desegregated schools (8, p. 390). The emotionality of the issue combined with the lack of research in this area does little to help separate fact from fallacy and truth from fiction. Are, indeed, the equal educational opportunities for minority students allowing for unequal educational opportunities for white students? Are equal opportunities for minority students minimizing the lack of "availability of equal educational opportunities for individuals by reason of race, color, religion, or national origin in public institutions at all levels" (2, p. 3)?
One further point in regard to the academic consequences of desegregation deserves consideration. Why should only one aspect of school experience--racial mix--be engineered to have a pronounced effect on achievement and, furthermore, on the achievement of one racial group only?

An analysis of the academic progress and attitudes of white students in a desegregated school should help to ascertain the effects of desegregation for white students, particularly those white students who are bused. This study specifically addresses neither the constitutional nor moral necessity for racial desegregation of schools and the subsequent use of busing to achieve this goal, but rather the academic and attitudinal consequences for the white students involved. The question to be treated is, does a difference exist in the educational effects on white students who are bused for desegregation and those students who are not bused?

Statement of the Problem

The problem of the present study was to determine if there was a measurable effect on the scholastic achievement, academic self-concept, attitude toward school, and sense of environmental control of bused white students in selected, impacted elementary schools.
Purposes of the Study

The purposes of the study were (1) to determine if the adjusted mean score in reading achievement, language achievement, work-study skills achievement, mathematics achievement, and composite achievement for fourth- and fifth-grade bused white students after one year in impacted schools will differ from the adjusted mean scores of non-bused white students in impacted schools; and (2) to determine if there is a difference in the academic self-concept, attitude toward school, and sense of environmental control of fourth- and fifth-grade bused and non-bused white students in impacted schools.

Hypotheses

As a basis for implementing the purposes of this study, the following hypotheses were tested.

1. There will be no significant difference in the adjusted mean scores in reading achievement between fourth-grade bused and non-bused white students after one academic year in the impacted schools, as measured by the Iowa Test of Basic Skills.

2. There will be no significant difference in adjusted mean scores in reading achievement between fifth-grade bused and non-bused white students after one academic year in the impacted schools, as measured by the Iowa Test of Basic Skills.
3. There will be no significant difference in adjusted mean scores in language achievement between fourth-grade bused and non-bused white students after one academic year in the impacted schools, as measured by the Iowa Test of Basic Skills.

4. There will be no significant difference in adjusted mean scores in language achievement between fifth-grade bused and non-bused white students after one academic year in the impacted schools, as measured by the Iowa Test of Basic Skills.

5. There will be no significant difference in adjusted mean scores in work-study skills achievement between fourth-grade bused and non-bused white students after one academic year in the impacted schools, as measured by the Iowa Test of Basic Skills.

6. There will be no significant difference in adjusted mean scores in work-study skills achievement between fifth-grade bused and non-bused white students after one academic year in the impacted schools, as measured by the Iowa Test of Basic Skills.

7. There will be no significant difference in adjusted mean scores in mathematics achievement between fourth-grade bused and non-bused white students after one academic year in the impacted schools, as measured by the Iowa Test of Basic Skills.

8. There will be no significant difference in adjusted mean scores in mathematics achievement between fifth-grade bused and
non-bused white students after one academic year in the impacted schools, as measured by the Iowa Test of Basic Skills.

9. There will be no significant difference in adjusted mean scores in composite achievement between fourth-grade bused and non-bused white students after one academic year in the impacted schools, as measured by the Iowa Test of Basic Skills.

10. There will be no significant difference in adjusted mean scores in composite achievement between fifth-grade bused and non-bused white students after one academic year in the impacted schools, as measured by the Iowa Test of Basic Skills.

11. There will be no significant difference in academic self-concept between fourth-grade bused and non-bused white students in the impacted schools, as measured by the Academic Self-Concept Scale.

12. There will be no significant difference in academic self-concept between fifth-grade bused and non-bused white students in the impacted schools, as measured by the Academic Self-Concept Scale.

13. There will be no significant difference in school attitude between fourth-grade bused and non-bused white students in the impacted schools, as measured by the School Attitude Scale.

14. There will be no significant difference in school attitude between fifth-grade bused and non-bused white students
in the impacted schools, as measured by the School Attitude Scale.

15. There will be no significant difference in environmental control attitudes between fourth-grade bused and non-bused white students in the impacted schools, as measured by the Intellectual Achievement Responsibility Scale.

16. There will be no significant difference in environmental control attitudes between fifth-grade bused and non-bused white students in the impacted schools, as measured by the Intellectual Achievement Responsibility Scale.

Background and Significance of the Study

Busing children for desegregation and for the achievement of racial balance has become, in every region of the country, one of the most divisive issues in the public schools within the past five years. There have been extensive school boycotts, sit-ins, picketing, mass meetings, and physical threats to school officials over busing and school redistricting plans that would inevitably lead to busing. The national clamor against busing has become such a generalized catch phrase for a cluster of deeper, more complex societal issues (1, p. 201) that there is a great need for further investigation into the problem so that the effects of desegregation
upon the learning process of black and white children might be better understood.

As previously stated, the U.S. Supreme Court, in its 1896 upholding of the southern states' "separate but equal" facilities doctrine, equated equality of educational opportunities with all children being exposed to the same curriculum (2, p. 16). But this stage ended in 1954 when the U.S. Supreme Court, in the Brown v. Board of Education decision, ruled that legal separation by race inherently constitutes inequality of opportunity (2, p. 16). Thus the concept of equality of opportunity is focused on effects of schooling; however, in 1966, a U.S. Government Report, Equality of Educational Opportunity, concluded that

Schools bring little influence to bear on a child's achievement that is independent of his background and general social context; this very lack of independent effect means that the inequalities imposed on children by their home, neighborhood, and peer environment are carried along to become the inequalities with which they confront adult life at the end of school. For equality of educational opportunity through the schools must imply a strong effect of the schools that is independent of the child's immediate social environment and that strong independent effect is not present in American schools (7, pp. 1-2).

Research on the effect of desegregation has usually focused on minority group students, whereas research on the effect of prejudice has focused on white students (5, p. 40). In the majority of studies (1, p. 245; 5, pp. 24-25), the achievement of white students
is either ignored or else treated as the norm against which black children should be measured (1, p. 246). Desegregation has been viewed by researchers and literature alike as a process intended to benefit the achievement of black children, not that of white children (5, p. 40). It is considered successful if black students' achievement rises but white students' achievement remains stationary; in other words, desegregation is viewed as effectual if the racial gap is reduced (5, p. 40). Should it not be expected, then, that desegregation—if it is effective—would benefit the achievement of all racial groups?

Studies of the effects of busing for desegregation are limited and the findings are frequently inconclusive. In addition, much of the literature on the testing of academic achievement among ethnic groups centers around the performance of minority students. Often, specific studies tend to reinforce the finding that bused minority students will close the academic gap to some degree (9, p. 269); for example, the United States Commission on Civil Rights reported scholastic gains for black children who participated in bused programs in Syracuse, Berkeley, Seattle, and Philadelphia (6, p. 269). Statistics also show that in the Louisville public schools, black students outgained scholastically white students (4, p. 441).
The literature of research on the effects of busing for desegregation for white students is, unfortunately, even more limited and far less conclusive. One commentator has noted that, in general, the most reasonable conclusion to maintain at present is that busing has not had much effect either way on test scores of white students (1, p. 120). Accordingly, the longitudinal data from desegregated school systems--Berkeley, Chapel Hill, Evanston, Goldsboro, Louisville, Riverside, Washington, D.C., and White Plains--indicate in every case that racial mixture in the schools resulted in no negative consequences for majority group students (5, p. 35). Conversely, one study concluded in Queens, New York, determined that white students who were transported to an inner-city school made less academic progress than white students who remained in their neighborhood school (5, p. 36).

The Coleman report (7, p. 14) shows that minority group students in racially integrated schools achieve somewhat better scholastically than do students with similar backgrounds who attend segregated schools; moreover, white students do not suffer academically from moderate integration. Coleman also reported that

Schools are remarkably similar in the effect they have on the achievement of their pupils. The schools do differ, however, in the degree of impact they have on the various racial and ethnic groups. The average white
student's achievement is less affected by the strength and weakness of his school's facilities, curricula, and teachers than is the average minority student's (7, p. 21).

Although there is a lack of investigative reporting available to determine particular sources of threats which affect the widespread feeling against busing for desegregation, the most vocal opponents are found to be middle- and upper-class whites. Massive white resistance to busing as a tool for desegregation has made integration in most urban settings elusive, if not impossible, due to "white flight" and the growing concentration of non-whites in the inner city. Most often the white opponents identify their resistance to such change as fear for their children's safety and fear of scholastic standard loss. If there is, indeed, widespread concern about the deterioration of scholastic standards, investigations must be undertaken to provide relevant facts concerning the impact of desegregation on the quality of education in communities where the change-over has already occurred.

The majority of the literature on the effects of busing among desegregated ethnic groups centers on minority students' academic achievement. The body of investigation tends to support the finding that minority bused students will close the academic gap (1, pp. 245-246; 3, p. 49; 10, p. 25). Also, as previously stated, few studies have been reported on the effects of busing on white students' academic
achievement. Although several studies have suggested that no negative results exist due to the busing of white students (3, p. 73), these same studies have furnished no findings which would provide federal courts with the necessary background on court-ordered busing programs that have improved the educational standards of bused white students. Further investigation is needed regarding court-ordered busing programs for white students to enable the courts to order school desegregation plans that would benefit all students.

Coleman and his associates measured three types of student attitudes relevant to academic motivation: interest in school work, self-concept in relation to academic ability, and sense of control of personal rewards. The report further indicated that for black students, sense of control was influenced little by home factors or schools' educational facilities but rather by the fact that as the proportion of white students' enrollment increased, the black students' sense of internality grew stronger (7, p. 68). Their ideas of self-ability, however, declined proportionately as the white enrollment increased (7, p. 68). In addition, the Coleman report implies that relatively realistic perceptions of one's ability relative to classmates—provided the child possesses a secure awareness of opportunities for social and material reward commensurate with his own efforts and capabilities—can be attained. Further investigation,
though, should be necessarily directed to this observation (7, p. 68).

The results of research which investigated the effects of desegregation on attitudes, self-concept, and sense of environmental control have generally been reported on minority group students, for they constituted the population bused to achieve desegregation. Therefore, little information is available on the attitudes of white students attending desegregated schools (5, p. 34). The present situation of white student reverse busing now makes further investigation a necessity.

The present study investigated the academic achievement, academic self-concept, attitude toward school, and environmental sense of control of bused and non-bused white students in desegregated schools.

Definition of Terms

The following terms are defined for the purposes of this study.

Bused white students refers to white students who are transported from a previously segregated school to an impacted school as a result of a court order.

Non-bused white students refers to white students who attend the desegregated neighborhood school and are not transported as a result of a court order.
Impacted schools are schools in which students are bused to achieve racial balance.

Academic year indicates the period of time ranging from the administration of achievement tests in September until the administration of achievement tests in May of the following calendar year.

Limitations

The following limitations are acknowledged.

1. The population of the study was limited to white students from eleven selected elementary schools in a large, urban school district that had become desegregated for the first time because of a court order.

2. The population of this study was restricted to students currently in grades four and five.

3. Data collection was limited to a period of one academic year.

4. The schools included in this study were never predominantly minority-race schools.

5. The results of this study cannot be applied to another study because the schools involved in this study were not randomly selected.
Basic Assumptions

It was assumed that instruction in all eleven schools followed the standard instructional program outlined in the baseline curriculum of the school district implemented in the 1975-76 academic year. It was also assumed that all instruments were administered as specified in testing directions, with the subjects responding honestly and to the best of their abilities.

Summary

In this chapter, literature and studies were reviewed which indicated a lack of investigation regarding the effects of busing for racial balance on the achievement and attitudes of those white students involved. Other sources suggest the lack of sufficient research available in order to make educational decisions for improvement in desegregated schools. The problem was to measure the effects of busing on the school achievement and attitudes of bused white students in selected elementary schools. Specific purposes, hypotheses, limitations, and assumptions of the study were also presented, as well as the terms which proved essential to the study.
CHAPTER BIBLIOGRAPHY


CHAPTER II

REVIEW OF RELATED LITERATURE

The focus of this study was to measure the effects of mandatory busing on the academic performance and school-related attitudes of white students. In this chapter, research studies and other literature relevant to the present investigation are presented in order to indicate the rationale and background for this present study. Sources describing and defining the concept of equality of educational opportunities, its constitutional interpretation, and judicial implementation processes are reviewed first. Following this are relevant findings from the body of literature which concerns the laws, policies, and problems of busing. Also included are studies which show the effects of busing on academic achievement of students, followed by studies which deal with academic self-concept and achievement responsibility attitudes. A discussion of the significance of the present study concludes the chapter.

The Concept of Educational Opportunity

The concept of "equality of educational opportunity" admits of a varied past. Understandably, equality of educational opportunity through the schools implies a strong effect of the schools that is
independent of the child's immediate social environment (46). James Coleman attacks the basic problems of defining equal educational opportunity. He traces the idea's past meanings and argues that recent social science findings require a new definition of this concept (15). In pre-industrial society, the concept of equality of educational opportunity had no relevance at all, as the family was the unit of economic production and provided the appropriate context in which the child could learn the things he needed to know.

With the coming of the industrial revolution, the family's function as a self-perpetuating economic unit and a training ground no longer existed, and the training which a child received came to be of interest to all members. But the idea of general educational opportunity for all children did not arise until the nineteenth century. The emergence of public, tax-supported education was not solely a function of industrial development, but was also a function of the class structure in American society. Public schools quickly became common schools attended by representatives of all classes (15).

The concept of educational opportunity had, nearly from the beginning, a special meaning to Americans, one which focused on equality of opportunity. This conception implicitly assumes that the existence of free schools eliminates economic sources of inequality of opportunity (15). This soon came to mean public,
tax-supported schools functioning under the control of the state. These institutions were attended by children of all social classes, and all provided a common educational experience (22).

The initial stage in the evolution of the equality of educational opportunity concept in the United States occurred with the decision that all children would be exposed to the same curriculum in the same school. The second stage in this evolutionary process exhibited differences in occupational futures and noted that equality of opportunity required the provision of a different curriculum for each type of student. The third stage appeared in 1896, when the Supreme Court upheld the southern states in "separate but equal" rulings. By adopting the "separate but equal" doctrine, the southern states rejected the assumption that equality depends on the opportunity to attend the same school. The underlying idea admitted that opportunity resides in exposure to a curriculum. But it was evident that even when identical facilities existed for racially separate schools, "equality of educational opportunity" in some sense did not exist (15). Therefore, the fourth evolutionary stage surfaced when the Supreme Court, in 1954, ruled that legal separation by race inherently constitutes inequality of opportunity. At this point, a concept of equality of opportunity, which focused on effects of schooling, began to take form. The actual decision of the Court was, in fact, a
confusion of two unrelated premises (20): the one, a new concept, which considered results of schooling, and the other, a legal premise stating that the use of race as a basis for school assignment violates fundamental freedoms. But what is important is that a new and different assumption was introduced—that equality of opportunity depends on effects of schooling (15).

This decision did not mark the end. Because the decision did not utilize effects of schooling as criteria for judging inequality but only as justification for racial integration, integration itself emerged as the basis for still another new concept of equality of educational opportunity (15).

The Constitutional Right to an Equal Education

The Brown decisions of 1954 and 1955 were concerned with legally required racial segregation in public schools. In the 1954 opinion, the court issued the following statement:

Segregation of white and colored children has a detrimental effect upon colored children. The impact is greater when it has the sanction of the law. Segregation with sanction of the law has a tendency to retard the educational and mental development of Negro children (4, p. 1).

The Court discerned inequality in "separate but equal" facilities not only because of racial imbalance but also because of intangible factors such as "inferiority." In the 1955 Brown
opinion, the Court issued its enforcement decree which embodied the "all deliberate speed" desegregation formula and directed its district courts to

... consider problems related to administration, arising from the physical conditions of the school plant, the school transportation system, personnel, revision of school districts and attendance areas into compact units to achieve a system of determining admission to the public schools on a non-racial basis, and revision of local laws and regulations which may be necessary in solving the foregoing problems. They will also consider the adequacy of any plans the defendants may propose to meet the problems and to effectuate a transition to a racially non-discriminatory school system (4, p. 2).

In Brown I, the Supreme Court declared, "Such an opportunity (equality of education), where the state has undertaken to provide it, is the right which must be made available to all on equal terms" (22, p. 51). In Brown II, the Court identified the "fundamental principle" enunciated in Brown I as being the unconstitutionality of "racial discrimination in public education" (22, p. 51). This language meant that the school authorities must implement their decisions to provide integrated schools.

In 1964, under a mandate in the Civil Rights Act to the Commissioner of Education to assess the "lack of equality of educational opportunity" among racial and other groups in the United States, the Office of Education carried out the Survey of Equality of Educational Opportunity. The report publicized what had been
underlying all the ideas of educational opportunity equality: that the
concept itself implied effective equality of opportunity, that is,
equality in those elements that are effective for learning. The con-
cept, then, became one degree closer to an equality of opportu-
ity that is determined not merely by the equality of educational inputs,
but by the intensity of the school's influences relative to the external
divergent influences, community as well as home (15). The impli-
cation is that the responsibility to create achievement lies with the
educational institution, not the child (22). The school's responsibil-
ity is shifted from increasing and distributing equally its "quality"
to increasing the quality of its students' achievement. For a school
system to have provided equal educational opportunity, the results of
its educational program in terms of achievement must be equal for all
racial and social groups (14).

The Equality of Educational Opportunity Report concluded:

. . . a pupil's achievement is strongly related to the
educational backgrounds and aspirations of the other
students in the school. . . (46, p. 22).

It also pointed out that

. . . the higher achievement of all racial and ethnic
groups in schools with greater proportions of white stud-
ents is largely, perhaps wholly, related to effects asso-
ciated with the student body's educational background
and aspirations. . . (46, p. 310).
In 1966, in an article entitled "Equal Schools or Equal Students?" Coleman concluded:

Equality of educational opportunity implies, not merely equal schools, but equally effective schools, whose influences will overcome the differences in starting points of children from different social groups. Complete equality of opportunity can be reached only if all the divergent out-of-school influences vanish . . . given the existing divergent influences, equality of opportunity can only be approached and never fully reached. . . (5, p. 72).

In late December, 1966, the United States Court of Appeals found the Civil Rights Act of 1964 to be a "congressional alternative" to judicially enforced desegregation. Speaking for the court in the December opinion, Judge John Minor Wisdom had found federal policy to require formerly de jure segregated public schools based on dual attendance zones to shift to unitary, non-racial systems (4). By enforcing the guidelines, the courts did not abdicate any judicial power. By this time, Congress recognized that the pace of judicially supervised desegregation had been too slow and had passed Title VI to the Civil Rights Act of 1964 to mandate a change; courts were required to cooperate with the executive branch to implement congressionally-declared policy. The court proceeded to find that the guidelines were a sound restatement of judicial standards for desegregation (4).
In a cluster of cases headed by *U.S. v. Jefferson County* Board of Education, the Court of Appeals for the Fifth Circuit ruled, in 1967, that district courts must prescribe a desegregation pace that is at least as rapid as that set by the Health, Education, and Welfare Department of the United States Government (4). Far from barring integration, the Civil Rights Act of 1964, as interpreted by the United States Court of Appeals in *Jefferson*, demanded it. The court found the language to be applicable to racial imbalance and not to *de jure* segregated schools. The court concluded by finding that the guidelines did not require so-called cross busing (exchanging whites for blacks) and that the references to percentages was a "general rule of thumb or objective administrative guide for measuring progress in desegregation rather than a firm requirement that must be met . . ." (4, p. 10).

The Civil Rights Act defined segregation in a way that distinguishes it from racial imbalance:

Desegregation means the assignment of students to public schools and within such schools without regard to their race, color, religion, or national origin but "desegregation" shall not mean the assignment of students to public schools in order to overcome racial imbalance (4, p. 57).

Accordingly, in the findings of a commissioned extensive survey of the Washington, D.C., schools in 1967, it was reported "the schools must furnish unequal education . . . to provide equal opportunity. . ."
The Laws, Policies, and Problems of Busing

A flood of court cases followed the Brown decisions, and most of these were concerned with the implementation and the securing of compliance with that decision. In securing compliance with the Brown decision, courts have exercised broad control over the organization, administration, and programs of the public schools, including the power to order busing to achieve racial balance (22).

The Swann v. Charlotte-Mecklenberg Board of Education decision in 1971, which authorized compulsory busing for elimination of dual school systems, stated,

The constant theme and thrust of every holding from Brown I to date is that state-enforced separation of races in public schools is a discrimination that violates the equal protection clause. The remedy commanded was to dismantle dual school systems (22, p. 26).

The primary issue raised by the Swann litigation was whether or not the busing of children is constitutionally permissible, or even constitutionally required. The ruling that emerged from the Court's opinion stated that busing is not an impermissible tool of school desegregation (4).

In most urban settings, integration has proved elusive, if not impossible. The failure to achieve integration to any significant extent was due first to massive white resistance. It is now even less
likely to occur because of growing concentration of blacks and other nonwhite minorities in the inner-city area (15).

The feared consequences of desegregation most frequently articulated by white parents are that integration will destroy the concept of neighborhood schools and will require the busing of children for long distances. The values of neighborhood and proximity, of course, are relative (22). Thus, the issue is not whether small neighborhood schools are good or busing is bad, per se, but whether the interests of the children will be served by particular proposals or solutions. Will white children be held back by being placed in classes with children of other, less advantaged backgrounds? Will an education provided at a cross-town school be as good as, or better than, an education the children would receive in neighborhood schools?

The single most disruptive element in education today is the widespread use of compulsory transportation, especially at elementary grade levels (22). Equality of educational opportunities has been enforced by the courts in school desegregation cases as a constitutional right, which must be made available to all pupils on equal terms. The courts, in requiring such a remedy as student transportation solely to maximize integration, have set in motion unpredictable and unmanageable social consequences (21).
For most Americans, the school bus was at one time a symbol of hope for a better education. In many communities today, it has become a symbol of the helplessness, frustration, and outrage of wrenching children away from their families and from schools their families may have planned to be near, and sending them arbitrarily to distant schools (22). The school bus has become, then, a symbol of social engineering on the basis of abstractions, with too little regard being paid to the desires and the feelings of those most directly concerned--the children and their families (22).

The fact that nearly twenty million pupils in the United States are currently being transported to school by buses at public expense for reasons other than desegregation shows that, when racial mixing is not an issue, white parents recognize that neighborhood schools are not sacred and that busing does not harm children (34). But when the issue involved is racial desegregation, whites of all backgrounds become very defensive of the neighborhood school (43).

In larger cities, efforts to achieve desegregation have been fragmentary, and recent efforts show that resegregation and "white flight" often results (6). However, parents of bused white students have reported that their children have, at times, benefited from the experience (24, 34, 43); administrators and teachers have described positive educational results as well (43).
While public attention has been focused upon the more dramatic controversies, many small cities and suburban communities have quietly desegregated their schools (24). In most cases, the conclusion has been that advantaged children have not suffered from educational exposure to others not as fortunate, and that the results have been of benefit to all children, white and black alike (23).

In regard to education, the civil rights groups focused on the elimination of the separate schools that whites and blacks were required by law to attend. Busing was a new dimension for the civil rights struggle, since a court order requiring busing called upon the public authorities not only to refrain from discrimination but to exert themselves positively to provide equal education (4). Busing has since become the political battleground of American race relations in the 1970's. The movement, ostensibly against busing, has been forming over the past five years; it gained momentum once federal judges in a number of big cities ordered busing to correct widespread urban patterns of school segregation by race in situations where other alternatives were not available (31).

The opponents of busing to achieve desegregation advance the same arguments used by desegregation proponents; that is, busing is a process to aid blacks, showing that every black gain
implies a corresponding white loss:

1. Desegregation implies a more equitable distribution of resources between the advantaged and the disadvantaged. If this raises the achievement of the disadvantaged, it may lower the achievement of the advantaged (24, p. 103);
2. Desegregation implies that teachers will adapt their expectations to a new and more heterogeneous group of students which are more likely to be lower than if they were dealing exclusively with advantaged students (24, p. 103);
3. If desegregation leads to social integration, advantaged students will spend more time with disadvantaged students and less time with students who are likely to teach them the cognitive skills measured by standardized tests (24, p. 103);
4. If desegregation raises the self esteem of disadvantaged students, it may also lower the self esteem of advantaged students (25, p. 103).

The resistance to busing has crystallized around two issues:

(1) busing promotes white flight, destroys the cities, jeopardizes the fiscal base of school systems, defeats the attempt at desegregation; and

(2) busing does not increase the quality of education and may very well be detrimental to it (1, 2, 6, 15, 29).

While the Supreme Court, educational planners, and social science critics of busing have upheld the use of mandatory busing in the transitional period of dismantling de jure segregation, some commentators, such as Jencks, Armor, and Glaser, have been opposed to compulsory busing to overcome de facto segregated school conditions (4). Two published research articles in recent years have contributed to this reinforcement of white resistance.
In 1972, Armor presented a paper entitled "The Effects of Busing," later altered to "The Evidence of Busing," in which he concludes that "massive mandatory busing for purposes of improving students' achievement and interracial harmony is not effective and should not be adopted at this time" (1, p. 123). Armor's article, however, makes no attempt to review all existing evidence on "busing" as the title implies. Instead, the reader is informed of only a small number of studies which held an apparent bias of few positive effects (31).

In 1973, Pettigrew discerned that Armor had omitted at least seven key desegregation investigations, all of which reached conclusions in conflict with those of his paper (31). All seven reach positive conclusions concerning the effects of school desegregation through busing on the academic performance of black children; moreover, none of them found that the process lowered white academic performance (31).

The fundamental fact that the U.S. District Court's interpretation of the Fourteenth Amendment of the U.S. Constitution ultimately governs the racial desegregation of the public schools and court-ordered transportation was dramatically demonstrated by judicial reaction to Armor's deposition in the Detroit School case, a deposition based on an earlier draft of "The Evidence of Busing." On
June 12, 1972, U.S. District Court Judge Stephen H. Roth ruled the deposition inadmissible as evidence on the grounds of irrelevancy. The deposition, in Judge Roth's view, represented "... a new rationale for a return to the discredited 'separate but equal' policy. . ." (31, p. 16).

A second piece of research appeared in the October, 1975, issue of Phi Delta Kappan, in an article entitled "Racial Segregation in the Schools: New Research with New Policy Implications." Here, Coleman presented the findings of his most recent research on school desegregation and white flight (6, 7, 9, 34). He reports his findings on trends in segregation within schools, trends in segregation among or between school systems, and white flight from central city school districts (34). Coleman found that as of 1973, de jure segregation had largely been eliminated, leaving only de facto segregation. He asserts that "once equal protection is assured, then school desegregation must be justified in terms of its consequences" (6, p. 77).

According to Coleman, the issue that surrounds busing is whether it is proper or necessary to require the elimination of school segregation which arises from individual actions without asking what the policy accomplishes and what is the agency which may properly make a decision concerning future action about this
form of desegregation (6). The remedy prescribed—compulsory transportation of students—places the major burden of the remedial action not on the offending state officials or school authorities but upon the students themselves, who did not participate in any constitutional violation (20).

Coleman also found that the racial differences between cities and suburbs had increased. The proportion of blacks in city schools grew, while the suburbs remained largely white (34). This resulted in a third set of findings, the major one being that "the loss of whites did increase when there was a reduction of school segregation" (6, pp. 76-77). Customarily, desegregation refers to a process that results from the implementation of law or policy. This can be considered de jure desegregation (34). In describing his study, Coleman speaks in terms of de jure segregation when he states, "Since elimination of all racial segregation within school systems—through compulsory busing when necessary—seems on the way to becoming national policy, it is equally important to ask what the policy accomplishes" (6, p. 77). Nevertheless, the data that he uses do not apply. Interracial school contact, the mean number of children of one race in proportion to the average number of children of another, is the independent variable Coleman uses to measure desegregation (5). But desegregation as a result of policy action
(the idea of desegregation about which he draws conclusions) and the proportions of blacks and whites in a school (the idea of desegregation he measures) are not the same (34). The proportion of blacks and whites can change without implementation of policy or law pertaining to desegregation (34).

Since well before 1968, demographers have noted that the proportion of blacks in cities was increasing because whites were leaving urban areas. It is not possible, though, to link this white movement to the introduction of desegregation law and policy in Coleman's selected school districts, for Coleman does not offer evidence of de jure desegregation (45); it does not function as a variable in his study (31). He simply defines white flight as "the proportionate change in white students in the districts since the preceding year" (6, p. 76). What Coleman actually demonstrates sheds little light on the consequence of desegregation for white students.

Furthermore, it is useful to draw a distinction between withdrawal and nonentrance. The phrase "white flight" tends to suggest that white students were attending a school, and the school was desegregated; then white students found this situation undesirable and left. In fact, reported drops in white attendance in the first year of school desegregation really refer to students who never enrolled at all (48).
Coleman proposes that "the appropriate means of reducing school segregation that results from residential segregation is to reduce the residential segregation itself, or if there is substantial community support for eliminating segregation through busing to bus in the fact of residential segregation" (6, p. 77). He thus proposes residential desegregation as the alternative to busing (34).

In addition, Coleman states that "the focus in school desegregation should be on doing whatever possible to slow the exodus of whites from central cities and to facilitate the movement of blacks to the suburbs" (6, p. 78). To stem the tide of whites to the suburbs, it would seem necessary to understand the reasons why they do indeed leave the city. Since the trend of white flight from central cities predates desegregation efforts, the motive cannot simply be an escape from desegregation (34). In Coleman's attempts to relate reductions in within-systems segregation to an acceleration in white flight, his projections over a ten-year period conclude that desegregation efforts result in a greater loss of whites than would occur without such efforts (31).

Analyses by Farley, a demographer at the University of Michigan, show results contrary to those of Coleman (16). Farley reports that, from 1967 to 1972, no statistically significant relationship between racial desegregation and loss of white students could be demonstrated, regardless of urban district size or geographic
area (16). In related research, Mercer and Scout, sociologists at the University of California at Riverside, found no differences in direction or rate of change in either student ethnic composition or overall population trends (18, 28).

Rossell, a political scientist at Boston University, in her study of eighty-six school districts which exhibited varying degrees of desegregation, found no significant differences, not even in districts of court-ordered busing for white students, in any of the comparisons between pre- and post-desegregation years, with respect to a decrease in proportion of white students (18, 35).

Coleman, nevertheless, notes that "the aim should be to reduce residential segregation, because it is this segregation which is particularly difficult to overcome since it required policies like busing which engender great resistance" (6, p. 78). It is difficult to understand how a task that will engender great resistance can be justified because it avoids a task which generated less resistance (34).

Academic Achievement

The limited research on the studies of busing for desegregation have not indicated statistically reliable differences between the test performance of black students who were bused as opposed to non-bused student control groups (43). In addition, comparatively little attention has been paid to the impact of busing on white
students (4). The existing, mixed research findings related to the improvement of test scores of black and white children in busing programs have made it additionally difficult for educational administrators and politicians to counsel courses of action involving pupil transportation for desegregation (4, 45).

Christopher Jencks and his associates have pointed out that most cognitive inequality lies within racial groups, within schools, and within economic groups, and that the process of desegregation does not affect these groups to a great degree. Jencks argues that

. . . the case for or against desegregation should not be argued in terms of academic achievement. If we want a desegregated society we must have desegregated schools . . . (50, p. 106).

Research on the effect of desegregation on school achievement has usually been focused on minority group students. The achievement of white students is either ignored entirely or else treated as the norm against which the gains of black students should be measured. Reverse busing of white students has stimulated interest in the probable effects on their academic progress (44).

St. Johns reports on over one hundred studies of the effects of school desegregation on children. Of these studies, sixty-seven concerned black achievement (9). Seven of the cited studies indicated some negative effects. Thirty-seven showed some positive effects; fifteen showed no statistically significant effects, and seven
indicated a mixture of positive and negative effects (9).

In most studies on the results of desegregation, the criterion used is the grade equivalent score on a standardized test. A comparison is then drawn between black children and other black children, rather than between black and white children (43).

After five years of desegregation, black students living in Washington, D.C., "performed somewhat better than during the five years preceding desegregation; at the same time, white students performed at least as well as under segregation" (50, p. 21). A study concerning Evansville, Indiana, concluded that the academic level of the schools had not been noticeably lowered due to desegregation (43).

The Dumbarton Research Council's study of desegregation in Oakland, California, reports summary achievement results as follows.

White children perform better than Negro; Negroes in racially mixed schools better than Negroes in segregated schools. White children achieve more in white-segregated schools than in mixed schools (50, p. 25).

Stallings studied academic achievement both before and after desegregation in Louisville. After one year, black achievement scores rose more than those scores of white pupils (50).

Samuells conducted a study in New Albany, Indiana, which sought to discover whether school learning proceeded at comparable rates for black and white children when children were first
desegregated in junior high schools, then black students in desegregated schools were compared with those in segregated schools. Samuells found that after two years of desegregation, the achievement gap between black and white had narrowed significantly (50). Overall, Samuells observed that

. . . the longer the association between any particular group of white and black students the smaller the differences in academic achievement appear to be . . . and that the black students who had been educated in mixed schools achieved as well as and sometimes better than white students in the integrated program (50, p. 27).

Graves and Bedell reported on an evaluation in the White Plains, New York, desegregation experience which involved two groups of white children before and after desegregation. One hundred fifty white students were compared with 129 other white students. The latter attended the same schools that the former had attended, only following desegregation. What was the impact of desegregation on academic achievement? In tests on paragraph meaning and word meaning, the group of 129 made the higher scores; in tests on arithmetic reasoning and computation, the group of 150 scored higher. Judged by changes in median test scores, desegregation in White Plains had not interfered with the generally high level of academic achievement attained by white students (50).

In Goldsboro, North Carolina, desegregation was accomplished by assigning pupils according to grade levels rather than residence so that busing affected blacks and whites alike.
Longitudinal comparison was made of third- and fifth-grade scores of pupils who experienced systemwide desegregation between their third- and fourth-grade years. Both blacks and whites gained significantly relative to national norms in verbal and mathematical skills. The white-black gap, however, was not reduced (43).

Katzenmayer found that the black children in desegregated Jackson, Michigan, schools gained 6.54 I.Q. points and white children only 0.50 I.Q. points during the two-year test period (50).

Shirey notes that while white children in desegregated New York City schools gained 0.60 I.Q. points, white children in all-white schools gained 3.21 I.Q. points (50).

In many cases involving desegregation through redistricting, some children walked to school, while many were bused to the new school. But in only one city, Evanston, were the achievement gains of bused pupils and pupils who walked compared. In this case, the bused group gained more (43).

The longitudinal data from desegregating school systems--Berkeley, Chapel Hill, Evanston, Goldsboro, Louisville, Riverside, Washington, D.C., White Plains--indicate in every case that racial mixture in the schools had no negative consequences for majority group pupils. It should be noted, however, that in almost all of these experiments, white children remained in the majority in their
schools and classrooms (14, 33, 40, 43, 47, 49).

A few reports are available on the academic progress of white children bused to schools in the ghetto. Shaker Heights, New York, reports that white pupils in grades four and six who accepted reassignment to a majority black school showed greater academic gains than did whites in the remainder of the system (43). In Evanston, self-selected white students bused to a formerly black school reflected scores above the local norm (43). One study conducted in Queens, New York, found that white students transported to a majority black school made less academic progress than did white students who remained home (43). In Rochester, New York, no significant differences between two groups of white students were found, except that fourth-grade students transferred to an inner city school made numerically higher scores on vocabulary and arithmetic achievement tests than did those students who remained in their neighborhood schools (43).

The rare studies of reverse busing of suburban children to ghetto schools indicate academic gains more often than losses (44).

The Equal Educational Opportunity Survey tentatively concluded that if desegregation has any effect on whites, it is positive rather than negative (46). This tentative conclusion is, however, contradicted by Wilson's California study (23), which found that
whites who attended racially mixed elementary schools did worse than did whites who attended all-white schools. Wilson also discovered that the difference was not accounted for by measures of initial ability or economic background (23).

Attitudes

As with previously mentioned studies of the consequences of desegregation for achievement, the evidence stemming from consequences of desegregation on attitudes is mixed. Coleman and his associates measured three types of student attitudes relevant to academic motivation: interest in school work, self-concept in regard to ability, and sense of control of personal rewards (46). For black students, sense of control was clearly the most important attitude, adding, at different grade levels, from two to several times as much to the accounted-for variance of verbal achievement; hence, sense of control proved to be a more significant contributor to variance than either interest or self-concept (46).

The basic postulate of a recently expounded general theory of motivation states that "man's primary motivational propensity is to be effective in producing changes in his environment" (13, p. 4). A large number of studies have been done that treat internal-external control of reinforcement as a personality variable (10, 11, 21, 36, 37, 38). These studies assume that each individual has a
general tendency to consider his successes and failures as being either under his own control or simply the result of chance, fate, or other powerful forces (8).

A number of studies (3, 12, 25, 32) have shown that individuals with internal orientations were more likely to try to influence their life situations than were those with external orientations. Seeman (39) found that "internals" knew or learned more control-relevant material than did "externals."

Individual internal-external control scores have also been found to be related to one's relative standing in the social environment (19, 26, 42, 52). Lower income people typically score more toward the external end of the scale than do middle income people, whereas blacks score more externally than do whites (19, 26, 42, 52).

Researchers at Fels Institute in Yellow Springs, Ohio, developed a measure of internal-external control orientation that is limited to academic-intellectual achievement situations, for it was in such situations that they wished to predict children's school achievement and desire for learning. The instrument developed by the Institute is called the Intellectual Achievement Responsibility Scale (IAR) (10, 11, 25).

The Intellectual Achievement Responsibility Scale has been used in many studies of children's achievement (8, 10, 11, 25, 26,
A series of studies conducted by Weiner and Kukla (51) suggest that persons possessing strong motivation for achievement (individuals who have presumably come to expect success) consider successes, or positive outcomes, to be generally the result of their own efforts, and failures (presumably unexpected) to be caused by external factors (42).

Another experiment undertaken by Weiner and Kukla (51) investigated the sense of environmental control and reported more direct behavioral measures of the acceptance of responsibility for successes and failures. The results indicated that those individuals with high levels of achievement motivation consider success to result from their own skill, and relegate failure to luck or other external causes. The results for those with low achievement motivation supported to a degree the notion that these people accepted responsibility for failures, but not successes (27, 39, 41, 42). In addition, the relationship of blacks' sense of control to achievement was considerably stronger than that of any family background factor (39, 41). A comparison of races reveals that among older children, sense of control accounted for about three times more test variancy among blacks than it did among whites (39, 52).

Student personality variables are strong independent correlates of test performance in Coleman's data involving all groups of
children, although different measures predict white and black achievement. An "academic self-concept" variable proves more significant for white performance, whereas the scale of "control" is more indicative of black performance (15). The critical stage, then, for white children seems to be evaluating their own relative capabilities for mastering the environment, while the critical stage for the black children seems to be learning that they can act effectively upon their surroundings (46).

The empirical findings that black students are affected more than are white students by the quality of the school staff and student body (46) suggests that privileged students will not suffer academically from integration— at least not commensurate with the gains which will be enjoyed by the disadvantaged (46).

St. Johns states that although there is the possibility that desegregation will hurt white children by exposing them to the victims of social disorganization and discrimination, there is also the likelihood that these children will either resist or benefit from the homogenization of norms (43).

Field and Lewis (17) administered the _Test Anxiety Scale for Children_ to the entire second-grade population of a suburban school system in eastern United States. Over eight hundred black and 6,500 white students attending _de facto_ segregated schools were
tested. Blacks were found to have substantially higher anxiety scores than were whites (17). A group of 105 black children in racially mixed schools obtained scores about midway between those of the segregated black and white samples. Differences in scores, determined by sex, appeared for white students—white boys obtained lower anxiety scores than did white girls—but not for blacks.

Significance of Present Study

The focus of this study was to examine the effects of mandatory busing on the school success of white fourth- and fifth-grade students in desegregated schools.

Urban metropolitan school districts encounter difficulties when court-ordered busing programs are mandated for student assignments. In past years, studies on the effects of desegregation have concentrated on minority students, as they were the ones most often transported; only in recent years have numbers of white students been compulsorily bused. Most often, the information available on these situations is tabulated in percentages, racial quotas, and withdrawals of white population; moreover, no research is available on what occurs at the end of the bus ride for the white students. Therefore, white resistance to mandatory busing and "white flight" make the implementation of effective desegregation and educational
improvement in the desegregated schools an elusive, if not impossible, task for educators.

Although there are divergent opinions on the effects of busing for desegregation in relation to the school success of white students, a somewhat general consensus expresses some degree of belief in the positive results of such measures.

Although a review of literature indicates that many studies have been reported on the effects of desegregation on bused minority students, few were found that addressed the problem of the effects of busing for desegregation on white students. The present study was designed to respond to the lack of information concerning the effects of court-ordered desegregation, involving busing, on white students. Studies of this nature are not only a necessary prerequisite to the planning of effective educational environments but are important to public school officials who are charged with implementing court-ordered student assignment plans.

Summary

In this chapter, existing desegregation studies are reviewed, indicating that too few investigations have been conducted on the effects of the tools utilized in implementing court-ordered desegregation plans. Other literature suggests that the continuing high attrition
rate of whites from desegregated school situations occurs without sound reason in relation to the educational quality in desegregated schools. Still other studies suggest positive schooling results for white students, noting that, for white students, school environmental factors do not significantly influence their achievement to any great extent. Further studies support the notion that the state of students' self-concepts and attitudes are basic to effective adjustment and performance.

The controversy surrounding busing, argued on moral, constitutional, and political grounds, makes it exceedingly difficult to obtain unbiased research that can be directed toward the improvement of the learning environment for students in desegregated schools. Too few school systems embark on a major program of research and self-evaluation of their court-ordered desegregation programs, and too often adequate information is not available to provide assistance in the measurement of the success or failure of such programs.
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CHAPTER III

METHODS AND PROCEDURES OF THE STUDY

This study focused on the effects of busing on the academic achievement, academic self-concept, attitude toward school, and sense of environmental control on fourth- and fifth-grade bused students in court-ordered desegregated schools during the first year of a court-ordered desegregation program. Information regarding the methods and procedures of the investigation is subdivided into the following topics: description of subjects, description of instruments, collection of the data, and analysis of the data. A brief summary completes the chapter.

The major function of this study was to determine the correlation between an imposed external factor and the academic achievement and related attitudes of a selected group of students. In order to determine these relationships, measures of these characteristics were required. Four standardized tests were administered to students enrolled in a large metropolitan school district. The collected information was then subjected to computerized statistical analysis.
The selected one-year period for the study was determined an appropriate time of duration because it provided time enough for proper statistical comparison of instruments used in compiling the study. The large urban school district was selected because it provided the situation of court-ordered busing of white students necessary for the study (3), and it provided adequate and available testing data required for analysis (1).

Description of the Subjects

Eleven impacted elementary schools, which housed grades four, five, and six in the same subdistrict of a large urban school district, were selected for use in this study.

All selected schools were involved in their first year of court-ordered desegregation, which required the establishment of intermediate grade centers housing grades four, five, and six to reflect the ethnic ratio of the total school district population (60 per cent minority, 40 per cent majority); in order to achieve this required ethnic ratio, two-way busing of students was mandated. All schools had the same ethnic ratio and sizable populations of bused and non-bused white students in a desegregated setting. The eleven impacted elementary schools were all operated by the same school administration; all used the same system-wide baseline curriculum; all used the same textbooks; all were Title I schools and had
approximately the same programs and resources available to its pupils.

In the eleven impacted schools, the white student population was homogeneous in relation to socio-economic indicators, mobility index, parental educational level, and family income level (2, 7). All white students involved in the study had attended predominantly single-race schools until the time of court-ordered desegregation; therefore, at the time of this study, the white students had not previously been enrolled in a desegregated school. The court-ordered desegregation plan for the school district provided for some portion of white students in the selected subdistrict to be bused outside the neighborhood zone.

All white students in the fourth and fifth grades of the impacted schools in the subdistrict, as well as all impacted schools in the subdistrict, were included in this study. Sixth-grade students were not included in the study because the data needed for the study were not available for them. By definition of the study, whites were the only ethnic group represented in the study, thus presenting a total population of nine hundred white students: 545 non-bused white students (the control group) and 355 bused white students (the experimental group).
Description of the Instruments

Four instruments recording academic achievement and three types of school-related attitudes were used as criterion measures in this study. The Iowa Test of Basic Skills was used to measure the subjects in the cognitive domain. The School Attitude Inventory, the Academic Self-Concept Scale, and the Intellectual Achievement Responsibility Scale generated information regarding the subjects' affective domain.

A more comprehensive description of the instruments will be presented in the following order: Iowa Test of Basic Skills, School Attitude Inventory, Academic Self-Concept Scale, and the Intellectual Achievement Responsibility Scale.

The Iowa Test of Basic Skills (ITBS)

The ITBS differs from most other elementary achievement test batteries in that it is concerned only with generalized intellectual skills and abilities. The skills measured by the ITBS are classified into five major areas: vocabulary, reading, language, work-study, and mathematics. Each test is continuous, covering the range of achievement development in the elementary school. The test yields scores in the above-mentioned areas, each has a reliability of .90 or over (1).
The battery of the ITBS is available in eight levels (7-14). Levels are constructed to reflect progress in a continuous developmental sequence from grade one to grade eight. All levels are available in two equivalent forms, 5 and 6. Both forms were assembled at the same time, to the same content and difficulty specifications, from the same pool of extensively pretried items. The derived scores were equated to provide comparability of results from the two forms.

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 groups, and (3) normalized standard scores with percentile ranks in grade.

The ITBS is recommended by Mehrens (6) as a test of primarily basic skills. The test reliabilities are high, ranging from .70 to .93 for the sub-tests and from .84 to .96 for the five major tests. The composite reliabilities for the total test range from .97 to .98. The thoroughness with which content validity was emphasized in the construction of the tests is a major strength of the battery.

The ITBS is also recommended by Nunnally (8), who states that the test is very thorough, with the reliabilities of all sub-tests being good (8).
Curricular validity, too, is a major strength of the test because of the careful definition of skills prior to construction and the emphasis on item analysis (4). The normative group is as representative of the general school population as that of any standardized achievement battery (4).

The School Attitude Inventory and Academic Self-Concept Scales

The School Attitude Inventory and Academic Self-Concept Scales, developed and validated in the urban area school district during the 1973-1974 school year (10), consist of two sets of eleven-item Likert-type statements (to which students indicated agreement or disagreement) in an alternating sequence within a finished test form. The items composing each scale are based upon "item formats," derived from a more theoretical analysis of the behavioral referents of "school attitude" and "self (academic) concept" as extrapolated from the Piers-Harris Children's Self-Concept Scale (10), 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 consistency of the scale ranges from .78 to .93, with retest reliability being .71 to .77. Additional supporting data for the validity of the scales was based upon the relationships between the two sets of items as revealed by principal component factor analysis of the item responses elicited
from students, followed by a varimax rotation. The factor structure resulting from this analysis (shown in Appendix A) illustrates that the items for each scale tended to cluster unexpectedly about an "attitude" and "self-concept" vector, respectively (10). 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, respectfully, while those for the Self-Concept Scale were .91 and .94. The intercorrelation between the two measures was .49, indicating that they shared approximately 25 per cent common variance.

The Intellectual Achievement Responsibility Scale (IAR)

The IAR attempts to measure beliefs in internal versus external reinforcement responsibility. It is aimed at assessing children's beliefs in intellectual-academic achievement situations. The IAR scale is composed of thirty-four forced-choice items. Each item describes either a positive or a negative achievement experience which routinely occurs in children's daily lives. The item is followed by one alternative stating that the event occurred because of the behavior of someone else in the child's immediate environment (10). A child's $I^+$ score (indicating belief in internal
responsibility for successes) is obtained by summing all positive events for which he assumes credit. A child's I- score (indicating belief in internal responsibility for failures) is obtained by summing all negative events for which he assumes credit. His total I score is the sum of his I+ and his I- subscores (10).

Test-retest reliabilities were .69 for the total I, .66 for I+, and .74 for I-. The correlations were .54 for I+ and .57 for I- (10). Vitale also cites additional statistics to lend support to the construct validity of children's belief in their control of reinforcements. Among these are the low correlations between the I+ and the I- subscales (10).

Collection of the Data

A proposal to conduct this study was written and submitted to the research and evaluation developmental council of the school district. The proposal fully explained and described the study, including the hypotheses to be tested, the population and 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 screening council which was composed of top level district administrators. The research and evaluation department of the school district was notified of the approval and asked to cooperate with the implementation process.
The *Iowa Test of Basic Skills* total test battery was administered to both experimental and control groups at the beginning of the school year, September, 1976, and again at the end of the school year, April, 1977. Form 5, Level 10, was used to pretest the fourth graders and was administered by the children's regular teachers. Form 6, Level 10, was used to posttest the fourth graders and was also administered by the children's regular teachers. Form 5, Level 11, was used to pretest the fifth graders and was administered by the children's regular teachers. Form 6, Level 11, was used to posttest the fifth graders and was also administered by the children's regular teachers. The tests were administered to the students during scheduled testing periods which covered a four-day testing period. The same directions were given to each group. The tests were utilized as measurements of academic achievement. The major test sections were combined to obtain a composite score on every test for each individual. The scores on each major test section and the composite scores were converted into grade equivalents. The students' academic growth was measured in terms of grade equivalent scores; this conversion allowed a statistical comparison to be made.

The *Classroom Inventory* test which includes the *School Attitude Inventory*, the *Academic Self-Concept Scales*, and the
The **Intellectual Achievement Responsibility Scales** was administered to both the experimental and control groups in December, 1976. The **School Attitude Inventory** (see Appendix B), the **Academic Self-Concept Scales** (see Appendix C), and the **Intellectual Achievement Responsibility Scales** (see Appendix D) tests were administered to fourth- and fifth-grade students by the students' regular teachers during one scheduled testing day. Identical directions were given to each group. The **School Attitude Inventory** yielded a general score indicating positive attitude toward school. The **Academic Self-Concept Scale** yielded a general score showing self-concept in academic situations. The **Intellectual Achievement Responsibility Scales** yielded sub-scores regarding control of success and failure factors with a composite score of both. Mean scores were used as comparison measures between groups.

**Analysis of the Data**

The research for hypotheses one through ten was of the experimental pretest-posttest control group design (1). The research for hypotheses eleven through sixteen was of quasi-experimental posttest only design. No external experimental variable was imposed.

Null hypotheses stating no significant differences between the means were constructed for each of the fourteen hypotheses,
and the level of significance was determined (9).

The data generated by each instrument were transposed into a form compatible with computer analysis. The level of significance below which a hypothesis would be accepted or rejected was designated at the .05 level (5).

The analysis of data was completed by calculating the adjusted mean scores of the five ITBS scales used in the first ten hypotheses as recorded in Chapter I. The analysis of covariance was applied to a comparison of treatment groups with pretest scores being used as covariant data. Mean scores on the SAI, the Academic Self-Concept Scale, and the IAR Scale were computed and used to test the last four hypotheses, as recorded in Chapter I. The one-way analysis of variance was applied to analyze the scores derived from each scale.

Summary

The purpose of Chapter III was to outline and clarify the methods and procedures used to conduct this investigation. In this chapter, a description of the subjects and instruments used to collect and analyze the data was included.

The nine hundred subjects of this study included 169 fourth-grade bused white students, 298 fourth-grade non-bused white students, 189 fifth-grade bused white students, and 264 fifth-grade non-bused white students, all assigned to desegregated schools.
Four instruments yielding academic achievement and school-related success factor data were administered. One instrument--the ITBS--provided information about areas of academic achievement, while the other three--the SAI, Academic Self-Concept Scale, and the IAR Scale--provided information regarding areas of the students' affective domain. Analysis of variance and covariance were selected to analyze the data collected.
CHAPTER BIBLIOGRAPHY


CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

The major function of this study was to compare the academic achievement, school attitude, academic self-concept, and sense of environmental control of non-bused white students in desegregated schools with the same factors as applied to bused white students in desegregated schools.

This chapter includes the presentation and interpretation of the data collected for the purpose of the study. The analysis of the data, as described in Chapter III, was accomplished by calculating the adjusted mean scores of the Iowa Test of Basic Skills subscales pertinent to the variables used to test the first ten hypotheses in this study. The mean scores of the Student Inventory subscales were used to test the variables pertinent to Hypotheses Eleven through Sixteen in this study.

The analysis of covariance was used to analyze the scores for the first ten hypotheses. The one-way analysis of variance was used to analyze the scores for Hypotheses Eleven through Sixteen. A .05 level of significance was calculated for the rejection or acceptance of each hypothesis.

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Bartlett's Chi Square was used to establish homogeneity of variance in groups that varied. The Chi Square probability levels were found to be insignificant, indicating no significant differences in variance.

The chapter format for presenting and analyzing the data is as follows: the initial presentation includes an analysis of covariance for the five variables used to test the first ten hypotheses. The five variables are (1) reading achievement, (2) language achievement, (3) work-study skills achievement, (4) mathematics achievement, and (5) composite achievement. Secondly, the analysis of mean scores from school attitude, academic self-concept, and sense of environmental control scores from the Student Inventory are presented. Non-hypothesized data and a brief discussion of the findings conclude the chapter.

Presentation and Analysis of Data

Pretest scores for adjusted mean gains were obtained from the Iowa Test of Basic Skills administered to the control and experimental groups in the fall of 1976. Posttest data for the control and experimental groups' adjusted mean gains were obtained from the Iowa Test of Basic Skills, which was administered in the spring of 1977. This information was used for the analysis of the reading achievement scores, language achievement scores, work-study skills
achievement scores, mathematics achievement scores, and composite achievement scores for the subjects.

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

There were 420 subjects in the fourth-grade test results for reading achievement; these data were analyzed in terms of Hypothesis One. There were 414 subjects in the fourth-grade test results for language achievement and mathematics achievement; these data were analyzed in terms of Hypotheses Three and Seven. There were 411 subjects in the fourth-grade test results for work-study skills achievement; these data were analyzed in terms of Hypothesis Five. There were 400 subjects in the fourth-grade results in composite achievement; these data were analyzed in terms of Hypothesis Nine.

There were 400 subjects in the fifth-grade test results for reading achievement; these data were analyzed in terms of Hypothesis Two. There were 391 subjects in the fifth-grade test results for language achievement; these data were analyzed in terms of Hypothesis Four. There were 399 subjects in the fifth-grade test results for mathematics achievement; these data were analyzed in terms of Hypothesis Eight. There were 396 subjects in the fifth-grade
test results for work-study skills achievement; these data were analyzed in terms of Hypothesis Six. There were 387 subjects in the fifth-grade test results for composite achievement; these data were analyzed in terms of Hypothesis Ten.

There were 436 subjects in the fourth-grade test results for academic self-concept; these data were analyzed in terms of Hypothesis Eleven. There were 437 subjects in the fourth-grade results for school attitude; these data were analyzed in terms of Hypothesis Thirteen. There were 428 subjects in the fourth-grade results for sense of environmental control; these data were analyzed in terms of Hypothesis Fifteen.

There were 428 subjects in the fifth-grade test results for academic self-concept; these data were analyzed in terms of Hypothesis Twelve. There were 430 subjects in the fifth-grade test results for school attitude; these data were analyzed in terms of Hypothesis Fourteen. There were 419 subjects in the fifth-grade test results for sense of environmental control; these data were analyzed in terms of Hypothesis Sixteen.

Hypotheses Related to School Achievement

**Null Hypothesis One**

There will be no significant difference in the adjusted mean
scores in reading achievement between fourth-grade bused and non-bused white student groups after one academic year in the impacted schools, as measured by the *Iowa Test of Basic Skills*. The analysis of covariance was used to indicate significant variations. The adjusted mean scores on reading achievement for 420 fourth-grade students, which are shown in Table I, indicate the bused white students' score of 5.43 on the reading achievement subscales of the *Iowa Test of Basic Skills* to be slightly greater than the non-bused white students' score of 5.29. The difference, however, was not significant. The F ratio is not equal to and does not exceed the

### TABLE I

**COMPARISON OF READING ACHIEVEMENT ADJUSTED MEAN SCORES OF FOURTH-GRADE BUSED AND NON-BUSED WHITE STUDENTS IN THE IMPACTED SCHOOLS**

<table>
<thead>
<tr>
<th>Groups</th>
<th>Adjusted Mean Scores</th>
<th>N</th>
<th>F</th>
<th>p*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bused</td>
<td>5.43</td>
<td>156</td>
<td>2.85</td>
<td>0.09</td>
</tr>
<tr>
<td>Non-bused</td>
<td>5.29</td>
<td>264</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>420</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p values less than or equal to .05 are considered to be significant.*
required table value of 3.86 for 1 and 417 degrees of freedom required for the .05 level of significance (4). Therefore, the null hypothesis is retained.

**Null Hypothesis Two**

There will be no significant difference in adjusted mean scores in reading achievement between fifth-grade bused and non-bused white student groups after one academic year in the impacted schools, as measured by the *Iowa Test of Basic Skills*. The analysis of covariance was used to indicate significant variations. The adjusted mean scores on reading achievement for 400 fifth-grade students, which are shown in Table II, indicate that the bused white

| TABLE II |
|-------------------|-----------------|-----------------|-----------------|-----------------|
| Groups           | Adjusted Mean Scores | N     | F    | p*     |
| Bused            | 6.12             | 177   | 0.28 | 0.60  |
| Non-bused        | 6.07             | 223   |      |       |
| Total            | 6.07             | 400   |      |       |

*p values less than or equal to .05 are considered to be significant.
students' score of 6.12 was numerically greater than the non-bused white students' score of 6.07; the difference, however, was not significant. The null hypothesis is therefore retained on the basis of insignificant differences between the group scores.

Null Hypothesis Three

There will be no significant difference in adjusted mean scores in language achievement between fourth-grade bused and non-bused white students after one academic year in the impacted schools, as measured by the Iowa Test of Basic Skills. The analysis of covariance was used (see Table III) to indicate significant variations. The

TABLE III

<table>
<thead>
<tr>
<th>Groups</th>
<th>Adjusted Mean Scores</th>
<th>N</th>
<th>F</th>
<th>p*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bused</td>
<td>5.47</td>
<td>154</td>
<td>0.32</td>
<td>0.57</td>
</tr>
<tr>
<td>Non-bused</td>
<td>5.43</td>
<td>260</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>414</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p values less than or equal to .05 are considered to be significant.
adjusted mean scores on language achievement for 414 fourth-grade students indicate the bused white students' score of 5.47 to be slightly greater than the non-bused white students' score of 5.43. The probability value of .57 proved to be insignificant; therefore, the null hypothesis is retained.

**Null Hypothesis Four**

There will be no significant difference in adjusted mean scores in language achievement between fifth-grade bused and non-bused white students after one academic year in the impacted schools, as measured by the Iowa Test of Basic Skills. The analysis of covariance was used to indicate significant variations (see Table IV).

**TABLE IV**

COMPARISON OF LANGUAGE ACHIEVEMENT ADJUSTED MEAN SCORES OF FIFTH-GRADE BUSED AND NON-BUSED WHITE STUDENTS IN THE IMPACTED SCHOOLS

<table>
<thead>
<tr>
<th>Groups</th>
<th>Adjusted Mean Scores</th>
<th>N</th>
<th>F</th>
<th>p*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bused</td>
<td>6.05</td>
<td>172</td>
<td>0.74</td>
<td>0.30</td>
</tr>
<tr>
<td>Non-bused</td>
<td>6.11</td>
<td>219</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>391</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p values less than or equal to .05 are considered to be significant.
The adjusted mean scores on language achievement for 391 fifth-grade students show the non-bused students' score of 6.11 to be slightly greater than the bused students' score of 6.05. Since the results did not attain the prescribed level of significance, the null hypothesis is retained.

**Null Hypothesis Five**

There will be no significant difference in adjusted mean scores in work-study skills achievement between fourth-grade bused and non-bused white students after one academic year in the impacted schools, as measured by the Iowa Test of Basic Skills. The analysis of covariance was used to indicate significant variations (see Table V).

**TABLE V**

**COMPARISON OF WORK-STUDY SKILLS ACHIEVEMENT ADJUSTED MEAN SCORES OF FOURTH-GRADE BUSED AND NON-BUSED WHITE STUDENTS IN THE IMPACTED SCHOOLS**

<table>
<thead>
<tr>
<th>Groups</th>
<th>Adjusted Mean Scores</th>
<th>N</th>
<th>F</th>
<th>p*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bused</td>
<td>5.21</td>
<td>154</td>
<td>0.41</td>
<td>0.52</td>
</tr>
<tr>
<td>Non-bused</td>
<td>5.16</td>
<td>257</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>411</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p values less than or equal to .05 are considered to be significant.
Minimal differences were found between the scores on work-study skills of fourth-grade bused and non-bused white students. The adjusted mean score comparisons of the 411 bused and non-bused fourth-grade white students—5.21 and 5.16 respectively—did not reach the statistically significant .05 level; thus the null hypothesis is retained.

Null Hypothesis Six

There will be no significant difference in adjusted mean scores in work-study skills between fifth-grade bused and non-bused white students after one academic year in the impacted schools, as measured by the Iowa Test of Basic Skills. The analysis of covariance was used to indicate significant variations (see Table VI). A

\[
\text{TABLE VI}
\]

COMPARISON OF WORK-STUDY SKILLS ACHIEVEMENT ADJUSTED MEAN SCORES OF FIFTH-GRADE BUSED AND NON-BUSED WHITE STUDENTS IN THE IMPACTED SCHOOLS

<table>
<thead>
<tr>
<th>Groups</th>
<th>Adjusted Mean Scores</th>
<th>N</th>
<th>F</th>
<th>( p^* )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bused</td>
<td>6.02</td>
<td>175</td>
<td>2.30</td>
<td>0.13</td>
</tr>
<tr>
<td>Non-bused</td>
<td>5.91</td>
<td>221</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>396</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* \( p \) values less than or equal to .05 are considered to be significant.
probability level of .13 indicates that no significant differences existed between the 396 fifth-grade bused and non-bused white students' scores in the work-study skills subscale of the *Iowa Test of Basic Skills*. The bused students' adjusted mean score of 6.02 was numerically higher than the 5.91 score of non-bused students. Since the difference between the two groups failed to achieve significance, the null hypothesis is retained.

**Null Hypothesis Seven**

There will be no significant difference in adjusted mean scores in mathematics achievement between fourth-grade bused and non-bused white students after one academic year in the impacted schools, as measured by the *Iowa Test of Basic Skills*. The analysis of covariance was used to indicate significant variations. As shown in Table VII, negligible numerical differences existed between the adjusted mean scores of the 414 fourth-grade bused and non-bused white students in mathematics achievement scores. The non-bused students' score of 5.03 was slightly greater than the bused students' score of 4.94. The .18 probability value proved to be insignificant; thus the null hypothesis is retained.
TABLE VII
COMPARISON OF MATHEMATICS ACHIEVEMENT ADJUSTED MEAN SCORES OF FOURTH-GRADE BUSED AND NON-BUSED WHITE STUDENTS IN THE IMPACTED SCHOOLS

<table>
<thead>
<tr>
<th>Groups</th>
<th>Adjusted Mean Scores</th>
<th>N</th>
<th>F</th>
<th>p*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bused</td>
<td>4.94</td>
<td>155</td>
<td>1.70</td>
<td>0.18</td>
</tr>
<tr>
<td>Non-bused</td>
<td>5.03</td>
<td>259</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>5.03</td>
<td>414</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p values less than or equal to .05 are considered to be significant.

Null Hypothesis Eight

There will be no significant difference in adjusted mean scores in mathematics achievement between fifth-grade bused and non-bused white students after one academic year in the impacted schools, as measured by the Iowa Test of Basic Skills. The analysis of covariance was used to indicate significant variations. Table VIII shows that minimal numerical differences were found between the mathematics achievement adjusted mean scores of 399 fifth-grade bused and non-bused white students. The non-bused students' score of 5.73 was slightly higher than the 5.65 score of bused students. The null hypothesis is retained in that the probability value was
greater than the necessary .05 to be significant.

**TABLE VIII**

**COMPARISON OF MATHEMATICS ACHIEVEMENT ADJUSTED MEAN SCORES OF FIFTH-GRADE BUSED AND NON-BUSED WHITE STUDENTS IN THE IMPACTED SCHOOLS**

<table>
<thead>
<tr>
<th>Groups</th>
<th>Adjusted Mean Scores</th>
<th>N</th>
<th>F</th>
<th>p*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bused</td>
<td>5.65</td>
<td>176</td>
<td>1.42</td>
<td>0.23</td>
</tr>
<tr>
<td>Non-bused</td>
<td>5.73</td>
<td>223</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>399</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p values less than or equal to .05 are considered to be significant.

**Null Hypothesis Nine**

There will be no significant difference in adjusted mean scores in composite achievement between fourth-grade bused and non-bused white students after one academic year in the impacted schools, as measured by the *Iowa Test of Basic Skills*. The analysis of covariance was used to indicate significant variations. As shown in Table IX, the 5.32 adjusted mean score of 149 bused fourth-grade students was greater numerically than the 5.26 adjusted mean score of the 251 non-bused fourth-grade students. The probability value of
TABLE IX

COMPARISON OF COMPOSITE ACHIEVEMENT ADJUSTED MEAN SCORED OF FOURTH-GRADE BUSED AND NON-BUSED WHITE STUDENTS IN THE IMPACTED SCHOOLS

<table>
<thead>
<tr>
<th>Groups</th>
<th>Adjusted Mean Scores</th>
<th>N</th>
<th>F</th>
<th>p*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bused</td>
<td>5.32</td>
<td>149</td>
<td>1.64</td>
<td>0.20</td>
</tr>
<tr>
<td>Non-bused</td>
<td>5.26</td>
<td>251</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>400</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p values less than or equal to .05 are considered to be significant.

.20 indicated no significant difference between the adjusted mean scores; thus the null hypothesis is retained.

Null Hypothesis Ten

There will be no significant difference in adjusted mean scores in composite achievement between fifth-grade bused and non-bused white students after one academic year in the impacted schools, as measured by the Iowa Test of Basic Skills. The analysis of covariance was used to indicate significant variations. Table X shows that the difference existing between the adjusted mean scores in composite achievement for 387 fifth-grade bused and non-bused white students was not statistically significant, although the adjusted
TABLE X

COMPARISON OF COMPOSITE ACHIEVEMENT ADJUSTED MEAN SCORES OF FIFTH-GRADE BUSED AND NON-BUSED WHITE STUDENTS IN THE IMPACTED SCHOOLS

<table>
<thead>
<tr>
<th>Groups</th>
<th>Adjusted Mean Scores</th>
<th>N</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bused</td>
<td>5.98</td>
<td>172</td>
<td>1.09</td>
<td>0.30</td>
</tr>
<tr>
<td>Non-bused</td>
<td>6.03</td>
<td>215</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>387</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p values less than or equal to .05 are considered to be significant.

The mean score of the non-bused white students of 6.03 was numerically greater than that of the bused white students' adjusted mean score of 5.98. Since the adjusted mean differences were not large enough to be significant, the null hypothesis is retained.

Hypotheses Related to School Adjustment

Null Hypothesis Eleven

There will be no significant difference in academic self-concept between fourth-grade bused and non-bused white students in the impacted schools, as measured by the Academic Self-Concept Scale. A one-way analysis of variance was used to indicate
significant variations. As shown in Table XI, no significant differences between mean scores on academic self-concept existed; the mean score for 278 non-bused fourth-grade white students, 1.72, was numerically higher than that of 1.71 for 158 bused fourth-grade white students. As a result, the null hypothesis is retained.

**TABLE XI**

**COMPARISON OF MEAN SCORES ON ACADEMIC SELF-CONCEPT OF FOURTH-GRADE BUSED AND NON-BUSED WHITE STUDENTS IN THE IMPACTED SCHOOLS**

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>Standard Deviations</th>
<th>N</th>
<th>F</th>
<th>p*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bused</td>
<td>1.71</td>
<td>0.23</td>
<td>158</td>
<td>0.25</td>
<td>0.61</td>
</tr>
<tr>
<td>Non-bused</td>
<td>1.72</td>
<td>0.22</td>
<td>278</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1.72</td>
<td></td>
<td>436</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p values less than or equal to .05 are considered to be significant.

**Null Hypothesis Twelve**

There will be no significant difference in academic self-concept between fifth-grade bused and non-bused white students in the impacted schools, as measured by the **Academic Self-Concept Scale**.

As seen in Table XII, a close parallel existed between the group
means of the 428 fifth-grade bused and non-bused students in relation to academic self-concept. The 1.72 mean score of 238 non-bused fifth-grade white students was slightly greater than the 1.70 score of the 190 bused fifth-grade white students. The probability value of .54 does not attain the .05 level of significance, hence supporting retention of the null hypothesis.

Table XII

COMPARISON OF MEAN SCORES ON ACADEMIC SELF-CONCEPT OF FIFTH-GRADE BUSED AND NON-BUSED WHITE STUDENTS IN THE IMPACTED SCHOOLS

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>Standard Deviations</th>
<th>N</th>
<th>F</th>
<th>p*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bused</td>
<td>1.70</td>
<td>0.24</td>
<td>190</td>
<td>0.37</td>
<td>0.54</td>
</tr>
<tr>
<td>Non-bused</td>
<td>1.72</td>
<td>0.24</td>
<td>238</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1.71</td>
<td>0.24</td>
<td>428</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p values less than or equal to .05 are considered to be significant.

Null Hypothesis Thirteen

There will be no significant difference of school attitude between fourth-grade bused and non-bused white students in the impacted schools, as measured by the School Attitude Scale. In
terms of mean difference, 158 fourth-grade bused white students scored higher numerically than did the 279 fourth-grade non-bused white students. As shown in Table XIII, their means were 1.63 and 1.61, respectively. Since the differences were not significant, the null hypothesis is retained.

TABLE XIII

COMPARISON OF MEAN SCORES ON SCHOOL ATTITUDE OF FOURTH-GRADE BUSED AND NON-BUSED WHITE STUDENTS IN THE IMPACTED SCHOOLS

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>Standard Deviations</th>
<th>N</th>
<th>F</th>
<th>p*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bused</td>
<td>1.63</td>
<td>0.28</td>
<td>158</td>
<td>0.28</td>
<td>0.60</td>
</tr>
<tr>
<td>Non-bused</td>
<td>1.61</td>
<td>0.30</td>
<td>279</td>
<td></td>
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<tr>
<td>Total</td>
<td>1.62</td>
<td>0.29</td>
<td>437</td>
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</table>

*p values less than or equal to .05 are considered to be significant.

Null Hypothesis Fourteen

There will be no significant difference in school attitude between fifth-grade bused and non-bused white students in the impacted schools, as measured by the School Attitude Scale. A moderate numerical difference, as shown in Table XIV, existed
between the 190 bused white students' mean score of 1.51 and the 240 non-bused white students' mean score of 1.56, thus indicating a more positive school attitude for the fifth-grade non-bused white students. However, the .10 probability level indicates that the difference between the two groups was insignificant. The null hypothesis is therefore retained.

**TABLE XIV**

COMPARISON OF MEAN SCORES ON SCHOOL ATTITUDE OF FIFTH-GRADE BUSED AND NON-BUSED WHITE STUDENTS IN THE IMPACTED SCHOOLS

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>Standard Deviations</th>
<th>N</th>
<th>F</th>
<th>p*</th>
</tr>
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<tr>
<td>Bused</td>
<td>1.51</td>
<td>0.30</td>
<td>190</td>
<td>2.71</td>
<td>0.10</td>
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<tr>
<td>Non-bused</td>
<td>1.56</td>
<td>0.31</td>
<td>240</td>
<td></td>
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</tr>
<tr>
<td>Total</td>
<td>1.54</td>
<td>0.30</td>
<td>430</td>
<td></td>
<td></td>
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</tbody>
</table>

*p values less than or equal to .05 are considered to be significant.

**Null Hypothesis Fifteen**

There will be no significant difference in environmental control attitudes between fourth-grade bused and non-bused white students in the impacted schools, as measured by the Intellectual Achievement
Responsibility Scale. Table XV shows the relative equality that existed between the measures relating to environmental control attitudes of 430 fourth-grade bused and non-bused white students. The non-bused students obtained the greater mean score of 1.77 on the I+ subscale, whereas the bused students secured a 1.76 mean score. On the I- subscale, the bused students' mean score was 1.56, slightly higher than the 1.54 mean score of the non-bused students. On the total scale mean score, the 1.66 score of bused students indicated a minimal numerical difference from the 1.66 of the non-bused students. Since the difference between the means was not significant, the null hypothesis is retained.

Null Hypothesis Sixteen

There will be no significant difference in environmental control attitude between fifth-grade bused and non-bused white students in the impacted schools, as measured by the Intellectual Achievement Responsibility Scale. As indicated by Table XVI, minimal numerical differences were found between the environmental control attitude factors of 419 fifth-grade bused and non-bused white students. The 186 bused students' scores of 1.78, 1.61, and 1.69 on the I+, I-, and total I scale were slightly higher than the 1.76, 1.59, and 1.67 scores of 233 non-bused students. The null hypothesis is retained in
TABLE XV

COMPARISON OF MEAN SCORES ON ENVIRONMENTAL CONTROL ATTITUDES OF FOURTH-GRADE BUSED AND NON-BUSED WHITE STUDENTS IN THE IMPACTED SCHOOLS

<table>
<thead>
<tr>
<th>Factor</th>
<th>Bused Fourth-Grade White Students (N = 155)</th>
<th>Non-bused Fourth-Grade White Students (N = 272)</th>
<th>F</th>
<th>p</th>
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</thead>
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<tr>
<td></td>
<td>Means</td>
<td>S. D.</td>
<td>Means</td>
<td>S. D.</td>
</tr>
<tr>
<td>Responsibility for Success (I+)</td>
<td>1.76</td>
<td>0.19</td>
<td>1.77</td>
<td>0.18</td>
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<tr>
<td>Responsibility for Failure (I-)</td>
<td>1.56</td>
<td>0.21</td>
<td>1.54</td>
<td>0.22</td>
</tr>
<tr>
<td>Total Responsibility for Total Intellectual Achievement (I)</td>
<td>1.66</td>
<td>0.15</td>
<td>1.66</td>
<td>0.15</td>
</tr>
</tbody>
</table>

*p values less than or equal to .05 are considered to be significant.
TABLE XVI
COMPARISON OF MEAN SCORES ON ENVIRONMENTAL CONTROL ATTITUDES OF FIFTH-GRADE BUSED AND NON-BUSED WHITE STUDENTS IN THE IMPACTED SCHOOLS

<table>
<thead>
<tr>
<th>Factor</th>
<th>Bused Fifth-Grade White Students (N = 186)</th>
<th>Non-bused Fifth-Grade White Students (N = 233)</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Means</td>
<td>S. D.</td>
<td>Means</td>
<td>S. D.</td>
</tr>
<tr>
<td>Responsibility for Success (I+)</td>
<td>1.78</td>
<td>0.18</td>
<td>1.76</td>
<td>0.19</td>
</tr>
<tr>
<td>Responsibility for Failure (I-)</td>
<td>1.61</td>
<td>0.19</td>
<td>1.59</td>
<td>0.21</td>
</tr>
<tr>
<td>Total Responsibility for Intellectual Achievement (I)</td>
<td>1.69</td>
<td>0.15</td>
<td>1.67</td>
<td>0.16</td>
</tr>
</tbody>
</table>

*p values less than or equal to .05 are considered to be significant.
that the probability values are greater than the necessary .05 to be significant.

Discussion of Findings

The data concerning the effects of busing on the academic achievement of fourth-grade bused white students are shown in Tables I, III, V, VII, and IX. When the test measures for the bused group of white fourth-grade students are compared with those of the non-bused fourth-grade white students, the differences are shown to be not statistically significant. The bused fourth-grade students scored consistently higher numerically on the selected subscales measured by the ITBS, with the exception of the mathematics achievement test.

The data concerning the effects of busing on the academic achievement of fifth-grade bused white students are shown in Tables II, IV, VI, VIII, and X. Although the differences between the test measures of the two groups are statistically not significant when compared, the non-bused white fifth-grade students scored consistently higher numerically on the selected subscales of the ITBS, with the exception of the reading achievement test.

In this study, the effects of busing did not seem to result in weakened academic performance for those bused white students. These findings prove to be contrary to earlier findings by Coleman
(3, 8), Armor (1), and St. John (6), who reported that bused white students achieved academically at a significantly lower level than did non-bused white students.

The results of this study appear to support the findings reported by St. John (6) that in the rare studies of the reverse busing of suburban children to ghetto schools, gains in achievement, more often than losses, are reported.

For the purposes of interpreting the results of this study, it should be pointed out that St. John (6) has commented concerning families who choose reverse busing, they may have unusual children, indicating that parental attitudes in accepting voluntary or involuntary busing could be a significant factor in the child's academic and attitudinal progress in a desegregated school. The fact, then, that busing did not significantly affect the achievement or attitudes of bused white students may imply that those students and their parents did, indeed, accept the terms of busing, indicating too that busing could have been a factor in student achievement.

The findings of insignificant differences in academic achievement of bused and non-bused white students support the reports of Jencks (5) in that cognitive inequality lies within racial groups, schools, and socio-economic groups and is little affected by the process of desegregation.
Coleman (8) concluded that the child's background and general social context was of greater importance to a child's achievement than was the influence of schools. St. John (6) found that the quality of learning which takes place is a direct result of the experiential background of the student.

The present study's findings agree with the one other study involving bused and non-bused white students, reported by St. John (6), in which bused white students showed greater gains in achievement than did non-bused white students.

In an effort to maintain the proper interpretation of this study, it must be noted here that none of the schools to which white students in this study were bused were previously and predominantly minority schools. Also, all schools were located in middle-class neighborhoods. It may be concluded, then, that the findings of this study concur with those of a study of the Richmond, California, schools, which show that the degree of racial integration of a school has no effect upon the achievement of white students who attended middle-class schools (7).

The data pertinent to the comparison of attitudinal factors of bused and non-bused fourth-grade white students are shown in Tables XI, XIII, and XV. Although the differences are not significant, bused fourth-grade white students scored numerically higher
in school, in responsibility for failures, and in total intellectual achievement responsibility. Numerically, bused fourth-grade white students scored lower than did non-bused students in academic self-concept and responsibility for successes. The results of lower academic self-concept scores for bused fourth-grade students in relation to numerically greater gains in academic achievement are not consistent with Coleman's findings that an academic self-concept is significant for white achievement performance. The lower score for bused white fourth-grade students in responsibility for success is inconsistent with the studies by Weiner and Kukla (9), which suggest that persons with high levels of achievement generally consider successes to be the results of their own efforts.

Data concerning bused and non-bused fifth-grade white students are shown in Tables XII, XIV, and XVI. The results of the fifth-grade bused and non-bused white student tests show no extensive differences, although the fifth-grade bused students scored consistently higher numerically in all of the sense of environmental control factor tests. The numerically lower academic achievement scores combined with the numerically lower academic self-concept scores agree with Coleman's (8) findings that lower academic scores tend to be related to lower academic self-concept scores.
This study tends to support evidence offered by those researchers (2, 7), who have emphasized that although busing has been freely implemented throughout our nation for hundreds of years to ensure better educational opportunities, it was not until busing became a mandatory tool of desegregation that great concern was evidenced; therefore, the issue of busing is not an educational concern, but lies within the realm of greater societal issues.

Non-hypothesized Findings and Observations

Based on the researcher's personal observations in the conduct of this investigation and also on statistical information not reported, the following observations were made.

1. Busing is a political and moral issue that has a much greater effect on the lives of the parents of bused white students than on the school achievement and attitudes of the bused students themselves.

2. The majority of white students who are bused for school desegregation consistently adjust in a positive manner.

3. The busing of white students may well be disruptive to political and judicial processes but does not noticeably affect the educational process.
Summary

In Chapter IV, the findings of this investigation are presented. The research hypotheses were stated in the null form and grouped according to the achievement and attitudinal variables tested in order to facilitate statistical analysis. The analysis of covariance was used to analyze the data for the first ten hypotheses, and the one-way analysis of variance was utilized for the last six hypotheses.

The data, although not statistically significant as a whole, does indicate several broad trends. Compulsorily bused white students achieved, academically and attitudinally, as well as did non-bused white students. Fourth-grade bused white students seem to adjust more readily to the processes of desegregation, although no data are available to support any attempted explanation. Additionally, busing, as a tool of desegregation, is no deterrent to academic achievement of those bused white students and apparently does not endanger the scholastic progress of white students.
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CHAPTER V

SUMMARY, FINDINGS, CONCLUSIONS, AND
RECOMMENDATIONS

This study was undertaken to investigate the effects of busing on the academic achievement and selected school attitudinal factors of bused fourth- and fifth-grade white students during the first year of court-ordered desegregation in a large urban district.

This chapter presents a summary of the methods and procedures used to collect and analyze the data, the findings and conclusions derived from this study and the implications and recommendations suggested by the results of this study.

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

The nine hundred subjects of this study were all white students in grades four and five of schools in their first year of court-ordered busing desegregation. They were assigned to schools on the basis of a court-ordered ethnic ratio of 60 per cent minority students, 40 per cent majority. None of the schools included in this study was ever a predominantly minority-race school.

One instrument, the Iowa Test of Basic Skills, yielding five types of academic achievement measurements, was used to collect
data for this study. Three instruments, the School Attitude Inventory, the Academic Self-Concept Scale, and the Intellectual Achievement Responsibility Scale, provided measures of the subjects' attitudinal areas.

The data were collected during the first academic year of a court-ordered desegregation plan in the regular classroom situations of the subjects. The data collected from all the instruments were transposed into a form compatible with computer analysis. An analysis of covariance was applied to obtain adjusted mean scores from academic achievement variables. A one-way analysis of variance was used to analyze the mean scores derived from attitudinal variables. The results were used to reject the null hypotheses formed as a basis for the statistical treatment of the research hypotheses of this study.

Findings

Statistical treatment of the data presented in Chapter IV established the basis for the rejection or retention of the null hypotheses. A null hypothesis was rejected when the probability level computed by the analysis of variance was equal to or less than .05, whereas the null hypothesis was retained at probability levels greater than .05. The analysis and interpretation of the data resulted in the following findings.
1. Based on the selected attitudinal factors measured, fourth-grade bused white students in this study were as well adjusted at school as were non-bused white fourth-grade students.

2. No significant difference was found in academic achievement between bused and non-bused white fourth-grade students.

3. Based on the selected attitudinal factors measured, fifth-grade bused white students in this study were as well adjusted at school as were non-bused white fifth-grade students.

4. No significant difference was found in academic achievement between bused and non-bused white fifth-grade students.

5. There were no significant differences found in this study in the achievement and adjustment of bused and non-bused, middle-class, white fourth- and fifth-grade students when they were bused to court-ordered integrated schools similar to their neighborhood schools.

Conclusions

Based on the findings of this study and subject to the limitations posed by the research sample, the following conclusions are drawn.

1. When middle-class, white fourth-grade students are bused to desegregated schools similar to their neighborhood schools,
they can be expected to sustain positive attitudes about school and self.

2. The achievement made by fourth-grade bused white students in desegregated schools can be anticipated to be equivalent to the achievement of non-bused white students in desegregated neighborhood schools.

3. When middle-class, white fifth-grade students are bused to desegregated schools similar to their neighborhood schools, they can be expected to sustain positive attitudes about school and self.

4. The achievement made by fifth-grade bused white students in desegregated schools can be anticipated to be equivalent to the achievement of non-bused white students in desegregated neighborhood schools.

5. The effects of busing on middle-class, white fourth- and fifth-grade students transported to environments similar to their former schools appear unrelated to school achievement and attitudinal factors toward school

Recommendations

On the basis of this study's findings, conclusions, and personal observations, the following recommendations are made.

1. It is recommended that similar studies of this nature be conducted by each school system under a court-ordered
desegregation plan in order to collect and compile data needed by judges and federal courts to aid in determining educationally-productive, court-ordered desegregation programs. Desegregation court orders are unique for each school system, and compilation of the educational results of each order would enable judges to plan and mandate those arrangements which prove most educationally effective for all students.

2. It is recommended that similar studies of this nature be conducted in order to produce evidence that "white flight" is a result of complex societal problems in urban areas rather than the result of objective assessment of the loss of educational quality in urban school districts.

3. It is recommended that a longitudinal study be conducted to investigate the effects of busing on white students for an extended period of time. This study should also provide information on the decrease or increase of white students participating in court-ordered busing programs.

4. It is recommended that a parallel study be conducted to examine the effects of busing on minority students.

5. It is recommended that the findings of this study be utilized judiciously with proper regard for the limitations set forth in the context of the situation studied.
6. Based on the findings of this study, it would appear that the age, grade level, and maturation level of children may be important factors in the degree of positive achievement effect to be gained from busing for desegregation purposes. Therefore, additional research dealing with a wider range of age and grade levels should be undertaken.
APPENDIX A

FACTOR STRUCTURE OBTAINED FOR SCHOOL ATTITUDE AND SELF-CONCEPT ITEMS
## Factor Structure Obtained for School Attitude and Self-Concept Items

<table>
<thead>
<tr>
<th>Scale and Item</th>
<th>Factor Loadings(^1)</th>
<th>School Attitude (Factor I)</th>
<th>Self-Concept (Factor II)</th>
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<tr>
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<td>11</td>
<td>.11</td>
<td>.69</td>
<td></td>
</tr>
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</table>

\(^1\)\(N = 787\); unity was used as communality estimates.
APPENDIX B

SCHOOL ATTITUDE INVENTORY
SCHOOL ATTITUDE INVENTORY

Directions: You will answer questions 101 to 111. The questions you will be asked are to find out what you think about school. If your answer to a question is yes, mark the letter A on your answer sheet. If your answer is no, mark the letter B on your answer sheet. Remember, there are no right or wrong answers. Just give the answer which seems to tell how you generally feel.

Below is an example. Do not mark the example on your answer sheet.

Example

Do you like school?

A. Yes   B. No

If you like school, you would answer yes, and you would mark the letter A on your answer sheet.

A   B

If you do not like school, you would answer no, and you would mark the letter B on your answer sheet.

A   B

101. Do you like to stay home from school?

A. Yes   B. No

102. Do most school days seem like they never end?

A. Yes   B. No

103. Are there many fun things to do at school?

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

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

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

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

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

109. Are you usually happy when you are at school?
   A. Yes
   B. No

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

111. Do you feel good when you're at school?
    A. Yes
    B. No
APPENDIX C

ACADEMIC SELF-CONCEPT SCALE
ACADEMIC SELF-CONCEPT SCALE

Directions: You will answer questions 112 to 122. The questions you will be asked are to find out what you think about school. If your answer to a question is yes, mark the letter A on your answer sheet. If your answer is no, mark the letter B on your answer sheet. Remember, there are no right or wrong answers. Just give the answer which seems to tell how you generally feel.

Below is an example. Do not mark the example on your answer sheet.

Example

Do you like school?

A. Yes  B. No

If you like school, you would answer yes, and you would mark the letter A on your answer sheet.

A  B

If you do not like school, you would answer no, and you would mark the letter B on your answer sheet.

A  B

112. Is school work fairly easy for you?

A. Yes  B. No

113. Do you often get discouraged in school?

A. Yes  B. No

114. Do you often have trouble doing assignments?

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

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

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

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

119. Do you forget most of what you learn in school?
   A. Yes  B. No

120. Does your schoolwork make you feel that you are not smart enough?
   A. Yes  B. No

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

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

INTELLECTUAL ACHIEVEMENT RESPONSIBILITY SCALE
INTELLECTUAL ACHIEVEMENT RESPONSIBILITY SCALE

Directions: You will answer questions 151-170. In this test you will be asked to complete twenty unfinished sentences by choosing one of two possible answers that begin with the word "because." There are no right or wrong answers so choose the answer which best describes what happens to you or how you feel.

Example

When you get a very high mark on a test, would it probably be

A. because you studied very hard, or

B. because you were very lucky?

If answer "A" is the correct one for you, then you should mark the letter "A" on your answer sheet.

A      B

If answer "B" is the correct one for you, then you should mark the letter "B" on your answer sheet.

A      B

151. If a teacher says to you, "Your work is find," is it

A. something teachers usually say to encourage students, or

B. because you did a good job?

152. When you do well on a test at school, is it more likely to be

A. because you studied for it, or

B. because the test was easy?
153. Suppose your parents say you are doing well in school. Is this likely to happen
   A. because your schoolwork is good, or
   B. because they are in a good mood.

154. When you lose at playing a game, does it usually happen
   A. because the other player is good at the game, or
   B. because you don't play well?

155. If your parents tell you that you are bright or clever, is it more likely
   A. because they are feeling good, or
   B. because of something you did?

156. If you solve a puzzle quickly, is it
   A. because it wasn't a very hard puzzle, or
   B. because you worked on it carefully?

157. If a boy or girl tells you that you are dumb, is it more likely that they say that
   A. because they are mad at you, or
   B. because what you did really wasn't very smart?

158. Suppose you did better than usual in a subject at school. Would it probably happen
   A. because you tried harder, or
   B. because someone helped you?
159. When you find it hard to work arithmetic or math problems at school, is it
   A. because you didn't study well enough before you tried them, or
   B. because the teacher gave problems that were too hard?

160. When you don't do well on a test at school, is it
   A. because the test was hard, or
   B. because you didn't study for it?

161. When you win at playing a game, does it happen
   A. because you play real well, or
   B. because the other person doesn't play well?

162. If your parents tell you you're acting silly and not thinking clearly, is it more likely to be
   A. because of something you did, or
   B. because they happen to be feeling cranky?

163. If a teacher says to you, "Try to do better," would it be
   A. because this is something he or she might say to get students to try harder, or
   B. because your work wasn't as good as usual?

164. If a boy or girl tells you that you are smart, it is usually
   A. because you thought up a good idea, or
   B. because they like you?
165. Suppose you don't do as well as usual in a subject at school. Would this probably happen

A. because you weren't as careful as usual, or
B. because somebody bothered you and kept you from working?

166. Suppose your parents say you aren't doing well in your work at school. Is this likely to happen more

A. because you work isn't very good, or
B. because they are feeling cranky?

167. When you forget something you heard in class, is it

A. because the teacher didn't explain it very well, or
B. because you didn't try very hard to remember?

168. When you find it easy to work arithmetic or math problems at school, is it usually

A. because the teacher gave you easy problems, or
B. because you didn't try very hard to remember?

169. If you can't work a puzzle, is it more likely to happen

A. because you are not good at working puzzles, or
B. because the directions weren't written clearly enough?

170. When you remember something you heard in class, is it usually

A. because you tried hard to remember, or
B. because the teacher explained it well?
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