THE IMMEDIATE EFFECTS OF CLASSROOM INTEGRATION
ON THE ACADEMIC PROGRESS, SELF-CONCEPT,
AND RACIAL ATTITUDE OF NEGRO
ELEMENTARY CHILDREN

APPROVED:

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[Signatures]
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ON THE ACADEMIC PROGRESS, SELF-CONCEPT,
AND RACIAL ATTITUDE OF NEGRO
ELEMENTARY CHILDREN

DISSERTATION

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

For the Degree of

DOCTOR OF EDUCATION

By

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Denton, Texas
August, 1969
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1969
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CHAPTER I

INTRODUCTION

Although the legal intent of the Supreme Court in ordering desegregation of the public schools in May, 1954, is clear, benefits expected to accrue for Negro children have not been clearly identified. Consideration given by the Court to the problem included evidence from contemporary social scientists (5, p. 281), as well as legal aspects, and that former source probably contributed considerably to the Court's concern for the "hearts and minds" (5, p. 280) of the Negro children. Chief Justice Warren succinctly stated that the opinion of the Court in this matter was amply supported by the findings of modern authorities (5, p. 279).

These clues indicate that both tangible and intangible benefits are expected to accrue for Negro children as they attend desegregated schools. A need exists for a clarification and identification of such benefits and an assessment of the extent to which such advantages are being realized for Negro children now attending racially mixed schools. After reviewing the available data on desegregation, Pettigrew complained that psychological research had failed to make substantial contributions to the desegregation process and that, in particular, before-and-after experimental studies were needed (37). Although only a significant beginning has been made in the desegregation procedure, in terms of numbers or percentages of Negro children affected, the benefits will be individual and should, if measurable, be in evidence.
It would, then, be the primary purpose of the present study to provide evidence which would help identify some of the immediate benefits which might reasonably be expected to accumulate for Negro children and to relate these gains to expectations of the Supreme Court as they resolved the problem, Brown vs. Board of Education (5), channeled to them through the courts of Delaware, Virginia, Kansas, and South Carolina.

Statement of the Problem

The problem of the present study is to determine if there is a measurable effect on the academic progress, self-concepts, and racial attitudes of newly integrated Negro students in grades four, five, and six after one year of integration.

More specifically:

1. How will the change in performance on a standardized achievement test battery of Negro students, grades four, five and six, attending integrated classrooms for a school year compare with that of similar Negro students attending de-facto-segregated classrooms?

2. How will the change in a measure of self-concept of Negro students, grades four, five, and six, attending integrated classrooms for a school year, compare with that of similar Negro students attending de-facto-segregated classrooms?

3. How will the change in a measure of attitude toward white persons of Negro students, grades four, five, and six, attending integrated classrooms for a school year, compare with that of similar Negro students attending de-facto-segregated classrooms?
4. Will the changes in academic progress, self-concept, or racial attitudes of the Negro students attending integrated classrooms be related to the proportion of integration within the respective classrooms?

5. Will the changes in academic progress, self-concept, or racial attitudes of the Negro students attending integrated classrooms be related to their individual ability level or sex?

Hypotheses

The following hypotheses were investigated by statistical analysis of data collected:

1. The mean gain of the experimental subjects on a standardized achievement battery will significantly exceed that of the control subjects.
   a. When relative gains of experimental subjects over control subjects on academic achievement are compared for three mental ability levels, high-average-low, a positive relationship will be found between mental ability level and relative gain in achievement.
   b. Relative gains of the experimental subjects on achievement will be unrelated to their sex.
   c. When relative gains of experimental subjects are compared for three levels of proportion of classroom integration, approximately 25 per cent Negro membership--50 per cent Negro membership--and 75 per cent Negro membership, an inverse relationship will be found between relative gains in achievement and proportion of classroom integration.

2. The mean change on a measure of self-concept of the experimental subjects will be favorable and significantly exceed that of the control subjects.
When relative changes of experimental subjects on a measure of self-concept are compared for three mental ability levels, high-average-low, a positive relationship will be found between mental ability and a favorable relative change in self-concept.

Relative changes of the experimental subjects on a measure of self-concept will be unrelated to their sex.

When relative changes of experimental subjects on a measure of self-concept are compared for three levels of proportion of classroom integration, approximately 25 per cent Negro membership-50 per cent Negro membership-75 per cent Negro membership, an inverse relationship will be found between favorable, relative changes in self-concept and proportion of classroom integration.

The mean change on a measure of attitude toward white persons of the experimental subjects will be favorable and significantly exceed that of the control subjects.

When relative changes of experimental subjects on a measure of attitude toward white persons are compared for three mental ability levels, high-average-low, no relationship will be found between mental ability level and relative change in racial attitude.

Relative changes of the experimental subjects on a measure of attitude toward white persons will be unrelated to their sex.

When relative changes of experimental subjects on a measure of attitude toward white persons are compared for three levels of proportion of classroom integration, approximately 25 per cent Negro membership-50 per cent Negro membership-75 per cent Negro membership, an inverse relationship will be found between favorable, relative changes on racial attitude and proportion of classroom integration.
4. The final measure of self-concept of the control group will indicate that only non-significant change has occurred.

5. The final measure of attitude toward white persons of the control group will indicate that only non-significant change has occurred.

Background and Significance of the Problem

A search for anticipated benefits for Negro children in desegregated schools would properly start with the 1954 Supreme Court decision which held that racially segregated public schools were unsatisfactory in view of the "equal protection" clause of the fourteenth amendment to the Constitution (5, p. 281).

Section I, only, of that amendment deals with civil rights:

All persons born or naturalized in the United States, and subject to the jurisdiction thereof, are citizens of the United States and of the state wherein they reside. No state shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States; nor shall any state deprive any person of life, liberty, or property without due process of law; nor deny to any person within its jurisdiction the equal protection of the laws (14, p. 143).

The assortment of plaintiffs in the cases combined into Brown vs. Board of Education based their pleas on lack of equal protection, contending that separate schools could not, by their very nature, be equal. "This segregation was alleged to deprive the plaintiffs of the equal protection of the laws under the Fourteenth Amendment" (5, p. 275).

The basic and primary question, then, before the Court was whether or not state-imposed segregated schools for Negro children were "equal" to those provided for white children even when equal in all tangible, educational facilities.
We come to the question presented: Does segregation of children in public schools solely on the basis of race, even though the physical facilities and other tangible factors may be equal, deprive the children of the minority group of equal educational opportunities? (5, p. 270).

Lower courts had followed the "separate but equal" doctrine of *Plessy v. Ferguson* in denying relief to the plaintiffs. However, both Delaware and Kansas courts had concluded that separate schools were inherently unequal:

Segregation of white and colored children in public schools has a detrimental effect upon the colored children . . . denoting the inferiority of the Negro group. A sense of inferiority affects the motivation of the child to learn. Segregation with the sanction of law, therefore, has a tendency to retard the educational and mental development of Negro children . . . (5, p. 280).

. . . State imposed segregation in education itself results in the Negro children, as a class, receiving educational opportunities which are substantially inferior . . . (5, p. 280).

Prior to 1894 several post-civil war decisions tended to view any racial discriminations as unconstitutional. A quotation from *Strauder v. Virginia*, 1880, is cited in the footnotes of the 1954 Opinion: "The words of the amendment . . . contain a necessary implication of a right to exemption from legal discriminations, implying inferiority in civil society . . ." (5, p. 277).

The Court's attempt to examine the circumstances of the adoption of the fourteenth amendment and ratification by the several states cast little or any intent at time regarding application to public education (5, p. 276). The Court became convinced (5, p. 279) that the question of equality must be decided on the basis of the status of education in contemporary United States, rather than in a bygone era, and it was in this context that the
writer of the opinion, Chief Justice Warren, framed the phrase, "... We cannot turn the clock back!"

In approaching this problem, we cannot turn the clock back to 1868 when the Amendment was adopted, or even to 1896 when Plessy v. Ferguson was written. We must consider public education in the light of its full development and its present place in American life throughout the Nation. Only in this way can it be determined if segregation in public schools deprives these plaintiffs on the equal protection of the laws (5, p. 279).

Several, more recent decisions were useful to the Court: Gaines v. Canada; Sweatt v. Painter; Sipuel v. Board of Regents; McLaurin v. Oklahoma States Regents (5, p. 280). These cases, all concerned with the application of the Plessy v. Ferguson doctrine to higher (graduate) education, initiated consideration of "intangible" as well as tangible features in determining equality. Specifically, Sweatt v. Painter called attention to "qualities which are incapable of objective measurement" (5, p. 280).

Finally, available to the judges, individually and collectively, was a wealth of information and findings from the field of behavioral science. While the degree to which such data influenced the Court is debatable, not so is the clear evidence that this expert, non-legal material was a factor in the decision. The opinion contains the statement that "this finding is amply supported by modern authority" (5, p. 280). In this context Warren cites, in footnotes, materials of K. B. Clark, Witmer, Kotinsky, Deutscher-Chein, Brameld, Frazier, and Myrdal (5, p. 281). Also, quoted in the opinion is an excerpt from the lower Kansas court which also considered opinions of social scientists (5, p. 280).

On May 17, 1954, the Supreme Court of the United States, then, held that state-imposed segregated schools could never be equal and therefore violated the "equal protection" clause of the fourteenth amendment:
We conclude that in the field of public education the doctrine of "separate but equal" has no place. Separate educational facilities are inherently unequal. Therefore, we hold that the plaintiffs are . . . deprived of the equal protection of the laws guaranteed by the fourteenth amendment (5, p. 280).

The Court made it quite clear in the Opinion that no amount of equalizing could satisfy the constitution:

. . . segregation shuts out equality by its very nature, however alike the school buildings, teachers, and books of both white and black children (30, p. 133).

and

To separate them from others of similar age and qualifications solely be the cause of their race generates a feeling of inferiority as to their status in the community that may affect their hearts and minds in a way unlikely ever to be undone (5, p. 280).

Review of the Literature

Desegregation and Academic Achievement

The Deutscher-Chein survey (12), cited by Warren in the Opinion (5, p. 281), questioned psychologists, anthropologists, and sociologists nationally concerning the possible detrimental effects of segregated schools on Negro children. Answers indicated that 90 per cent of those returning the questionnaire felt that such effects existed, while only 2 per cent saw no damage.

Although the respondents to the survey emphasize damage by segregation to the Negro child's personality, most conspicuous is the prevailing educational lag of Negro children at all levels, in all sections of the nation, rural and metropolitan. All data picture Negro children, regardless of the source of the segregation, as starting behind and falling further behind each year (11). In their final year of high school, Negro
students in de-facto-segregated schools are well over three years behind national norms, and though the lag is predominant in the South, it exists almost to the same extent in the Northeast (11). Alsap (1) estimates that only 10 per cent of Negro students finishing high school obtain the equivalent of a high school education. Roberts found that less than 3 per cent of Negro graduates of segregated high schools could meet standards in non-segregated colleges (24, p. 387).

Fischer and Lahr (15) reviewed the Coleman study (11), as well as other literature related to the performance of minority children in public schools, and interpreted the data to

... confirm the findings of previous studies showing that Negroes obtained the lowest levels, whites the highest, and other minority groups (with the exception of Orientals) fall in between. The differences between Negro and white means (on standardized tests) increased as years of schooling increased, and these differences were greater in the South than in the North (15, p. 35).

Data gathered by the United States Commission on Civil Rights in 1967 (49) indicated that mere school attendance did nothing to close the gap between Negroes and whites and that the gap tended to widen (4, p. 4). Coleman reports that the drop-out rate of Negro scholastics is greater in the metropolitan Northeast than in the non-metropolitan South (11, p. 21).

Any question of the innate intellectual capacity of Negroes has been so thoroughly discounted as to be denied review (4, p. 1). Klinesberg (27), Pettigrew (37), and North (4) are among those providing recent evidence that no inherent intellectual inferiority exists. Klinesberg's statement is typical. "... there is no scientifically acceptable evidence for the view that ethnic groups differ in innate abilities" (4, p. 202).
As has been indicated, it was the thinking of the Supreme Court and authorities cited by them that only integration into the main stream of American culture would allow Negro children opportunities for normal intellectual development.

Recent reports from desegregated schools provide evidence that the educational gap is being narrowed. Hansen (20) reports a general rise in scores on national achievement tests by both Negro and white children after integration in Washington, D. C. In Louisville public schools Negro students out-gained white students (44). In New York City all students gained after ten elementary schools were paried to achieve racial balance (4). Negro students in Jackson, Michigan, gained an average of 6.88 points on mental ability tests after desegregation (4).

In reviewing the literature on the effects of integration in metropolitan areas, Berkowitz (4) found compensatory programs ineffectual in obtaining achievement gains for Negro youths in contrast to the effects obtained through bussing the students to achieve racial balance. Negro students bussed to predominantly white schools in Project Concern in Hartford, Connecticut, significantly out-performed non-bussed Negroes in de-facto-segregated schools (4). Attempts to maintain a range of 10 to 30 per cent Negro membership in elementary schools in White Plains, New York, by bussing students resulted in improved achievement on part of Negro students without loss of achievement by white scholastics (4).

The United States Commission on Civil Rights reports scholastic gains for Negro children in bussed programs in Syracuse (where they doubled the rate of gain of children left in compensatory programs), Berkeley, Seattle, and Philadelphia (4). In the latter program, bussed children showed marked
improvement over a matched sample of Negro children remaining in de-facto-
segregated schools.

In reviewing the effects of desegregation in their state, the Massa-
chusetts State Board of Education reported success. "White and Negro
children make substantial gains in achievement as a result of integration" (4, p. 4).

Berkowitz concluded that Negro scholastic achievement will improve
steadily and that there will be no damage to performance of white scholas-
tics. Katz' (24) conclusions were similar. "Most of it (the published
information) presents a favorable picture of Negro academic adjustment in
racially mixed settings" (24, p. 384).

Katz, however, complained that little relevant data had been publish-
ed from Southern states where desegregation had been inaugurated (Katz,
p. 384). (24)

Other data indicates that desegregation may not automatically insure
academic success on the part of Negro children. Day (23, p. 38) testified
that disturbing portions of Negro children attending desegregated schools
failed to keep pace with white peers, and Wyatt (23, p. 384) reported that
Negro scholastics integrated at upper grade levels met with substantially
more difficulty in competing with white students in academic areas. While
integration in New Rochelle improved motivation and performance of Negroes,
89 per cent of Negro students integrated into a high socio-economic school
setting failed to rise out of the lower quarter of the school's achievement
spectrum (22, 4). Wolman (54, 4) reported the gain after one year to be
normal for the sample involved in New Rochelle and that only the pre-schoolers
showed marked improvement. Samuels (40) found only negligible mean gain
after one year of integration and warned that several years will be re-
quired to close the educational gap.

Specific studies tend to reinforce the findings of the general studies
that Negro students will close the academic gap. Wey (51, 4) failed to
discover any teachers or administrators who felt the need to lower stan-
dards after desegregation. Matzen (31) found integrated Negro children
still far behind but catching up, making more gains than white scholastics.
He reported Negro children 1.2 years behind white students in grade five,
but only .6 years behind when in grade seven. Gordon (16) saw a general
rise in achievement of Negro high school students in a setting of 8 per-
cent Negro enrollment. Concerning proportion of integration, Matzen
attempted without success to find a relationship between it and achieve-
ment gains.

Expectations of recent writers for academic improvement of Negro
scholastics remain high and are supported by traditional theories which
view desegregation as contributing to the aspirations and motivation of
Negro youngsters. Katz reasserts that individuals are responsive to norms
of those with whom they desire to associate and that children who are
accepted by peers tend to accept peer norms more willingly (24, p. 382).

Coleman contends that, for minority-group children from non-supportive
backgrounds, attendance in a school with others of supportive backgrounds
and higher aspirations was likely to have a positive effect on achievement
(11, p. 22).

Berkowitz maintains that data obtained by the United States Commission
on Civil Rights supports the thesis that the nature of the peer group is
the most important factor in academic success and that being in a school
with whites is more basic to academic growth of Negro students than having good teachers (4, p. 4). Support for this position comes from Coleman who concluded that individual school characteristic accounted for only a small amount of the lack of progress of minority-group children in contrast to the importance of attending schools which were attended predominantly by minority-group children (11, p. 21). More specifically, data obtained by the United States Commission on Civil Rights shows Negro children's achievement at integrated, low socio-economic schools a full grade higher than Negro children at de-facto-segregated schools while the achievement of lower socio-economic Negro children integrated into higher socio-economic white school averaged two grades higher than their counterparts in de-facto schools (4, p. 4).

Unfavorable aspects for Negro children of integration have, also, been anticipated. Kaplan (22, 4), Day (24, p. 384), and Wyatt (24, p. 384) warn that substantially higher standards may result in Negro children becoming discouraged. Atkinson's motivation theory that strength of motivation is highest when probability of success centers around .50, decreasing as it approaches zero and unity, may be relevant (2, 24, p. 383). Katz (24) maintains that academic failure poses psychological stress especially when such failure is equated with social failure by peers, parents, or teachers. Such stress may inhibit the learning of complex skills (24). Probable responses to failure threat, according to Katz (24), would be overt aggression, withdrawal and lowered self-esteem.

Concern is, also, expressed for high ability Negro students who may lessen or abandon efforts to achieve so as not to arouse the hostility of the dominant group (24). The extent of the social threat present would govern the operation of this principle.
Summarizing, the expectations for improved academic performance of Negro students in desegregated settings has been borne out by most general data available.

Desegregation and Self-Esteem

Damage to the personality, particularly to self-esteem, was consistently emphasized by social scientists replying to the Deutscher-Chein survey as a prime and basic evil of school segregation:

Feelings of inferiority and of not being wanted are induced by segregation (52, p. 139).

Submissiveness, martyrdom, feelings of persecution, withdrawal tendencies, self-ambivalence, and aggression are likely to develop (52, p. 139).

Tait's study of the effect of social segregation on children of another minority group, cited at the Mid-century White House Conference on Children and Youth in 1950 showed similar results: inferiority, poor social adjustment, introversion, and emotional instability (52, p. 140).

The Supreme Court's agreement with these findings is evidenced by Chief Justice Warren's phraseology in the Opinion: "... generates a feeling of inferiority as to their status in the community that may affect their hearts and minds in a way unlikely ever to be undone..." (5, p. 279).

The lower court in Kansas, while legally holding to the "separate but equal" traditional doctrine, nevertheless stated their denial of the moral correctness of that position: "Segregation of white and colored children in public schools has a detrimental effect upon the colored children ... denoting the inferiority of the Negro group..." (5, p. 280).

Other writers since 1954 point to de-facto segregation as perpetuating the same personality damage as legal separation and focusing on the strong
relationship between self-esteem and performance. Tumin emphasizes the
non-effectiveness of programs aimed at merely up-grading instructional
programs for de facto segregated Negro youths: 

... all Negro or predominantly Negro schools will remain
inferior precisely because they are all Negro or predominantly
Negro. ... to maintain a school as all or predominantly Negro
is to communicate vividly every day and every moment to the
Negro children ... that they are second class, inferior
people (48, p. 8).

Specifically, Coleman's report to the United States Department of
Health, Education, and Welfare indicates that poor self-esteem fosters a
lack of belief in one's ability to control his environment and his destiny
and that this attitude is directly related to school performance. He con-
cludes that Negro children are less likely to believe in this control and
that the belief weakens as the proportion of Negroes in the school exceeds
50 per cent (15, p. 35).

Mussen-Conger-Kagan speak of the anxiety occurring when an individual
feels that he is "not able to handle the problems and stresses the environ-
ment poses" (33, p. 147). Consequently, lower class children in particular,
may feel that planning for the future is unwise and of little value (33,
p. 378).

Ellsworth (13) sees maladaptive behavior as resulting from and direct-
ly related to frustration of the need for a positive self-concept. Zimbel-
man (56) concludes that, as a result of discrimination, Negroes fail to
see themselves as a useful part of the environment. Haggstrom (19) finds
that the primary personality factor differentiating whites and Negroes is
self-esteem and that Negroes in segregated housing areas have lower self-
esteeem than Negroes living in integrated residential areas.
Marrow blames segregation for maintaining faulty, demeaning stereotypes which, in turn, perpetuate poor self-concepts through the provision of incomplete evidence about the segregated group:

If, for example, the only contacts a white has with Negroes is knowing them as maids, janitors, porters, and the like, communication is apt to stay at that level and never get as far as a personal discussion. In such circumstances, a single, unpleasant experience can become the white premise for antagonism toward all Negroes (30, p. 38).

The Educational Policies Commission of the National Education Association agrees that segregation complicates the elimination of faulty racial stereotypes. "Laws or customs which enforce segregation cannot prevent contact between cultures; they merely prevent those types of contact which could do the most good" (35, p. 2).

Data to support the anticipation of improved self-concepts due to school integration have not been forthcoming from studies of Negro schoolastics. Lesser (28, p. 24) suggests that studies are needed which trace changes in self-concepts in Negro (and white) children as segregated schools become progressively racially balanced.

A few studies have attempted to measure changes in self-concept after short periods of integration. Stinson (45) re-measured self-concepts of high school Negroes and whites after six months of integration and found no significant change in either group. Brown (8) failed to find changes in eighth grade Negro boys and girls after a racially-mixed, summer enrichment program. In summary, research data have not yet substantiated the hopes for improvement in this area as a result of school desegregation.
Segregated schools were seen as promoting and maintaining racial animosity by respondents to the Deutscher-Chein survey. Typical remarks by these social scientists were:

Minority group children are characteristically . . . hostile toward members of the dominant group, their own group, and other minority groups (52, p. 139).

. . . feelings of persecution, withdrawal tendencies, and aggression are likely to develop (52, p. 139).

Marrow points out that segregation ensures the non-availability of complete evidence about the segregated group, thus aiding the development and maintenance of faulty stereotypes (30) which serve to support racial disharmony.

However, participation in racially mixed groups, alone, has not been found to be sufficient to eliminate racial bias. Studies of groups of children in traditionally integrated schools in the North indicate that awareness of racial affiliation and in-group cohesion is well established by middle childhood. Moreno's (41) and Criswell's (41) work pointing to age ten (grade five) as the established age of onset of prejudiced behavior in children has been generally accepted (41, p. 358). Havighurst (21) agrees that middle childhood is the period in which the learning of social attitudes is a fundamental task and Mussen (33) contends that highly structured peer groups develop by age ten. Some writers, Clark (10), Zeligs (55), Horowitz (41), and Lambert (41), see strong ethnic identification and cohesion developing substantially as early as kindergarten.

Self-preference has been found to be stronger among minority-group children. Criswell (24), Clark (10), and St. John (15) independently find strong Negro self-preference in mixed groups. Radke and Lambert (33) find
stronger cleavage among Jewish and very young Oriental children respectively than among dominant group children. In contrast, Parsons (36) noted greater self-preference among Anglo-Americans than among Latin-Americans in a California school setting. Parsons (36), Singer (43), and Kettig (26) agreed that self-preference was greater in females than in males.

Among newly integrated youths, studies of attitude change expose a trend toward alleviation of racial estrangement. Fifth-grade children were found by Singer (43) to show less prejudice after integration, with girls less positively affected than boys. Gordon (16) found females less affected in a high school setting where Negroes composed 8 per cent of the enrollment; however, he found a general decline in racial self-preference for the student body as a whole.

Most of the change in racial attitude has been restricted to Negro students. Campbell (46) found no change in attitudes of white junior high students after integration in a before-and-after study. Gordon (16) found Negro students more positively affected by integration than white students in the 8 per cent setting, but Gottlieb (17) warned that Negro self-preference increased as the proportion of Negroes increased at another high school. Haggstrom (19) found Negro high school students becoming less prejudiced toward whites after school integration and adult Negroes becoming more accepting of whites after residential integration. Meyes (32) restricted the positive effect on racial attitudes to Negro high achievers.

In settings other than school, studies show the same decline in ethnic cleavage. Radke (39) reported greater willingness on the part of white children, aged 8-13, to accept Negroes as friends after integrated experiences
at a summer camp. That writer noted relevancy of the attitude of the individual camp counselors in this regard, indicating that it could be considered the key catalyst in improving racial relations among the campers. In another study of children in summer camp Mussen (33) concluded that the individual personality of the camper determined both the extent and direction of attitude change. Children who were hostile toward parents and peers became more prejudiced; others less. Merchant seamen are reported by Marrow to become substantially more accepting of Negroes after experiences with them as shipmates (30).

Contact, alone, between groups may not, of itself, erase traditional hostility. Havighurst (21) warns that inter-group experiences need to be pleasant to alleviate inter-group stress: "If the group is mixed in racial or religious or economic backgrounds, and if the peer group experience is pleasurable, the children will learn to appreciate and to enjoy being with people of other social groups" (21, pp. 57-58).

Interdependence is identified by Marrow (30) and Levin (30) as a moving force in developing group cohesion, and they suggest that inter-group experiences which create interdependence will lessen inter-group conflict. Sherif (42, 30), using such activities, resolved artificially-induced group hostility among boys in a summer camp setting.

In recapitulation, studies in the area of attitude change indicate that hopes for the improvement of racial harmony through school integration are realistic. Recommendations for supplementing mere contact include provision for interdependent activities (30), efforts to ensure that contacts will be favorable (21), and emphasis on the correctness of the attitude of authority figures involved (33).
Summary Statement

Data obtained since 1954 provide very meager experimental evidence pertaining to the effects, immediate or lengthy, of integration on Negro students. The present study differs from preceding studies in one, if not more, of the following respects:

1. It compared changes of integrated Negro students with changes of matched subjects in de-facto-segregated schools.
2. Test re-test data were collected after an interval of one school year.
3. Only newly-integrated Negro students are included.
4. It focuses on elementary school children whose attitudes and academic performance are less likely to be as fixed as older children's.

Definitions

1. Desegregated Schools—schools in which the white membership does not exceed 95 per cent of the total (Wolff, 53).
2. Integrated Schools—synonymous, for this study, with desegregated schools.
3. Segregated Schools—de-facto-segregated schools in which the Negro membership exceeds 95 per cent of the total.
4. Non-integrated Schools—synonymous, for this study, with segregated schools.
5. Racial Attitudes—prejudiced attitudes held by Negroes for white persons or vice versa; attitudes toward other racial, national, or religious minority groups are not involved.
Limitations

The basic limitation in the study is the time factor. Long range effects may not be necessarily exposed during a one-year period of integration.

A second limitation is involved in the restriction of the study to three characteristics. There is no intent to suggest that important changes in other areas will not occur. Also, interpretation of the results should acknowledge that only one measure of each characteristic was undertaken.

Attempts to generalize to other populations should be restrained by the homogeneous nature of the sample observed in this study:

1. The range of distribution along the socio-economic continuum of the available subjects is narrow.

2. The age and grade level is restricted.

3. The experimental subjects lacked previous experience in integrated school situations.

4. The experimental group was integrated into a school population in which it was the only minority group.

5. The experimental group may represent a sample of the population that is more highly mobile than usual.

6. The experimental subjects will be 'new' students in a school as well as being new to a racially mixed setting.


CHAPTER II

PROCEDURE FOR GATHERING DATA ABOUT THE GROWTH
OF INTEGRATED NEGRO CHILDREN

The general procedure of the present study was to measure changes of a group of Negro elementary students on three criteria before-and-after one year of classroom integration and compare these changes with those of a matched group of Negro students who attended a de-facto-segregated school. The criteria measured were academic progress, self-concept, and racial attitude.

Sampling Procedure

All integrated elementary schools in a large, urban school district were considered as possible sources of integrated students. Enrollment in the total district totalled 85,448 shortly after the opening of school in 1968 (10). Full integration had been achieved for the school year 1968-69 with the integration of all high schools, culminating a series of steps began in 1964 with the integration of first grades.

Several integrated schools were eliminated from consideration due to the presence of another ethnic minority-group. The design specified that Negro children would constitute the only minority group, all others to be identified as members of the white, dominant group. Other schools were excluded because of the small number of newly-integrated Negro students at the intermediate grade-level in conjunction with an insignificant proportion of Negro membership. Thus, the number of schools appropriate for
use as sources of experimental subjects was narrowed to six; hence to be referred to as target schools.

Proportion of Negro membership in the target schools ranged from 13 per cent to 74 per cent. All had white principals, including two female principals, and predominately white faculties. At the beginning of the school year, of 113 teachers serving the target schools, fifteen were Negro teachers. Student memberships ranged from approximately 250 to 850, averaging around 500 students per school. Table I shows the total membership of target schools to be 2,965 students shortly after the opening of school, including 1,110, or 37 per cent, Negroes. Total membership of all elementary schools in the school district was 42,580 of which 11,130, or 26 per cent, were Negroes.

TABLE I

STUDENT MEMBERSHIP IN TARGET SCHOOLS

<table>
<thead>
<tr>
<th>School</th>
<th>Total Enrollment</th>
<th>Negro Enrollment</th>
<th>Per Cent Negro Enrollment</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>251</td>
<td>41</td>
<td>16%</td>
</tr>
<tr>
<td>#2</td>
<td>601</td>
<td>447</td>
<td>74%</td>
</tr>
<tr>
<td>#3</td>
<td>255</td>
<td>59</td>
<td>23%</td>
</tr>
<tr>
<td>#4</td>
<td>855</td>
<td>166</td>
<td>20%</td>
</tr>
<tr>
<td>#5</td>
<td>480</td>
<td>331</td>
<td>69%</td>
</tr>
<tr>
<td>#6</td>
<td>523</td>
<td>66</td>
<td>13%</td>
</tr>
<tr>
<td>Total</td>
<td>2965</td>
<td>1110</td>
<td>37%</td>
</tr>
</tbody>
</table>
All schools involved in the study operated under the same administrative policies, used identical textbooks and materials, followed the same curriculum guides, and maintained similar patterns of classroom organization. None of the schools involved in the study was, in any way, atypical of other elementary schools in the district except in degree of integration. Five of the six target schools were located in the same general area of the city, and all served school districts representing a very narrow range of socio-economic levels.

Shortly after initial school enrollment was completed in September, 1968, a total of 162 newly-integrated Negro students were identified in the six target schools. Of these, fifty-eight were fourth graders, sixty-seven were fifth graders, and thirty-seven were sixth graders. The students had been assigned to classrooms whose proportion of Negro students was found to vary considerably. Fifty-eight students had been assigned to classes whose Negro membership clustered around 25 per cent; forty-eight to classes whose Negro membership clustered around 50 per cent; fifty-six to classes whose Negro membership clustered around 75 per cent. Seventy-six were boys; eighty-six were girls.

One large, de-facto-segregated school in the same school district was utilized as a source for control subjects because of its location within the same general area of the school district and because it served an area that represented, in comparison to other de-facto-segregated schools in Negro communities, a more heterogeneous socio-economic area. It was anticipated that this characteristic would facilitate matching individual students on socio-economic factors.
Control subjects were matched with experimental subjects on the basis of intelligence quotients, sex, grade level, and family socio-economic status.

The number of pairs of matched subjects was primarily reduced during the course of the year by absences at one of the times of testing, withdrawals of students from schools, and lack of or loss of a satisfactory matched subject. Of the 137 matched pairs who initially took all pre-tests, 123 matched pairs were available at the time of the administration of post-tests. Subjects in two of the target schools were arbitrarily eliminated as their number of subjects was reduced to less than five through withdrawal and absences. As satisfactory matches could be located for only two of the five experimental subjects from professional or middle class backgrounds, all were eliminated from the study. Finally, ninety-nine took all post-tests and, thus, provided the data for the study.

The characteristics of the integrated subjects are shown in Table II. Intelligence quotient groupings approximate the addition and subtraction of one sample standard deviation (11.54) to and from the sample mean (90.01). Fourteen students scoring above an IQ of 100 were labeled "highs" and the twenty-one scoring below an IQ of 80 were labeled "lows." Prior to the examination of the distribution of IQs, consideration was given to the possibility of using, for purposes of delineation, the normal population mean and variances; however, it became obvious that the use of such division points would fail to provide sufficient number of subjects in the upper bracket.
TABLE II
CHARACTERISTICS OF INTEGRATED SAMPLE

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Number of Subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Grade Level</strong></td>
<td></td>
</tr>
<tr>
<td>Grade 4</td>
<td>28</td>
</tr>
<tr>
<td>Grade 5</td>
<td>44</td>
</tr>
<tr>
<td>Grade 6</td>
<td>27</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>99</td>
</tr>
<tr>
<td><strong>Six</strong></td>
<td></td>
</tr>
<tr>
<td>Boys</td>
<td>46</td>
</tr>
<tr>
<td>Girls</td>
<td>53</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>99</td>
</tr>
<tr>
<td><strong>IQ Categories</strong></td>
<td></td>
</tr>
<tr>
<td>Below 80 IQ</td>
<td>21</td>
</tr>
<tr>
<td>80-100 IQ</td>
<td>64</td>
</tr>
<tr>
<td>Above 100 IQ</td>
<td>14</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>99</td>
</tr>
<tr>
<td><strong>Proportion of Integration</strong></td>
<td></td>
</tr>
<tr>
<td>25%</td>
<td>28</td>
</tr>
<tr>
<td>50%</td>
<td>41</td>
</tr>
<tr>
<td>75%</td>
<td>30</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>99</td>
</tr>
</tbody>
</table>

The IQ categories selected, below 80 and above 100, should easily allow generalizations to other similar population as the distribution of IQ scores obtained in the sample is consistent with that usually obtained in samplings of segregated Negro children. Deutsch (9) warns of the homogeneity of scores of disadvantaged children. ". . . there is abundant evidence that children from the lower socio-economic levels commonly associated with minority group status tend to have a smaller spread of scores than do children from middle-income families . . ." (9, p. 148).
Only 25 per cent of Negroes reach or exceed the white median in most intelligence test scores (3). Studies of older disadvantaged Negro children tend to report IQ means of 90 or below and standard deviations near 10 (25). Studies reviewed by Shuey (25) of results of administrations of the Stanford Binet to disadvantaged, pre-school Negro children revealed an average mean of 94.5 and an average standard deviation of 12.0. Jensen (14) reports norms for Negro children average fifteen points below white means.

Because of the many special problems disadvantaged children have with ability tests (9), direct comparison with normative groups are not necessarily valid. A disadvantaged child with an IQ of 86, ranked at the 16th percentile, is not the equivalent in ability to an advantaged child with similar scores (9). Semler and Iscoe (23, 2) report that seven year old Negro children with a mean IQ of 82 performed as well on learning tasks as seven year old white children with a considerably higher mean IQ. It is the position of the present writer that disadvantaged norms should be used when disadvantaged children are compared with advantaged children so that the potential of a disadvantaged child who scores a standard deviation above the mean of his own peer group is seen as a match to the advantaged child scoring one standard deviation above his normative group.

Matching Procedures

Intelligence quotients for fifth and sixth graders in both integrated and segregated schools were available from school records of tests taken at the time these students were in the fourth grades as part of the regular school testing program. Fifth-grade students were matched on basis of intelligence quotients obtained from the previous year's administration
of the Science Research Associates Primary Mental Ability Test, Seventh Edition. These scores were considered useful for matching purposes because of studies which have indicated that intelligence quotients obtained by mid-childhood are substantially stable (1, p. 371; 16, p. 539).

As intelligence quotients for fourth graders were not available, the Kuhlmann-Anderson Mental Ability Test, 7th Edition, was administered to all experimental fourth-grade subjects and to a sufficient number of fourth graders in the control school to insure the availability of suitable matches. The matching of experimental and control subjects resulted in mean intelligence quotients of 90.01 and 90.24 for the two groups respectively. This difference was non-significant (t=.46). Differences in measures of variance within the two groups, standard deviations of 11.54 and 10.37 respectively for the experimental and control groups, did not reach the .05 level of significance as indicated in Table III (t=1.33).

### TABLE III
MENTAL ABILITY SCORES OF SUBJECTS

<table>
<thead>
<tr>
<th></th>
<th>Integrated Subjects</th>
<th>De Faito Segregated Subjects</th>
<th>d</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>90.01</td>
<td>90.24</td>
<td>.23</td>
<td>.46</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>11.54</td>
<td>10.37</td>
<td>1.17</td>
<td>1.33</td>
</tr>
</tbody>
</table>

Though Milholland (17, pp. 1046-1050), in reviewing the SRA Primary Mental Abilities Test, questions the utility of the sub-tests for diagnostic purposes, he does report a median validity coefficient of .60 for
predicting elementary subject grades. Reliability coefficients, reported instrument of .84 and .94 are satisfactory. Only the total scores will be used in this study and they will be used for matching, not diagnostic, purposes.

Sixth graders were matched on the basis of Kuhlmann-Anderson scores obtained in grade four. Summarizing statements about the Kuhlmann-Anderson Tests (6) of reviewers Keminensky, Pigeon, and Davis are respectively:

On both absolute and relative basis the seventh edition of the Kuhlmann-Anderson tests compares favorably with any other competitive instrument measuring general intelligence (6, p. 736).

... reputation will be enhanced by the seventh edition but it is hoped that validatory evidence will be forthcoming (6, p. 736).

It seems reasonable to conclude that these tests measure ability to succeed in school as well as any other tests of their type (6, p. 737).

In one validity study reported by Pigeon (6), group mean and standard deviation of the fourth grade Kuhlmann-Anderson tests were found to be closely comparable with those of the Stanford-Binet for the same level: the means were respectively 123.0 and 123.6; the standard deviations, 19.2 and 18.5. The matching procedures in this study will use scores derived in grade four.

As stated earlier, the target schools were located in the same general metropolitan area as the de-facto-segregated school and served elementary districts quite comparable in terms of socio-economic affluency. All large schools involved in the study had been identified by the Director of Federal Programs for the school district as qualified for Title I preschools as substantial portion of the children lived in low-income homes.
Buying information available in the federal census of 1960 was unsuitable for a guide to the affluency of the area due, not only to a considerable lapse of time but, also, to the fact that the target area had undergone considerable changes in residential integration with a corresponding loss of economic power. With the omission of the few children from homes of professional parents, all remaining subjects were clearly from one vast, very homogeneous socio-economic level. The homogeneity of the range of occupations precluded the use or value of occupational rating instruments as the North-Hatt Scale (24).

An examination of the occupation-description of parents on routine enrollment forms revealed non-skilled or semi-skilled tasks only. Further information obtained from principals and teachers, knowledgeable about their students and their parents, supported the interpretation of the data from enrollment forms which indicated only semi-skilled occupations for parents. Absence of the father in the home was characteristic of both groups with the employment of the father in the home questionable in many cases. The occupation of the mother was considered significant as an index to socio-economic status of Negro lower-class families in accordance with the findings of Blumenfield (5). Common occupations listed for working mothers were "domestic," "hospital aide," "cleaning plant employee," "school maintenance," "motel maintenance." Occupations listed for fathers were also tightly homogeneous: construction, warehouse, service station, etc. Children of teachers constituted the major portion of the very few students identified as having home environments substantially varying from the majority. These few students were omitted from the study as the small number interfered with matching procedures.
Instruments Used to Measure Criteria

Academic Achievement

The Iowa Test of Basic Skills was administered to both groups at the beginning and at the end of the school year, in October and in May, to measure academic growth. This growth was measured in terms of grade equivalent scores. Though composite scores were of primary interest, differences in changes in selected sub-tests were also examined.

This multi-level test battery is representative of most available batteries of this type (1, p. 352). The split-half reliability coefficients are high, .97 or .98, for all levels (1, p. 355) due, in part, to the substantial length of the tests.

Curricular validity is a major strength because of careful definition of skills prior to construction and emphasis on item analysis according to Herrick (13). Herrick also points out that the normative group is as representative of the general school population as that of any standardized achievement battery.

All reviewers in Buros Mental Measurements Yearbook, Fifth Edition, highly recommend this battery. Concluding statements of Herrick, Morgan, and Femmers follow in that order.

The test, for their purpose, are among the best available (13).

... strongly recommend the tests as a whole as the best of their kind (18).

... wished ... that tools to measure values were as good as this battery appears to be in the cognitive domain (19).

Self-Concept Measure

The California Test of Personality, Part I and Part II, was administered to both groups during the first part of October, 1968 and during
the first part of May, 1969 to obtain a "before and after" measure of self-concept.

Ahmann describes the California Test of Personality as a typical personality inventory (1, p. 455). Part I purports to measure "feelings about oneself"; Part II measures "social adjustment." Part I provides a measure of (1) self-reliance, (2) sense of personal worth, (3) sense of personal freedom, (4) feeling of belonging, (5) freedom from withdrawing tendencies, and (6) freedom from nervous symptoms. Part II provides measures of (1) social standards, (2) social skills, (3) anti-social tendencies, (4) family relations, (5) school relations, and (6) community relations. Because the items on each sub-test are few and likely to be lacking in validity and reliability, only the total scores for Part I and Part II and total test scores will be used in the study.

Form AA was used for the pre-tests: Form EB for the post-tests. The tests were administered orally because of possible reading difficulties. Oral administration is one of the options provided by the authors when the test is used with younger children who might have reading difficulties (27, p. 21). The tests were administered in one setting. All questions were taped in order to control voice variations which might induce certain responses and reduce the mechanical task of the subjects.

Sims (26) concludes that the reliability for the two main components of the test is acceptable, that the normative sample is quite representative, and that the test is among the better tests of its kind and for its purpose. He also notes that the tests have been widely used in research by school officials and clinical psychologists.
Ahmann (1, p. 488) suggests that validity of personality tests depends heavily on the extent to which the examiner has developed sufficient rapport with subjects to insure the truthfulness of the answers. The authors (27, p. 9) of the California Test of Personality feel that deliberate distortion would be difficult on all items related to specific personality factors and that any such distortion would be present in the normative sample also. Baker (27) is quoted in this regard by the authors.

There is often a theoretical, but entirely invalid, objection upon the part of those who have never used such tests that children will not be truthful. It is generally known that children's problems are so close to their lives that they can scarcely refrain from answering what applies to them. This situation is similar to the quite universal tendency of most individuals to unburden themselves about their problems even to strangers if they are encouraged to talk about themselves (27, p. 9).

**Racial Attitude Measure**

The Purdue Master Attitude Scale (D), a scale for measuring attitudes toward any defined group, was administered to both groups at the beginning and at the end of the school year to obtain a "before and after" measure of the subjects' attitudes toward white persons. The vocabulary of the scale was modified due to the language problems of many Negro children, and the scale was read aloud to students. These scales were administered by Negroes.

Campbell stated in 1953 (7, pp. 90-92) that the Purdue Master Attitude Scales were the only social attitude scales published since the Thurstone scales went out of print, and that most researchers were duplicating or devising their own scales. As contrasted to specific attitude scales, Campbell defended the use of generalized scales contending that items on most specific scales are so similar to those found on generalized scales
that they could be the basis of the latter. However, in a later edition of Buros Mental Measurement Yearbook, Campbell was reluctant to recommend the scales due to failure, as he saw it, of the authors to improve upon the scales according to earlier criticism and because they didn't justify the retention of the particular items in the revision (8, p. 359).

Ahmann and Glock (1, p. 455) argue that the reliability of Thurstone-type scales is substantial, tending toward coefficients of .80, and that validity is satisfactory when respondents have no reason to falsify responses (1, p. 457). While admitting that attitude scales have little value for the classroom teacher, Ahmann and Glock feel that they do have value as a tool for research (1, p. 457).

The authors (20) defend the validity of their scale on the basis of "obvious face validity" and the results of numerous studies cited in the manual which differentiate among attitudes known to exist among various groups.

Recent examples of use of Thurstone-type attitude scales include use by Hough, Harris, Martin, and Edwards of an eighteen-item equal-appearing interval scale devised by them to measure anti-Negro attitudes of fifth and sixth-grade children (21, p. 361) and used by Lombardi (15) of Thurstone's Attitude Toward the Negro Scale to measure changes in attitudes of ninth- and tenth-grade subjects in a test, re-test study.

Treatment of the Data

The research hypotheses were evaluated on the basis of appropriate statistical treatment of the data gathered from the test-retest procedure for all subjects, both control and experimental, on the relevant criteria: achievement, self-concept, racial attitude.
The difference in each experimental subject's scores, from initial test to retest on each criterion, was compared with the difference in each control subject's scores. When mean relative differences were obtained, each relevant hypothesis was restated in null hypothesis form, and an appropriate difference-of-the-means-test as described by Guilford (11, pp. 173-181) was applied. In instances where means of more than two groups were compared, a one-way analysis of variance was applied as described by Guilford (11, pp. 268-274). Following the discovery of a significant over-all critical ratio, the nature of differences between individual means was to have been examined with the standard test for significance of mean differences as described by Guilford (11, pp. 173, 181). Other procedures are available for comparison of paired, individual means which would be more applicable if a greater number of means were involved. Both the Duncan procedure and Newman Keuls procedure (28, pp. 85-86) require larger critical ratios than the 'F' test. This difference in requirement for significance widens as the number of means examined increases. The required critical ratios of the 'F' statistic and Duncan's procedure are identical when the means to be compared are adjacent on an ordered scale, and the Duncan critical ratio requirement is only slightly more for means which are two steps apart. Winer supports the decision of the writer to use the 'F' test. "If the meaningful comparisons are relatively few in number and are planned before the data are obtained, the 'F' test associated with individual components of variation should be used" (28, p. 85).

In all instances where mean differences were found, significance depended upon the probability of their chance occurrence being equal to or
less than .05. When this level of confidence was obtained, the relevant null hypothesis was rejected, and it was concluded that, at an indicated probability level, the groups did differ on the criteria in question.

All hypotheses dealing with a comparison of the total experimental group with the control group were tested through the application of a difference-of-the-means test for large, non-independent samples. Stated in the null hypothesis form, these research hypotheses become:

Hypothesis #1: There will be no difference between the mean gain of the experimental group and that of the control group on the achievement battery.

Hypothesis #2: There will be no difference between the mean change of the experimental group and that of the control group on the measure of self-concept.

Hypothesis #3: There will be no difference between the mean change of the experimental group and that of the control group on the measure of racial attitude.

All hypotheses dealing with differences among experimental subjects when grouped according to intelligence quotient levels were tested through the application of a one-way analysis of variance followed, where indicated, by a difference-of-the-means test for small, independent samples. Stated in the null hypothesis, these research hypotheses become:

Hypothesis #1a: There will be no difference in the relative mean gains on the achievement battery among three mental ability sub-groups of experimental subjects.

Hypothesis 2a: There will be no difference in the relative mean changes on the measure of self-concept among three mental ability sub-groups of experimental subjects.
Hypothesis #3a: There will be no difference in the relative mean changes on the measure of racial attitude among three mental ability subgroups of the experimental subjects.

All hypotheses dealing with differences between changes of boys and girls in the experimental group were tested through the application of a difference-of-the-means test for large, independent samples. These hypotheses, stated in the null hypothesis form, become:

Hypothesis #1b: There will be no difference between relative mean gains of boys and girls in the experimental group on the achievement battery.

Hypothesis #2b: There will be no difference between relative mean changes of the boys and the girls in the experimental group on the measure of self-concept.

Hypothesis #3b: There will be no difference between relative mean changes of boys and girls in the experimental group on the measure of racial attitudes.

All hypotheses dealing with differences among experimental subjects when grouped according to proportion of classroom integration, Hypotheses #1c, #2c, and #3c, were tested through application of a one-way analysis of variance and, when necessary, a difference-of-the-means test for small, independent samples. These hypotheses, stated in the null hypothesis form, become:

Hypothesis #1c: There will be no difference among the relative mean gains of experimental subjects, when grouped according to proportion of classroom integration, on the achievement battery.
Hypothesis #2c: There will be no difference among relative mean changes of experimental subjects, when grouped according to proportion of classroom integration, on a measure of self-concept.

Hypothesis #3c: There will be no difference among the relative mean changes of experimental subjects, when grouped according to proportion of classroom integration, on a measure of racial attitude.

Hypotheses #4 and #5 were tested through the application of a difference-of-the-means test for large, non-independent samples. Stated in the null hypothesis form, these research hypotheses become:

Hypothesis #4: There will be no difference in the initial and final mean scores of the control group on a measure of self-concept.

Hypothesis #5: There will be no difference in the initial and final mean scores of the control group on a measure of racial attitude.
CHAPTER BIBLIOGRAPHY


CHAPTER III

PRESENTATION OF DATA RELATIVE TO ACADEMIC AND PERSONAL GROWTH OF INTEGRATED NEGRO CHILDREN

It was the purpose of the present study to ascertain if the academic and personal growth of Negro students in segregated classrooms differed from that of those attending integrated classrooms. Tests were administered at the beginning and end of the school year to integrated subjects and matched, segregated subjects on instruments measuring school achievement, self-concept, and racial attitude. Following direct comparisons of the changes of the two groups, using the "t" statistic, integrated subjects were subdivided into groups according to sex, mental ability, and proportion of classroom integration. The relative changes of these sub-groups were compared through the use of the analysis of variance technique. Statistical tests were performed at the North Texas State University Computer Center.

Results of the statistical treatments will be presented and discussed in this chapter in accordance with the research hypotheses as they are related to the three criteria under study: school achievement, self-concept, and racial attitude.

Results are discussed in terms of 'relative changes' and 'absolute changes'. The former term refers to changes of integrated (experimental) subjects from pre- to post-test in comparison with those of segregated
(control) subjects. The latter term refers to changes of either the experimental or control group alone from pre- to post-test.

Hypotheses Related to School Achievement

The major hypothesis in the area of academic achievement was that the mean gain of the integrated subjects on the Iowa Test of Basic Skills would significantly exceed that of the segregated subjects.

This hypothesis was not supported by the data. Integrated subjects not only failed to substantially exceed the gain by segregated subjects but even failed to match it. Table IV shows that the gain of segregated subjects exceeded that of integrated subjects by .7 months, a difference that was not significant (P=.30).

**TABLE IV**

A COMPARISON OF MEAN CHANGES OF INTEGRATED AND SEGREGATED SUBJECTS ON IOWA TESTS OF BASIC SKILLS

<table>
<thead>
<tr>
<th>Battery Section</th>
<th>Mean Change of Integrated Subjects</th>
<th>Mean Change of Segregated Subjects</th>
<th>Difference in Changes E-C</th>
<th>&quot;t&quot; Statistic</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vocabulary</td>
<td>.8 months</td>
<td>1.6 months</td>
<td>-.8 months</td>
<td>.56</td>
<td>.57</td>
</tr>
<tr>
<td>Language</td>
<td>.6 months</td>
<td>1.2 months</td>
<td>-.6 months</td>
<td>.61</td>
<td>.54</td>
</tr>
<tr>
<td>Mathematics</td>
<td>1.6 months</td>
<td>2.2 months</td>
<td>-.6 months</td>
<td>.60</td>
<td>.55</td>
</tr>
<tr>
<td>Total</td>
<td>1.0 months</td>
<td>1.7 months</td>
<td>-.7 months</td>
<td>1.03</td>
<td>.30</td>
</tr>
</tbody>
</table>

Furthermore, segregated subjects' mean gain exceeded integrated subjects' mean gain in every area of achievement measured, though no differences approached significance.
Table V shows that gains on vocabulary (1.48 months), language (1.23 months), and mathematics (2.24 months) by segregated students almost doubled those of integrated subjects.

As the pre-test varied from the post-test only in that different forms for identical grade levels were used, it must be noted that the gains by both groups were quite meager. Integrated subjects' mean gain was only one month on the total test; segregated subjects gained 1.7 months. Though total test gains by both integrated and segregated subjects were slight, the gains by both groups on the mathematics section proved significant (P=.05, .01).

Pre-test data showed the two groups to be initially equal in academic achievement. As noted in Table V, integrated subjects averaged 4.03 grade equivalent on the Iowa Test of Basic Skills while segregated subjects averaged 4.05 grade equivalent. This difference was not significant (t=.30). The fact that the large portion of both groups was composed of fifth graders, with somewhat equal numbers of fourth and sixth graders, indicates that the combined subjects averaged approximately one year below the grade level norms of this instrument.

It was expected that the relative changes in achievement of integrated subjects would be positively related to mental ability levels.

This hypothesis was not supported by the data. Table VI shows the results of an application of the analysis of variance technique to compare the mean relative changes of integrated students by three mental ability levels. All comparisons on both total and sub-tests failed to reach significance. Only integrated subjects in the low mental ability group exceeded the gains of their counterparts.
<table>
<thead>
<tr>
<th></th>
<th>Integrated Subjects</th>
<th></th>
<th>Segregated Subjects</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-test Mean (G.E.)</td>
<td>Post-test Mean (G.E.)</td>
<td>Gain</td>
<td>&quot;t&quot; statistic</td>
</tr>
<tr>
<td>Vocabulary</td>
<td>3.88</td>
<td>3.95</td>
<td>.08</td>
<td>.86</td>
</tr>
<tr>
<td>Language</td>
<td>4.12</td>
<td>4.19</td>
<td>.06</td>
<td>1.11</td>
</tr>
<tr>
<td>Mathematics</td>
<td>4.07</td>
<td>4.24</td>
<td>.16</td>
<td>2.45*</td>
</tr>
<tr>
<td>Total</td>
<td>4.03</td>
<td>4.13</td>
<td>.10</td>
<td></td>
</tr>
</tbody>
</table>

* Significant at .05 level of confidence
** Significant at .001 level of confidence
Table VI shows that integrated subjects with IQs over 100 lost .7 months on the Iowa Test of Basic Skills to their segregated counterparts while integrated students with less than an IQ of 80 gained 1.4 months over their matches. Furthermore, integrated subjects with lower mental ability gained over segregated matches on all subtests, the greatest relative gain coming on the vocabulary sub-test (2.5 months). Integrated subjects with high mental ability lost over four months each to segregated subjects on the language sub-section. Integrated students in the middle mental ability range lost most to segregated subjects: 1.3 months on the total test and similar amounts on all sub-tests.

**TABLE VI**

**RELATIVE CHANGES OF INTEGRATED SUBJECTS BY MENTAL ABILITY LEVELS ON THE IOWA TESTS OF BASIC SKILLS**

<table>
<thead>
<tr>
<th></th>
<th>Below 80 IQ N=21</th>
<th>80 IQ-100 IQ N=63</th>
<th>Over 100 IQ N=15</th>
<th>&quot;F&quot; Statistic (3.10 needed for significance)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean Relative Change (G.E.)</td>
<td>Mean Relative Change (G.E.)</td>
<td>Mean Relative Change (G.E.)</td>
<td></td>
</tr>
<tr>
<td>Vocabulary</td>
<td>2.5 mo.</td>
<td>-2.2 mo.</td>
<td>.7 mo.</td>
<td>1.07</td>
</tr>
<tr>
<td>Language</td>
<td>.5 mo.</td>
<td>-.1 mo.</td>
<td>-4.2 mo.</td>
<td>1.31</td>
</tr>
<tr>
<td>Mathematics</td>
<td>.3 mo.</td>
<td>-1.4 mo.</td>
<td>1.8 mo.</td>
<td>.74</td>
</tr>
<tr>
<td>Total</td>
<td>1.1 mo.</td>
<td>-1.3 mo.</td>
<td>-.7 mo.</td>
<td>1.01</td>
</tr>
</tbody>
</table>

It was not expected that relative changes of integrated subjects over segregated subjects would be related to subjects' sex.

This hypothesis was supported by the data. Table VII shows the results of computations of the "t" statistics, for total and subtests,
comparing relative changes of integrated boys with that of integrated girls. All values of "t" failed to reach significance.

Integrated boys, however, gained slightly over their segregated counterparts on the total test and on two subtests while integrated girls failed to gain over segregated girls on any portion of the test battery. Integrated girls lost heavily, 1.5 months, to segregated girls on the total academic achievement test.

### TABLE VII

**RELATIVE CHANGES OF INTEGRATED SUBJECTS BY SEX ON THE IOWA TEST OF BASIC SKILLS**

<table>
<thead>
<tr>
<th></th>
<th>Integrated Boys N=46</th>
<th>Integrated Girls N=53</th>
<th>&quot;t&quot; Statistic</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relative Change</td>
<td>Integrated Boys N=46</td>
<td>Integrated Girls N=53</td>
<td>&quot;t&quot; Statistic</td>
<td>P</td>
</tr>
<tr>
<td>Vocabulary</td>
<td>.1 mo.</td>
<td>-1.5 mo.</td>
<td>.61</td>
<td>.54</td>
</tr>
<tr>
<td>Language</td>
<td>.2 mo.</td>
<td>-1.3 mo.</td>
<td>.80</td>
<td>.42</td>
</tr>
<tr>
<td>Mathematics</td>
<td>-.2 mo.</td>
<td>-1.0 mo.</td>
<td>.42</td>
<td>.67</td>
</tr>
<tr>
<td>Total</td>
<td>.2 mo.</td>
<td>-1.5 mo.</td>
<td>1.26</td>
<td>.21</td>
</tr>
</tbody>
</table>

A comparison of absolute changes of integrated boys and integrated girls in Table VIII shows that the girls' mean increased significantly (P=.001) over that of boys on the total test of achievement.
The differences in initial mean scores of integrated boys (3.96) and girls (4.05) was non-significant (P=.63).

It had been expected that relative gains of integrated subjects would be inversely related to proportion of Negro membership in the classroom.

The data failed to support the hypothesis. Table IX shows that all differences in relative changes of integrated subjects, when classroom proportion of integration was allowed to vary, were non-significant. Integrated subjects in classrooms with Negro membership varying between 75 per cent to 95 per cent outgained segregated matches by .6 months while integrated subjects in classrooms with Negro membership between 5 per cent and 30 per cent only equalled the gains of segregated matches.

Integrated subjects in classrooms whose Negro membership varied between 31 per cent and 70 per cent lost the most, 2.3 months, in grade equivalents to segregated matches.
### TABLE IX

RELATIVE CHANGES OF INTEGRATED SUBJECTS BY PROPORTION OF CLASSROOM INTEGRATION ON THE IOWA TESTS OF BASIC SKILLS

<table>
<thead>
<tr>
<th>Negro Membership</th>
<th>Negro Membership</th>
<th>Negro Membership</th>
<th>&quot;F&quot; Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>5% - 30% (G.E.)</td>
<td>31% - 70% (G.E.)</td>
<td>71% - 95% (G.E.)</td>
<td></td>
</tr>
<tr>
<td>Mean Rel.Change</td>
<td>Mean Rel.Change</td>
<td>Mean Rel.Change</td>
<td>(3.10 needed for significance)</td>
</tr>
<tr>
<td>Vocabulary</td>
<td>1.5 mo.</td>
<td>-3.1 mo.</td>
<td>.1 mo.</td>
</tr>
<tr>
<td>Language</td>
<td>-1.5 mo.</td>
<td>-1.9 mo.</td>
<td>1.8 mo.</td>
</tr>
<tr>
<td>Mathematics</td>
<td>.4 mo.</td>
<td>-1.3 mo.</td>
<td>-.6 mo.</td>
</tr>
<tr>
<td>Total</td>
<td>0.0 mo.</td>
<td>-2.3 mo.</td>
<td>.6 mo.</td>
</tr>
</tbody>
</table>

**Summary of Data Relative to Achievement**

The following statements are supported by the analysis of data relative to school achievement of subjects:

1. No significant difference was found to exist between the achievement of integrated and segregated Negro students as measured by the Iowa Tests of Basic Skills. The trend favored the segregated group.

2. The initial administration of the Iowa Test of Basic Skills showed both integrated and segregated subjects averaging approximately one year below national norms for the instrument.

3. Administration of different forms of the Iowa Tests of Basic Skills for the same grade level, at the beginning and end of one school year, to approximately two hundred elementary school students resulted in a very small mean gain (1.4 months).
4. The greatest mean gains on the *Iowa Test of Basic Skills* by both segregated and integrated subjects came on the mathematics sections.

5. Integrated subjects, when grouped by three mental ability levels, failed to differ significantly in their comparative changes with segregated subjects. The trend favored subjects with lower mental ability.

6. Integrated subjects, when grouped by sex, failed to differ significantly in their comparative changes with segregated subjects. However, integrated boys gained slightly more than segregated boys while integrated girls gained much less than segregated girls. In terms of absolute changes, both integrated and segregated girls gained significantly ($P=.001$) more than boys, but the gap was greater in the segregated school.

7. Integrated subjects, when grouped according to proportion of classroom integration, failed to differ significantly in their comparative changes with segregated subjects. The trend favored the higher proportion of classroom integration.

**Hypotheses Related to Self-Concept**

The major hypothesis in this area indicated an expectation that the mean score of de-facto-segregated subjects on the *California Test of Personality* would not shift substantially while that of integrated subjects would increase significantly.
The data failed to support this hypothesis. Table X shows the substantial drop of the mean score of integrated subjects from pre- to post-test, most of the decrease appearing on Part II, Social Adjustment (-6.46 points).

TABLE X
PRE-AND-POST MEAN SCORES OF SUBJECTS ON THE CALIFORNIA TEST OF PERSONALITY

<table>
<thead>
<tr>
<th></th>
<th>Integrated Subjects</th>
<th>Segregated Subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-Test Mean</td>
<td>Post-Test Mean</td>
</tr>
<tr>
<td>Part I</td>
<td>39.35</td>
<td>39.23</td>
</tr>
<tr>
<td>Part II</td>
<td>46.59</td>
<td>40.13</td>
</tr>
<tr>
<td>Total</td>
<td>85.95</td>
<td>79.36</td>
</tr>
</tbody>
</table>

*** Significant at P=.001 level of confidence

During the same period, segregated subjects obtained a slight (1.34) increase in total mean score. Segregated subjects lost -3.12 mean points on Part II, Social Adjustment, but increased their mean score on Part I, Personal Adjustment, by 4.47 points to offset the loss.
Table XI shows that the differences in the mean change of the two groups on each part of the instrument, as well as the total, were significant (P=.001, .01, and .001 for changes on Part I, Part II, and Total respectively). The differences, in all cases, favored the segregated subjects.

<table>
<thead>
<tr>
<th>Integrated Subjects</th>
<th>Segregated Subjects</th>
<th>Difference E-C</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Change</td>
<td>Mean Change</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Part I</td>
<td>- .12</td>
<td>4.47</td>
<td>-4.60</td>
</tr>
<tr>
<td>Part II</td>
<td>-6.46</td>
<td>-3.12</td>
<td>-3.34</td>
</tr>
<tr>
<td>Total</td>
<td>-6.58</td>
<td>1.34</td>
<td>-7.93</td>
</tr>
</tbody>
</table>

* Significant at .05 level
*** Significant at .001 level

It was expected that a positive relationship between relative changes of integrated subjects on the self-concept instrument and their mental ability levels would be found.
The data failed to support this hypothesis. Integrated subjects, at all mental ability levels, lost similar amounts on total mean scores to segregated counterparts as shown in Table XII. Mean score losses to segregated subjects on the separate sections of the instrument were, also, almost identical. The very small values of the "F" statistics emphasize the independence of the two variables.

**TABLE XII**

**RELATIVE MEAN CHANGES OF INTEGRATED SUBJECTS**
**ON THE CALIFORNIA TEST OF PERSONALITY**
**BY MENTAL ABILITY LEVELS**

<table>
<thead>
<tr>
<th></th>
<th>Below 80 IQ</th>
<th>80 - 100 IQ</th>
<th>Over 100 IQ</th>
<th>&quot;F&quot; Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N=21</td>
<td>N=63</td>
<td>N=15</td>
<td></td>
</tr>
<tr>
<td>Mean Relative Change</td>
<td>-4.52</td>
<td>-4.67</td>
<td>-4.40</td>
<td>.00</td>
</tr>
<tr>
<td>Part I</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean Relative Change</td>
<td>-2.52</td>
<td>-3.62</td>
<td>-3.33</td>
<td>.06</td>
</tr>
<tr>
<td>Part II</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean Relative Change</td>
<td>-7.05</td>
<td>-8.27</td>
<td>-7.73</td>
<td>.02</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A lack of a relationship between relative changes of integrated subjects on the self-concept instrument and sex was anticipated.

The data supports the hypothesis. No relationship was found to exist between sex and relative mean change by integrated subjects on the instrument.
Integrated boys, as shown in Table XIII, did lose more than counterparts than did integrated girls on both sections and total of the California Test of Personality.

<table>
<thead>
<tr>
<th></th>
<th>Integrated Boys</th>
<th>Integrated Girls</th>
<th>&quot;P&quot; Statistic</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part I</td>
<td>-5.70</td>
<td>-3.64</td>
<td>-.83</td>
<td>.41</td>
</tr>
<tr>
<td>Part II</td>
<td>-4.02</td>
<td>-2.75</td>
<td>-.51</td>
<td>.61</td>
</tr>
<tr>
<td>Total</td>
<td>-9.70</td>
<td>-6.40</td>
<td>-.77</td>
<td>.44</td>
</tr>
</tbody>
</table>

It was expected that relative changes on the self-concept instrument by integrated subjects would be inversely related to the proportion of Negro membership in the classroom.

The data failed to support this hypothesis. Table XIV shows that differences on the total test were not significant. The only sub-group of integrated subjects with a mean change on any portion of the self-concept instrument greater than that of segregated counterparts was the group in classrooms whose portion of Negro membership varied between 5 and 30 per cent. All other sub-groups, whether based on sex, ability level, grade level, or extent of integration, failed to exceed the mean gains of those of their segregated counterparts.
Integrated subjects in classrooms where Negro membership was low scored more favorably in comparison with their segregated matches than subjects in classrooms where membership was higher. However, a linear relationship cannot be implied from the data. Relative scores did not continue to be less favorable as proportion of Negro membership continued to increase. Integrated subjects in classrooms where Negro membership varied around 50 per cent lost more in comparison with segregated subjects on the characteristic measured than did subjects in classrooms where Negro membership varied around 75 per cent.

### TABLE XIV

**RELATIVE MEAN CHANGES OF INTEGRATED SUBJECTS ON THE CALIFORNIA TEST OF PERSONALITY BY PROPORTION OF CLASSROOM INTEGRATION**

<table>
<thead>
<tr>
<th>Negro Membership</th>
<th>Mean Relative Change</th>
<th>Negro Membership</th>
<th>Mean Relative Change</th>
<th>Negro Membership</th>
<th>Mean Relative Change</th>
<th>&quot;F&quot; Statistic Needed for Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>5% - 30% N=28</td>
<td>-3.79</td>
<td>31% - 70% N=39</td>
<td>-6.51</td>
<td>71% - 95% N=32</td>
<td>-2.97</td>
<td>.82</td>
</tr>
<tr>
<td>Part I</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Part II</td>
<td>.36</td>
<td></td>
<td></td>
<td></td>
<td>-2.31</td>
<td>3.05</td>
</tr>
<tr>
<td>Total</td>
<td>-3.43</td>
<td></td>
<td>-13.36</td>
<td></td>
<td>-5.25</td>
<td>2.20</td>
</tr>
</tbody>
</table>

### Summary of Data Relative to Self-Concept

Data obtained through pre- and post administrations of the California Test of Personality to subjects support the following statements:

1. The relative mean loss of integrated subjects, in comparison with segregated subjects, on each section of the instrument was significant (P=.001,.01).
2. Most of the loss of mean points by integrated subjects occurred on Part II, Social Adjustment.

3. Relative mean changes by integrated subjects were unrelated to grade level, sex, or mental ability.

4. Relative mean changes approached significance in relation to proportion of classroom integration. The trend, while not linear, appeared to be for subjects in classrooms with smaller proportions of Negro membership to improve their scores on the instrument in comparison with those of their segregated matches more than subjects in classrooms with larger proportions of Negro membership.

5. Both integrated and segregated subjects suffered a loss of mean points from pre- to post-test on Part II, Social Adjustment.

6. Segregated subjects' mean score increased on Part I, Personal Adjustment, and decreased on Part II, Social Adjustment, from pre- to post-test. As a result, the group failed to change its total mean score.

7. Integrated subjects' mean score on Part II, Social Adjustment, decreased from pre- to post-test significantly (P=.001).

Hypotheses Relative to Racial Attitude

The major hypothesis concerning changes in racial attitudes of the subjects indicated an expectation that the integrated subjects would significantly improve their mean score over that of segregated subjects, from pre- to post-tests, on equivalent forms of the Purdue Racial Attitude Scale.

The hypothesis was not supported by the data. Rather, Table XV shows that segregated subjects increased their mean score significantly (P=.001) over that of integrated subjects. The former group posted a whole-point
mean gain on the eleven-point scale while the latter did not quite main-
tain their original position on the scale, losing .09 points. Segregated
students, thus, not only gained comparatively over integrated subjects
but, also, managed an absolute mean gain which was significant (P=.001).

**TABLE XV**

**COMPARISON OF MEAN CHANGE OF INTEGRATED
AND SEGREGATED SUBJECTS ON
PURDUE RACIAL ATTITUDE SCALE**

<table>
<thead>
<tr>
<th>Integrated Subjects</th>
<th>Segregated Subjects</th>
<th>Mean Difference</th>
<th>S D</th>
<th>&quot;t&quot; Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Change</td>
<td>S</td>
<td>Mean Change</td>
<td>S</td>
<td>-1.035</td>
</tr>
<tr>
<td>-.091</td>
<td>1.56</td>
<td>.944</td>
<td>1.93</td>
<td>*** Significant at P=.001 level of confidence</td>
</tr>
</tbody>
</table>

While integrated subjects maintained a similar variance among in-
dividual scores, as well as similar mean, from pre- to post-tests, scores
of segregated subjects tended to become more homogeneous along with the
significant mean gain. Table XVI shows segregated subjects' standard
deviation to decrease from 1.88 to 1.30 from pre- to post-test.

Pre-tests scores located both integrated and segregated subjects at
similar points on the scale: 6.00 and 5.63 respectively. This difference
was non-significant (P=.09). (See Table XVI, page 63).

The lack of change in either the mean or variance of the scores of
integrated subjects, in contrast to the changes in mean and variance of
segregated subjects, is doubly interesting because of the circumstance
of the two administrations of the scale. All pre-tests on this instrument
were administered by Negroes to both integrated and segregated subjects:
**TABLE XVI**

PRE-POST TEST MEAN SCORES OF SUBJECTS ON PURDUE RACIAL ATTITUDE SCALE
[11 POINT SCALE]

<table>
<thead>
<tr>
<th></th>
<th>Integrated Subjects</th>
<th>Segregated Subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-Test</td>
<td>Post-Test</td>
</tr>
<tr>
<td>M  S</td>
<td>M  S</td>
<td>M  S</td>
</tr>
<tr>
<td>6.00 1.35</td>
<td>5.91</td>
<td>1.42</td>
</tr>
</tbody>
</table>

*** Significant at .001 level of confidence
all post-tests were administered by a white person to both integrated and segregated subjects. Any interaction with the race of the testor should have been constant and affected both equally.

No relationship between mental ability levels and relative changes of integrated students on the racial attitude instrument was anticipated.

The data supported the hypothesis. The statistical treatment of the differences failed to produce a significant "F" value for the three mental ability groups. However, the substantial gap between the relative mean change of subjects with lower mental ability and that of subjects with higher mental ability encouraged the computation of the "t" statistic for these two groups. Table XVII shows the relative mean change of integrated subjects with IQs below 80 to be -.44 points and that of integrated subjects with IQs above 100 to be -2.11 points. These differences, if a "t" statistic for two samples had been appropriate, would have been significant (t=2.02). The trend, then, was for pupils with lower mental ability to obtain higher relative scores than other subjects. Relative changes of integrated subjects decreased as IQ increased: the correlation trend was negative and linear.

### TABLE XVII

<table>
<thead>
<tr>
<th></th>
<th>Below 80 IQ</th>
<th>80 IQ-100 IQ</th>
<th>Over 100 IQ</th>
<th>&quot;F&quot; Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>N=21 Mean Relative Change</td>
<td>-.44</td>
<td>-.98</td>
<td>-2.11</td>
<td>2.09</td>
</tr>
<tr>
<td>N=63 Mean Relative Change</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N=15 Mean Relative Change</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3.10 needed for significance
An examination of absolute attitude scores of integrated subjects rendered an initial difference between mean scores of subjects in the low IQ group and subjects in the high IQ group in favor of the latter. Subjects with IQs below 80 averaged 5.54 points on the initial test while subjects with IQs above 100 averaged 6.39 points on the eleven point scale. Scores of these two groups, from pre-to-post test, tended to regress toward the mean. The mean score of the subjects with lower mental ability rose (.68 points) while the mean score of subjects with high mental ability fell (-.78 points).

An independent relationship between sex and relative changes of racial attitudes was anticipated. The data supported the hypothesis. Mean relative changes of integrated boys and girls are shown in Table XVIII. Segregated boys and segregated girls gained equally over integrated counterparts.

Finally, relative changes of integrated subjects were examined for variances due to varying proportions of classroom integration with the expectation that an inverse relationship would be found between favorable, relative changes of racial attitude and proportion of Negro membership in the classroom.

### Table XVIII

<table>
<thead>
<tr>
<th>Integrated Boys</th>
<th>Integrated Girls</th>
<th>&quot;t&quot;</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Change</td>
<td>Mean Change</td>
<td>Statistic</td>
<td></td>
</tr>
<tr>
<td>-1.13</td>
<td>-.95</td>
<td>.35</td>
<td>.36</td>
</tr>
</tbody>
</table>
The data did not support the hypothesis. Table XIX shows that integrated subjects in classrooms with low proportions of Negro membership failed to show a more favorable relative change on the racial attitude instrument. In fact, they tended to lose relative ground on the instrument in comparison with relative changes of those in classrooms with large numbers of Negro students.

**TABLE XIX**

RELATIVE MEAN CHANGES OF INTEGRATED SUBJECTS ON PURDUE RACIAL ATTITUDE SCALE BY PROPORTION OF CLASSROOM INTEGRATION

[11 POINT SCALE]

<table>
<thead>
<tr>
<th>Negro Membership</th>
<th>Negro Membership</th>
<th>Negro Membership</th>
<th>&quot;T&quot; Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>5% - 30%</td>
<td>31% - 70%</td>
<td>71% - 95%</td>
<td>3.10 needed for significance</td>
</tr>
<tr>
<td>N=28</td>
<td>N=39</td>
<td>N=32</td>
<td></td>
</tr>
<tr>
<td>Mean Relative Change</td>
<td>Mean Relative Change</td>
<td>Mean Relative Change</td>
<td></td>
</tr>
<tr>
<td>-1.55</td>
<td>-1.03</td>
<td>-.59</td>
<td>1.12</td>
</tr>
</tbody>
</table>

A positive correlation may be observed between proportion of integration and improvement of racial attitudes as measured by the instrument. Integrated subjects in classrooms where the Negro membership varied around 25 per cent lost the most points (-1.55) to their segregated counterparts; those in classrooms where Negro membership varied around 50 per cent lost less (-1.03) to counterparts; those in classrooms where Negro membership varied around 75 per cent lost the least (-.59) to their matches in the segregated school.

If the segregated schools were included on the same continuum, having the largest proportion (100 per cent) of Negro students in classrooms, the correlation is maintained. Segregated students improved their mean score.
significantly \((P=.001)\) on the racial attitude scale, as shown in Table XVI, contrary to expectations.

**Summary of the Data Relative to Racial Attitudes**

Data obtained through administrations of the *Purdue Racial Attitude Scale* support the following statements:

1. Initial difference between mean scores of integrated and segregated subjects were non-significant \((t=1.69)\). Both groups place themselves near the neutral scale position.

2. *De-facto*-segregated subjects scored significantly higher \((P=.001)\) from pre- to post-testing, averaging one full point gain on the eleven point scale.

3. Integrated subjects failed to change mean position from pre- to post-testing.

4. Sex was not found to be related to the relative mean changes of integrated subjects.

5. Ability level was negatively, but not significantly, related to relative mean changes of integrated subjects. Integrated subjects with higher mental ability lost more to their segregated counterparts than other subjects.

6. The extent of classroom integration was not significantly related to relative mean changes by integrated subjects. The trend was for integrated subjects in classrooms with the greatest proportion of Negro membership to lose fewer points to their segregated counterparts.
CHAPTER IV

RELATIONSHIP OF THE FINDINGS WITH OTHER STUDIES

Summary of Procedure

Ninety-nine newly integrated Negro elementary-school children were matched by sex, grade level, mental ability, and socio-economic status with Negro students continuing to attend a de-facto-segregated school.

Instruments designed to measure school achievement, self-concept, and racial attitude were administered to both groups at the beginning and at the end of the school year. Mean changes of the two groups on the instruments from pre- to post-tests were statistically compared. Integrated students were sub-divided into IQ and sex groups as well as groups based on the extent of classroom integration. The relative mean changes of these sub-groups were similarly analyzed.

Findings Relative to Academic Achievement and Other Studies

The lack of gain by newly integrated children over de-facto-segregated children after one year of school integration suggests that the process of closing the educational gap between minority-group children and others will not be accomplished immediately by simply mixing the groups in the learning environment. This finding is consistent with a study by Wolman (34) who reports that Negro elementary children transferred from an all-Negro de-facto-segregated school to integrated schools failed to gain more than normal for that group. Wyatt (15) reports that academic problems were the rule for integrated Negro students and were
more severe at higher grade levels. Samuels (26) found a period of two years of integration was necessary before Negro students began to make gains over segregated students. Gordon (8) was unable to discern a decrease in the educational gap between Negro and white students after integration in a high school whose Negro membership totaled only 8 per cent.

In contrast to the finding of the present study, some have found Negro children closing the educational gap after integration. Katzenmeyer (16) reported a much larger gain by Negro students on mental ability tests after integration than by whites in the same school. Stallings (30) found that Negro students were gaining more than white students after school integration at elementary and junior high levels. Stallings, however, noted that the Negro children who gained the most were those with Negro teachers. As no white children were assigned to Negro teachers during the period of the study, obviously segregated classroom conditions existed for these students. Hansen (11) found Negro students' achievement on the rise after integration in Washington, D. C. without detrimental effects on the achievements of white students.

Several studies have examined the academic growth gains of all children after integration and have found a general rise in achievement. The Board of Education of New York City (3) reports that all children increased their position on national norms after selected schools were racially balanced. This procedure was accompanied by the addition of supplementary teachers and other efforts which could have accounted for some of the gain. The Massachusetts Board of Education (4), also, reports general improvement of all children following integration of schools in that state. Weinberg (4) concluded, after reviewing the literature on school desegregation, that children in desegregated schools achieved more than those in
seggregated schools. Berkowitz (2) reviews the effects of bussing and compensatory programs, and concludes that the former is effective in raising achievement of Negro students.

Katz (15) suggests that a dearth of attempts to evaluate the effects of school integration on Negro children has existed due to several factors: lack of racial identification of students in many school systems, general emphasis on raising the achievement level of all subjects which have confounded the effects of integration, and lack of before-and-after data on integrated students. Psychological stresses possibly present in the environment of multi-racial classrooms have been suggested by Katz (15) as impediments to school achievement by Negro students.

If the threat of rejection is characteristic of the learning environment, the resulting frustration, anger, etc. could produce anxiety or hostility that might impede the intellectual processes. Radke (25) found that desegregated Negro children in a summer camp showed an unusual amount of tension. Mussen (33) finds that Negro adolescent boys see their environment as more hostile than white adolescent boys and exhibited more frustration. White power implicit in an integrated school where most, if not all, of the authority figures are white may pose a real or fancied threat or devaluation to a Negro child. All integrated schools included in the present study had faculties which were predominately white, and all were supervised by white principals, though two of the schools had Negro scholastic membership well over 50 per cent.

Atkinson motivational theory (1,15) could account for some lack of incentive. According to this theory, any deviation of the subjective probability of success from .50 toward zero or unity would have the effect
of lowering incentive strength. If a gap between educational standards existed between de-facto-segregated and integrated schools, so as to lower the Negro child's subjective probability of success, his motivation to succeed would supposedly be diminished. An examination of total school results of the Iowa Test of Basic Skills battery routinely administered to all children in the school system, shows standards existing by the very nature of the mean achievement of the various student bodies. Integrated schools' total percentile averages ranged from 15 percentile to 75 percentile, while that of the de-facto-segregated school 19 percentile.

Stress has been observed by many to impair efficiency on complex or intellectual skills. Lantz (15) reports that, while tasks requiring rote memory were not affected by knowledge or previous failure, tasks requiring reasoning suffered.

The findings of the present study, relative to better performance where Negro children predominate in the classroom, are consistent with studies which suggest that Negro children in such settings may be less vulnerable to stress. Bovard (15, p. 382) found that the "presence of companions or members of the same species has a supportive effect under stress." It has been reported by Titmuss (15) that London children found the bombings with their families less stressful than the evacuation and separation from their families, and Wrightsman (15) concluded that being with others in a similar plight was anxiety reducing.

Failure threat was more likely to be present in situations where proportions of Negro students were smaller and could account for some of the lesser relative mean gain by Negro students in classrooms where whites predominated.
If the students in de-facto-segregated classrooms may be seen as an extension of a proportion of Negro membership continuum, it may be observed that achievement increased as proportion of Negro membership increased.

This finding, of course, is not consistent with Coleman's (2) implication that Negro children lose the feeling of control of their destiny as proportion of Negro membership exceed fifty per cent or Matzen (21) reports that a negative correlation exists between achievement and extent of integration. The U. S. Commission on Civil Rights (2) concluded that Negro children who attended predominately Negro schools do not achieve as well as other children, Negro or white.

Findings Relative to Self-Concept and Other Studies

Several conditions could account for the major finding of the present study that self-concepts of integrated students failed to improve.

Several authorities have foreseen possible personality damage to integrated Negro children. Clark (22, p. 410) noted that Negro children in integrated schools in the North showed more resistance to coloring themselves black and identifying themselves with black dolls than southern Negro children in segregated schools. Haggstrom (10) warns of general personality damage. "Much of the research concerning the onset of racial awareness...provides some support for the view that Negro children may suffer personality damage in desegregated schools" (10).

Mussen (22) refers to the relationship between stress that the environment poses and feelings of inferiority. If the learning environments of the integrated children included a higher and perhaps, in their subjective judgement, unattainable standard of scholastic achievement, any existing feelings of inadequacy would be reinforced by the experience.
Morrow (20) agrees that low achievement by Negro children in integrated schools may reinforce the Negro child's false notion of his inferiority and that of the white child of his superiority.

Possible racial imbalances in faculties and authority figure groups in favor of whites may contribute to an integrated child's loss of or failure to improve self-esteem. Devaluation of self may take place within a school environment where all or most of the most important authority figures are associated with another ethnic group.

Self-concept does not develop in isolation but is influenced, if not substantially determined, by an individual's perception of how 'others' see and value him. Cooley (6) refers to 'self and society' as twin-born and suggests that the 'self' has no identity apart from society. Bossard (5) uses the analogy of the 'looking glass self' in suggesting that the self-concept is but a reflection of the group role assignment. These principles of self-concept emergence suggest that Negro children in racially mixed settings in which they were in the minority might not perceive a reflection of self which would be as supportive or favorable as that perceived by them in groups in which Negro children predominate.

The findings of the present study are consistent with those of many authorities. Coleman (2) implied an existence of poor concepts on the part of de facto segregated Negro children or of Negro children in school settings where the proportion of Negro children exceeded 50 per cent due to their lack of confidence that they could achieve self-determination. Haggstrom (10) concluded that residential segregation developed poor self-concepts, and Stinson (31) reports that both white and Negro students failed to change self-concepts after integration and that no significant
differences were observed between changes in self-concepts of integrated and segregated Negro high school students. Stinson’s (31) conclusion that Negro children’s self-concepts did not improve after integration was confirmed by the present study.

Katz (15) refers to a summary of observations of numerous investigators of Negro personality. "Whenever segregation occurs, one group . . . . . . always suffers from inferior social status. The damaging effects of this are reflected in unrealistic feelings of inferiority" (15).

Findings Relative to Racial Attitude and Other Studies

The findings that Negro children fail in culturally mixed classrooms to improve racial attitudes is in some agreement with studies by St. John (15) who found Negro children exhibiting more self-preference in racially mixed schools than whites and Criswell (27) who reported that Negro children tended to withdraw from white children before white children began withdrawing from Negro children. Singer (29), though reporting an overall decrease in racial hostility in an integrated school setting, does report greater hostility developing for certain sub-groups. Negro and white girls with high mental ability exhibited the greatest hostility.

The findings of the present study are not consistent with the study by Singer (29), who found students, both Negro and white, to be less prejudiced than matched segregated students, with, however, marked variance among sex and IQ groups. After 300 Negro children entered a previously all-white junior high school, Webster (10) found Negro children more accepting of white children and the latter less accepting of Negro children. Gordon (8) also found Negro students showing less self-preference than white students at a high school with Negro membership at 8 per cent. Haggstrom (10) found
that residentially integrated Negro families tended to be less hostile to whites. Radke (25) reported that white children began to see Negro children as more desirable as friends following summer camp integration. Gottlieb (9) reports a decrease in racial choices as desegregation proceeded.

The failure for sex and IQ variables to interact in the present study fails to support the findings of Singer (29) that girls with high mental ability exhibited the greatest amount of racial hostility after integration and others who report greater reluctance of females to interact across ethnic lines. Parsons (24) saw more ethnic self-preference among females in a school composed of Anglo-American and Mexican-American children than among males. Negro and white high school girls were found to mix less than males by Gordon (8). Kettig (17) reported female teachers less willing to integrate faculties than were male teachers.

Failure of Negro students to view whites more favorably after integration could be partially explained by the pleasurable experience principles of Havighurst (12) of the "interdependence" principle of Lewin (20). Havighurst maintains that "children will learn to appreciate and enjoy being with people of other social and racial groups if experiences with other groups are pleasurable" (12). Lewin maintains that "what makes a group cohesive is not how like or unlike its members are, but how interdependent" (20). Sherif (28) found that two groups of boys did not resolve inter-group tension and hostility until interdependence of the two groups was established. Data were not collected in the present study to provide evidence as to the extent to which subjects were involved in pleasurable or interdependent activities.
Another condition which might have influenced the results would be the extent to which unfavorable stereotypes about whites held by Negro children were reinforced as a result of personal contact. Morrow (20) warns that only experiences which show stereotypes to be false will erase them. As stereotypes are seen by Morrow as arising from incomplete evidence, and if Negro children see white children as hostile or rejecting, their unfavorable stereotypes may be reinforced through integration in these settings rather than dissipated.


CHAPTER V

SUMMARY OF PROCEDURE, FINDINGS, AND CONCLUSION ABOUT IMMEDIATE EFFECTS OF SCHOOL INTEGRATION

Summary of Procedures

In order to provide evidence which would help identify some of the immediate benefits which might be reasonably expected to accrue for Negro children through school integration, an attempt was made to measure the effects of one year of school integration on a group of newly-integrated Negro students. The areas of growth examined were academic achievement, self-concept, and racial attitude.

Growth in the areas under examination were ascertained by comparing the changes on appropriate instruments of a group of ninety-nine, newly-integrated Negro children in grades four, five, and six with those of a matched group of de-facto-segregated Negro children. The children were matched on the basis of mental ability, sex, age, grade level, and socio-economic status.

The instruments used to measure the changes in academic achievement, self-concept, and racial attitude were the Iowa Test of Basic Skills, the California Test of Personality, and the Purdue Racial Attitude Scale respectively. All of these instruments were administered to integrated and segregated subjects at the beginning and close of the school year. Mean changes of the two groups were determined for each instrument. Differences in the changes of the two groups on each instrument were treated statistically.
Furthermore, integrated subjects were sub-divided according to mental ability, sex, and extent of classroom integration to determine if these factors were related to the growth of the integrated children. For this purpose, relative changes on the instruments were determined by comparing the mean changes of the sub-groups with those of their segregated counterparts; then, these relative mean changes of the various sub-groups of integrated children were compared utilizing the analysis of variance technique to determine the significance of the differences.

Findings concerning the growth of the integrated Negro children are presented separately for each area of concern: academic achievement, self-concept, and racial attitude.

Findings Relative to Academic Achievement

1. The major finding, relative to academic growth, was that the newly integrated Negro students failed to exceed the growth of matched students attending de-facto-segregated classes on the Iowa Test of Basic Skills. The small difference between the two groups, in mean gains from pre-to-post tests, favored the segregated group.

2. Significant differences among relative mean gains of integrated students were not found for sub-groups based on mental ability, sex, or extent of classroom integration.

3. Trends were for integrated subjects with lower mental ability, boys, and subjects in classrooms with higher proportions of Negro membership to exceed the relative mean gains of other integrated subjects.

Findings Relative to Self-Concept

1. The major finding, relative to self-concept, was that de-facto-segregated Negro children achieved a significant (F=.001) relative mean
gain over integrated Negro children on the California Test of Personality.

2. Integrated Negro children suffered a significant (P=.001) mean loss on the California Test of Personality, most of the loss appearing on Part II, Social Adjustment.

3. Though de-facto-segregated Negro children also suffered a mean loss on Part II, Social Adjustment; it was offset by a larger mean gain on Part I, Personal Adjustment.

4. No significant effects were observed for integrated Negro children when grouped according to mental ability, sex, or extent of classroom integration.

Findings Relative to Racial Attitude

1. The major finding, relative to racial attitude, was that the de-facto-segregated Negro students increased their mean score on a racial attitude instrument significantly (P=.001) while that of integrated Negro students decreased.

2. When relative mean changes of integrated students were compared for sub-groups based on mental ability, sex, or extent of classroom integration, no significant differences were found.

3. Trends were (1) for subjects with high mental ability to exhibit less favorable changes and (2) for subjects in classrooms where proportion of Negro membership was highest to achieve more favorable changes on the racial attitude instrument.

Conclusions About Integrated Negro Children

The findings enumerated above led to the following conclusion:

1. The inclusion of Negro students in racially-mixed classrooms will
not immediately and automatically produce spurts of academic growth, improved self-concepts, or more positive racial attitudes.

2. Any serious attempt to assess the values or effects of school integration on Negro children must be longitudinal in design and focus on long-range objectives.

3. The process of closing the educational gap between minority-group children and majority-group children will not be accomplished simply through a mixing of the groups in the learning environment.

4. Contact alone between ethnic groups will not insure a reduction of ethnic tension. Unplanned experiences cannot be trusted to be pleasant, stereotype-correcting, or stress-reducing.

5. Personal anxieties of Negro children in classrooms in which the vast majority of the children and authority-figures belong to the dominant-white group are substantial enough to interfere with their growth and development.

6. Inclusion of Negro children in racially-mixed school settings would be eased through the equalizing of educational standards and opportunities among all schools. Children moving into schools whose academic standards are substantially higher than those of his previous schools face a threat of failure which may create undue anxieties.

7. Racial attitudes of Negro children attending de-facto-segregated schools seem to be in suspension. It is possible that these children do not have sufficient exposure to white persons on a regular basis to cause their image of members of other ethnic groups to undergo revisions. Corrections of stereotypes held by these children will await experience.
Implications for Schools

The major implication emanating from the data collected for the present study is that schools should plan for effective integration. New combinations of ethnic and minority-group children in classrooms offer teachers and professional educators stimulating and unusual opportunities to foster personal growth of all children. The data collected and presented in the present study do not indicate that these opportunities are being utilized or recognized. All present evidence and competence available in the field of human behavior should be brought to bear on the problems and challenges inherent in racially-mixed school settings.

Planning for effective integration should entail various innovative strategies. Among those suggested by the data gathered in the present study are

1. An attempt should be made to determine what kinds of schools and staffs would be best suited to deal with the academic and psychological problems peculiar to totally integrated schools. Implicit in this procedure would be a close look at the ethnic composition of the staff and authority figure group.

2. Teacher training programs should be initiated which would extend the existing competencies of teachers and administrators and provide 'new skills' for 'new schools'.

3. Compensatory efforts should be undertaken to equalize educational opportunities and standards at all schools to ease children's movements into classrooms of varying ethnic compositions.

4. An innovative approach to measurement is needed including an expansion of the spectrum of skills and abilities now seen as relevant to
and possessing value for 'life success'. Traditional instruments, found to be quite useful in obtaining valid measures of populations which fit the normal curve, may be totally inadequate when applied to minority-group children. Both validity and reliability claims for various instruments should be viewed cautiously when generalized to minority samples.

Recommendations for Further Studies

1. The major recommendation resulting from the present study is that a longitudinal study be designed to test the effects of integration over a considerable period of time. The continued academic progress, the changes in personal and social adjustment, as well as changes in attitudes toward other racial and ethnic groups should be continuously plotted as these subjects proceed through school. The data herewith presented should be considered only a pre-measure of subjects undertaking a series of experiences teeming with possibilities for modification of personality and challenges to academic potential.

2. As only Negro children were included in the present study, a companion study examining the effects of school integration on white children within the same or similar classrooms should be initiated. Of particular interest would be data which would shed light on possible restructuring of stereotypes as a result of their continuous exposure to Negro children.

3. Similar studies are needed in areas where the school composition includes an ethnic group other than Negro and white.

4. As the present study dealt only with Negro children from non-professional home backgrounds, it is possible that different results might be obtained through a similar study of middle class Negro children.
5. Due to the difficulties encountered in matching the subjects on socio-economic background, attention needs to focus on new, innovative techniques for matching minority-group children on this characteristic. The homogeneity of occupations of both parents did not lend itself to the use of any type of occupational scale.

6. The extent to which standardized mental ability tests are effective in matching minority-group children on academic potential is in need of review.
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