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ABSTRACT

The Riverside Schools in California desegregated gradually, beginning in 1965. Three segregated minority schools were closed and the students bused to white neighborhoods. This evaluation report analyzes longitudinally and in cross-section the achievement of students in desegregated schools. In the former analysis, pupils who were in grades K-3 the first year of desegregation are studied. The standardized achievement scores of these students are compared each year with the scores of all students in the district at the same level. It is concluded that: the achievement of bused pupils did not increase; the achievement of pupils desegregated in grade 2 or earlier neither increased nor decreased; and, the achievement of pupils desegregated after grade 2 decreased in comparison to that of other pupils. The cross-sectional analysis included all bused and receiving pupil grades K-3 each year, from 1965-66 through 1969-70. This study found that: the achievement of pupils in grades K-3 increased from 1966 to 1970; the achievement of bused pupils in kindergarten was significantly higher in 1970 than in 1966, while that of pupils in grades 2 and 3 was slightly lower; and, bused pupils in grades 2 and 3 with low and average achievement achieved less in desegregated schools than they had done in segregated schools. (Author/JW)

RIVERSIDE UNIFIED SCHOOL DISTRICT
Riverside, California

DEPARTMENT OF RESEARCH AND EVALUATION
March, 1971

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THE ACHIEVEMENT OF PUPILS IN DESEGREGATED SCHOOLS

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March, 1971

Abstract
of
THE ACHIEVEMENT OF PUPILS IN DESEGREGATED SCHOOLS

Riverside schools were desegregated by closing three segregated minority schools and busing the pupils to schools in predominantly majority neighborhoods. Busing was accomplished gradually, with a few classes at the segregated schools being closed at the beginning of each of three succeeding school years. The first pupils were bused in 1965-1966; when the 1967-1968 school year began, all pupils attended desegregated schools. The achievement of pupils in the desegregated schools was analyzed longitudinally and cross-sectionally.

The longitudinal analysis included pupils who were in kindergarten, second, and third grades the first year of desegregation and who still attended Riverside schools five years later. The standardized achievement test scores of these pupils were compared each year to the scores of all district pupils at the same grade level. The major findings of the longitudinal study were:

1. The achievement of bused pupils did not increase; the gap between bused pupils and other pupils was at least as wide in 1970 as in 1966.
2. While the achievement of pupils desegregated in or prior to the second grade did not increase, it did not decrease. The gap between low achieving children and other children usually widens as they grow older. Perhaps desegregation, when begun in or prior to the second grade, prevented the growth of the gap.
3. The achievement of pupils desegregated after the second grade decreased in comparison to other pupils. Desegregation probably did not cause the decrease but failed to prevent it.

The cross-sectional analysis included all bused and receiving pupils who were in kindergarten, second, and third grades each year from 1965-1966 through 1969-1970. The major findings of the cross-sectional study were:

1. The achievement of receiving pupils in kindergarten, second, and third grades increased from 1966 to 1970.
2. The achievement of bused pupils in kindergarten was significantly higher in 1970 than in 1966 while that of second and third grade bused pupils was slightly lower.

3. There was a correlation between the achievement of bused pupils and receiving pupils attending different schools. That is, if the average achievement of receiving pupils at a particular school was high in comparison to receiving pupils at other schools, the average achievement of bused pupils at that school was also likely to be high in comparison to bused pupils at other schools. This correlation seemed to be due to school and classroom effects, rather than to the socioeconomic backgrounds of the receiving pupils, as had been suspected when similar correlations existed in previous years.
4. Low and average achieving bused pupils in the second and third grades achieved less in desegregated schools than they had in segregated schools; high achieving bused pupils achieved slightly more. This may be due to the fact that, although there has been an attempt to provide transitional programs in the desegregated schools, these programs have not been as comprehensive or as intensive as the compensatory programs of the segregated schools.

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THE ACHIEVEMENT OF PUPILS IN DESEGREGATED SCHOOLS

Introduction

A plan to racially balance Riverside schools was adopted on October 25, 1965, more than five years ago. One of the anticipated outcomes was an increase in the achievement of minority pupils without a consequent decrease in the achievement of majority pupils.

Three previous annual reports have shown very little change in the achievement of either minority or majority pupils. In each report, the analysis was cross-sectional; i.e., the achievement of pupils at a particular grade level was compared to the previous achievement of other pupils at that same grade level. The test scores of all pupils enrolled in that grade at the time of testing were included, regardless of the length of time that they had attended Riverside schools. This type of analysis did not indicate what changes, if any, occurred in the achievement of pupils who had attended Riverside schools continuously since desegregation began. It was suspected that many of the pupils included in previous reports might have been relatively new to the school district and that their achievement might have been lower than that of the other pupils, thus lowering the average. To test the validity of this suspicion, a five-year longitudinal analysis was conducted of the test scores of certain groups of minority pupils who were in Riverside schools in 1965-1966 and who were still bused for integration in 1969-1970. This report contains that longitudinal study as well as a continuation of the cross-sectional study.

Racial balance was accomplished by closing three schools which were virtually one hundred per cent minority and busing the pupils to schools in predominantly majority neighborhoods. Some pupils were also bused from two other schools which had become racially imbalanced due to changing neighborhood patterns. Approximately 225 pupils at each grade level are now bused for integration; they constitute 15 per cent of all pupils in the receiving schools. Approximately 53 per cent of the bused pupils are Mexican-American; 47 per cent are black. Busing began in the fall of 1965, when the primary grades of one school and the kindergarten of another were closed. Additional classes were closed at the beginning of each of the two following school years. When the 1967-1968 school year began, all pupils attended desegregated schools.

Longitudinal Data

Three groups of pupils have taken reading achievement tests each year since 1965-1966: these groups are made up of pupils who have attended Riverside schools continuously since that time, and who were fourth, sixth, and

seventh grade students in 1969-1970. During the first year of desegregation, they were in kindergarten, second, and third grades. Not all of these pupils, however, were desegregated that first year, nor even the year following. The test scores used in this analysis are specified in Table 1.

TABLE 1
TEST SCORES USED IN LONGITUDINAL ANALYSIS

Group	Grade	Year	Test	Time of Testing
1	K	1965-66	Metropolitan Readiness Test, Form A	Spring
	1	1966-67	Stanford Achievement Test, Primary I, Form W, total reading score	Spring
	2	1967-68	Stanford Achievement Test, Primary II, Form W, total reading score	Spring
	3	1968-69	Stanford Achievement Test, Primary II, Form X, total reading score	Spring
	4	1969-70	Comprehensive Tests of Basic Skills, Level 2, Form R, reading total score	Spring
2	2	1965-66	Stanford Achievement Test, Primary II, Form W, total reading score	Spring
	3	1966-67	Stanford Achievement Test, Primary II, Form X, total reading score	Spring
	4	1967-68	Sequential Tests of Educational Progress, Form 4B, reading score	Fall
	5	1968-69	Sequential Tests of Educational Progress, Form 4A, reading score	Fall
	6	1969-70	Comprehensive Tests of Basic Skills, Level 2, Form Q, reading total score	Fall
3	3	1965-66	Stanford Achievement Test, Primary II, Form X, total reading score	Spring
	4	1966-67	Sequential Tests of Educational Progress, Form 4B, reading score	Fall
	5	1967-68	Sequential Tests of Educational Progress, Form 4A, reading score	Fall
	6	1968-69	Stanford Achievement Test, Intermediate II, Form W, total reading score	Fall
	7	1969-70	Comprehensive Tests of Basic Skills, Level 3, Form Q, reading total score	Spring

As several different tests were given, raw scores were not comparable from year to year. Standard scores, based on district-wide means and standard deviations, were therefore derived. Each standard score represents the test score of a bused pupil in comparison to other pupils in the district at that grade level that year. In every instance the district mean is assigned a standard score of 50 with the standard deviation represented by 10 standard score points. A pupil with a standard score of 60 would be one whose score exceeded the district mean by an amount equal to the standard deviation of that mean score. Likewise, a pupil receiving a standard score of 40 would have fallen below the district mean by the same amount. Roughly 68 per cent of the scores on each test would receive standard scores between 40 and 60. The longitudinal analysis is thus a study of the achievement of bused pupils in comparison to other pupils in the district. It is not indicative of the current achievement of bused pupils in comparison to the previous achievement of other bused pupils; the cross-sectional analysis was designed for that purpose.

Logical and technical restrictions limited this study to children who met all of the following criteria:

- (1) They were originally scheduled to attend either Casa Blanca, Irving, or Lowell Schools in September 1965.
- (2) Their addresses in Spring 1969 indicated that they still lived in the neighborhoods of the three formerly segregated schools and were still being bused for integration at that time.
- (3) They attended one of the three segregated schools or one of the receiving schools each year. (Each child's address could not be checked each year; this qualification was designed to exclude children who moved and who were not bused for integration at the time of any one of the testing sessions.)
- (4) They progressed one grade level each year. (This was an unfortunate restriction placed on the study by the method of comparison used. It excluded many children who were retained one or more years as well as several who received double promotions.)
- (5) They took a reading achievement test each year.
- (6) They did not withdraw from the Riverside School Study.

Group One (K-4)

The achievement of the first group of pupils considered in this paper was followed from kindergarten through the fourth grade. There were 52 pupils in this group. As half of them would have been assigned to kindergarten at Irving and Lowell Schools in 1965-1966 and all kindergarten pupils from those schools were bused to other schools that year, these children attended segregated schools for only a few weeks at most. Of the remaining

pupils in this group, some attended the segregated Casa Blanca School through kindergarten and some through the first grade. Figure 1 shows that the average achievement of all of these pupils, in relation to other pupils in the district, changed very little; it decreased slightly in 1968 and in 1969 but rose again in 1970 to its 1966 level. Thus, the gap between bused pupils and other pupils was not less in 1970 than it had been in 1966. Neither was it any greater, however. As children grow older, the distance between low-achieving pupils and other pupils usually widens. Desegregation appears to have prevented the growth of the gap but has not begun to close it. Even this slight progress must be viewed with caution, however: these children are only in the fourth grade. Will desegregation prevent the growth of the gap or simply delay it? A continuation of this study for the next several years should provide the answer.

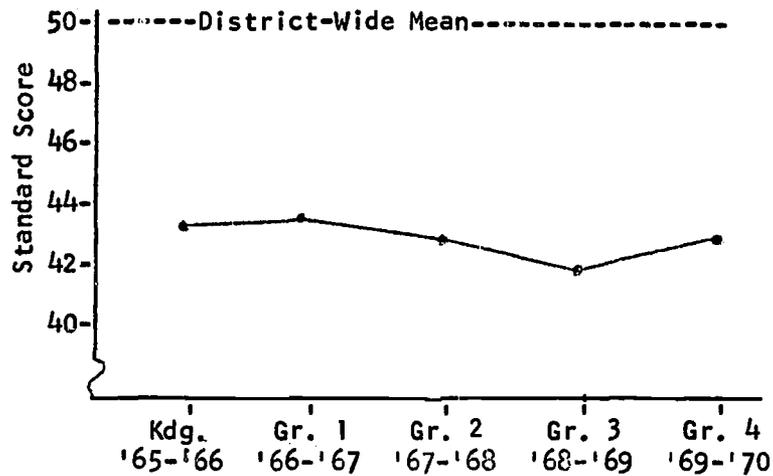


Fig. 1.--Mean standard scores, Group One.

The data were analyzed by sex, ethnicity, and the grade level of the pupils when they first attended desegregated schools, or analytic group (Appendix, Figure 7, Table 2). Analytic group indicates the grade level of the pupils when they first attended desegregated schools as well as the segregated school which they attended, or would have attended. The pupils included in each analytic group are specified in the footnote to the table. The average score of none of the subgroups changed significantly between 1966 and 1970 nor were there any significant differences between any of the subgroups in 1970.

Group Two (2-6)

Of the 56 pupils in this group, all of whom were in the second grade in 1965-1966, 13 were first desegregated at the beginning of second grade, 26 at the beginning of third grade, and 17 at the beginning of fourth grade. When they were tested shortly after beginning the sixth grade, then, each child had experienced slightly more than 2, 3, or 4 years of desegregation. As shown in Figure 2, the achievement of these pupils fell increasingly further

behind that of other pupils in the district. The average standard score of these bused children in 1969-1970 was significantly lower than in 1965-1966.

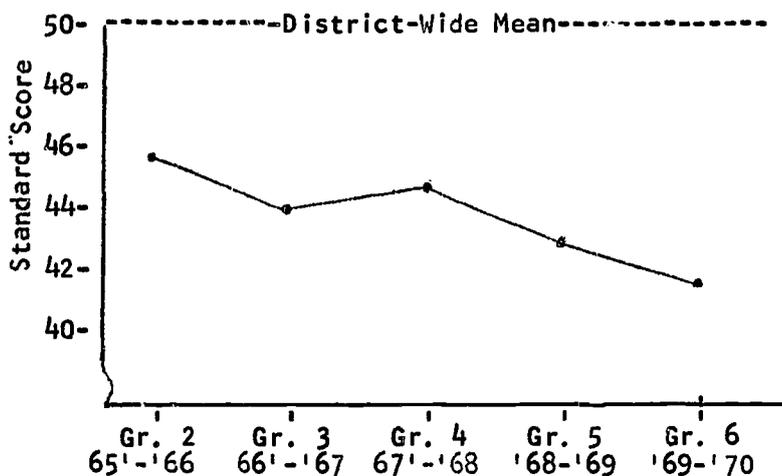


Fig. 2.--Mean standard scores, Group Two.

Further analysis of the data has shown that the pupils who were desegregated earliest (Analytic Group 2), at the beginning of the second grade, did not fall significantly further behind other pupils and that their scores were consistently, but not significantly, higher than the scores of pupils who were desegregated later (Appendix, Figure 8, Table 3). Table 4 shows that pupils who were desegregated first also scored higher on tests of intelligence than pupils who were desegregated later although the differences, again, were not statistically significant. As the tests were given at the end of the third grade, after two years of desegregation, the differences would have been difficult to interpret if they had been significant. Differences might have resulted from higher motivation, etc. in desegregated classes, or they may have been the reason for higher achievement of pupils in this group. The average socioeconomic status of pupils in the various analytic groups differed very little. The implication is that the younger that children are when they are desegregated the more readily schools may prevent the growth of the gap between them and other children.

An analysis by sex shows that the average scores of both boys and girls dropped significantly between 1965-1966 and 1969-1970. There were no significant differences between the average scores of the two in either 1965-1966 or 1969-1970 although the girls scored higher than the boys each year.

The average achievement of Mexican-American and black students did not differ significantly in 1965-1966 or 1969-1970 but the average score of the blacks was consistently higher. The average score of the Mexican-American students decreased significantly between 1965-1966 and 1969-1970; that of the blacks did not.

Group Three (3-7)

Pupils in this group, who were one year older than Group Two and three years older than Group One when they were desegregated, also continued to fall farther and farther behind other pupils in the district, as shown in Figure 3. Sixteen of the 49 pupils were desegregated at the beginning of the third grade, 21 at the beginning of the fourth grade, and 12 at the beginning of the fifth grade.

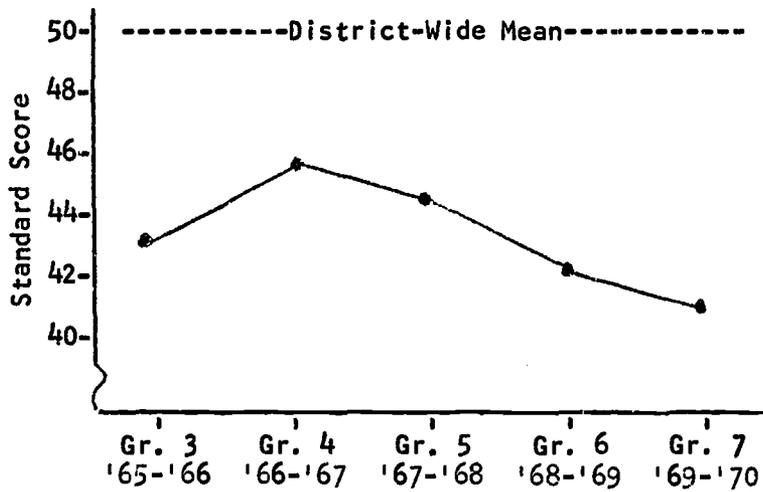


Fig. 3.--Mean standard scores, Group Three

Length of the time desegregated did not seem to influence the scores of pupils in this group. In fact, the pupils who were desegregated last scored consistently higher than did pupils who were desegregated earlier. Their scores in 1966 and 1970 were significantly higher than those of pupils desegregated one year earlier (Analytic Groups 4 and 7 combined) but not significantly higher than pupils desegregated two years earlier (Appendix, Figure 9, Table 5).

Although there were no significant differences between the scores of boys and girls in 1966 or in 1970, the average score of the girls decreased significantly while that of the boys did not.

As in the second grade, the average scores of the two ethnic groups did not differ significantly either year but the average achievement of Mexican-American students decreased significantly while that of black students did not.

Cross-Sectional Data

In the longitudinal section of this report, the progress of bused pupils who have attended district schools since the beginning of desegregation was followed for five years; each year the achievement of bused pupils was compared to the achievement of other pupils in the district. In this section, the achievement of all bused and receiving pupils at a particular grade level will be compared to the achievement of other bused and receiving pupils at that same grade level during the previous four years. In other words, achievement scores of such groups of children in a single grade in 1969-1970 will be compared with similar groups of children who were in the same grade in each prior year as far back as 1965-1966. Since the same tests have been repeated each year only at the kindergarten, second, and third grades, most of this section will be devoted to them. Although first grade pupils took a different test last year (1969-1970) than previously, their achievement last year is of interest and will be included.

Raw scores were used in this analysis. The tests, all of which were given in the spring of each year, were:

Kindergarten - Metropolitan Readiness Test

Grade 1 - Cooperative Primary Tests - Reading

Grade 2 - Stanford Achievement Test - total reading score

Grade 3 - Stanford Achievement Test - total reading score

Kindergarten

As shown in Figure 4, the average Metropolitan Readiness Test scores of both bused and receiving pupils continued to rise in 1970.

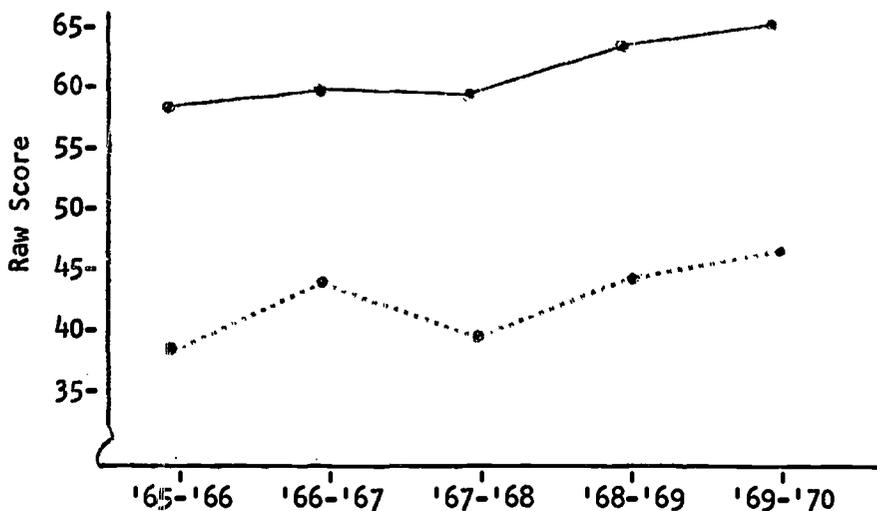


Fig. 4.--Mean raw scores, kindergarten pupils.

Legend: Bused pupils
———— Receiving pupils

Some of the increase among the bused pupils might be attributed to desegregation; however, since the increase occurred among the receiving pupils also, most of it is probably due to other factors. The factor which may be primarily responsible is an increasing emphasis on the development of readiness skills in many kindergarten classes.

As in previous years, the average scores of pupils bused to different schools varied widely--from a low of 36.60 at Hyatt to a high of 54.00 at Washington (Appendix, Table 6). There are probably many reasons for these differences: the home environments of the pupils varied; the development of readiness skills was probably more important to some teachers than to others; the testing situations varied, as did the children's responses to them, etc.

First Grade

Due to a change in the State testing program, first grade pupils were given the Cooperative Primary Tests in 1970; previously they had taken the Stanford Achievement Tests. Since the data from the two tests are not comparable, only 1970 data will be included in this report. As shown in Table 7 of the Appendix, the average raw score of the bused pupils was 19.68; the average raw score of the receiving pupils was 26.08. As was true of the kindergarten results, there were significant differences among the average scores of pupils attending different schools.

Second Grade

The average Stanford total reading score of the receiving pupils in the second grade in 1970 was virtually the same as in 1969 (47.70, in 1970; 47.96 in 1969), while the average score of the bused pupils was slightly, but not significantly, lower in 1970 than it had been in 1969 (30.19 in 1970; 31.79 in 1969). It was also slightly lower than the 1966 score, indicating that the second grade bused pupils in 1970, who had never attended segregated schools, achieved no higher than pupils who were still segregated or who had been desegregated for less than one year (Figure 5).

As at other grade levels, wide discrepancies occurred in the 1970 achievement of pupils bused to different schools--from 22.00 at Hyatt to 43.14 at Palm (Appendix, Table 8).

Third Grade

The average score of third grade bused and receiving pupils changed very little from 1969 to 1970 (Appendix, Table 9). However, as shown in Figure 6, the average achievement of the receiving pupils has risen slightly since 1966 while the average achievement of the bused pupils has decreased slightly. Again, wide differences among schools were noted in 1970--from 28.50 at Harrison to 57.54 at Magnolia.

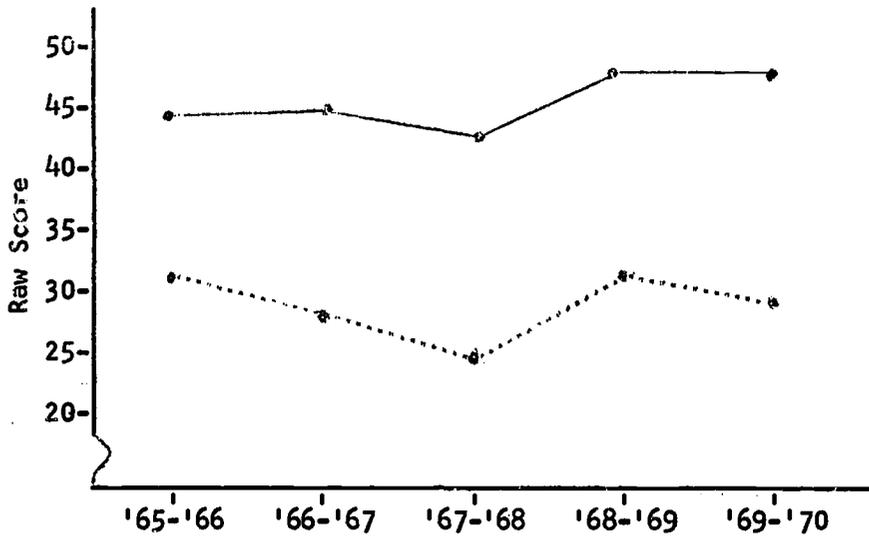


Fig. 5.--Mean raw scores, second grade pupils.

Legend: Bused pupils
———— Receiving pupils

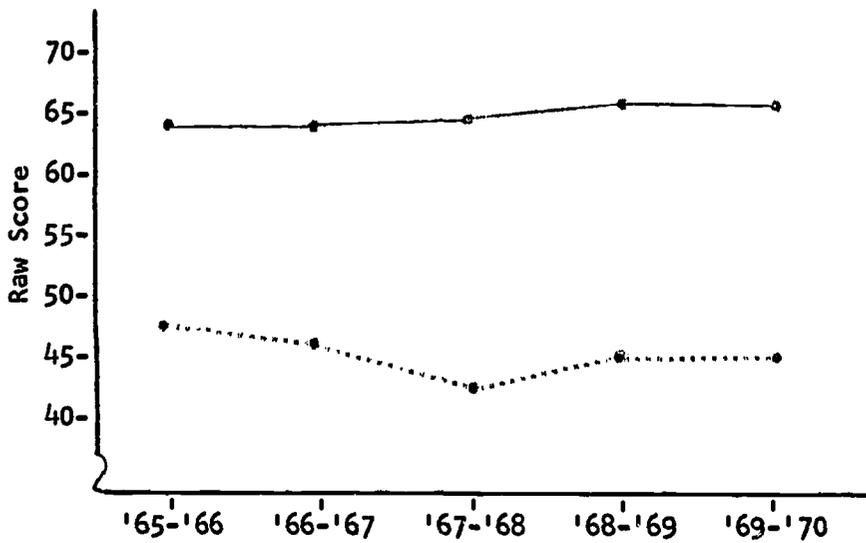


Fig. 6.--Mean raw scores, third grade pupils.

Legend: Bused pupils
———— Receiving pupils

School Effects on Achievement

Although there is a large difference between the average achievement of bused and receiving pupils at each school, the test scores of the two groups do seem to be related. That is, if the average achievement of receiving pupils is high at a particular school in comparison to receiving pupils at other schools, the average achievement of bused pupils at that school may also be high in comparison to bused pupils at other schools. This relationship was observed and reported in the two most recent previous reports. Significant correlations were found between the average test scores of bused and receiving pupils at several grade levels. The first hypothesis accepted as an explanation of the correlations was the Coleman (1966)¹ finding that "if a minority pupil from a home without much educational strength is put with schoolmates with strong educational backgrounds, his achievement is likely to increase."

This year, when significant correlations were found at the first and second grades (but not at kindergarten and third grades), a further analysis was conducted to determine whether pupils bused to schools at which their classmates are from high socioeconomic backgrounds achieve more than pupils bused to schools with low socioeconomic classmates. The receiving schools were ranked at each grade level by the per cent of pupils whose fathers' occupations were professional or managerial. The scores of the bused pupils at the five highest and five lowest schools were compared. No significant differences were found (Appendix, Table 10).

A similar analysis was then conducted using the average achievement of the receiving pupils instead of their socioeconomic status. Pupils bused to high-achieving schools scored significantly higher than those bused to low-achieving schools at every grade level (Appendix, Table 11). This indicates that factors other than, or in addition to, the socioeconomic backgrounds of receiving pupils are similarly affecting the achievement of both bused and receiving pupils. What are those factors? What caused the high achievement of bused and receiving pupils in the Washington School kindergarten? The Palm School first and second grades? The Magnolia third grade? Likewise, what happened to the kindergarten pupils at Madison and Hyatt? The first grade pupils at Pachappa? The third grade pupils at Harrison? These findings must be more thoroughly investigated, but the evidence suggests that strengths and weaknesses within the individual classrooms and/or schools are responsible for the relationship.

The kindergarten data provide a good example of school or classroom effects on the achievement of bused and receiving pupils. The average readiness test scores of bused pupils ranged from 36.60 at Hyatt School to 54.40 at Washington. Receiving pupils at those schools scored 62.81 and 65.86, respectively. Of the kindergartens at the 17 receiving schools, Hyatt ranked fourth socioeconomically; its receiving pupils ranked eleventh academically. Washington ranked eleventh socioeconomically; its receiving pupils ranked fifth academically.

¹ James S. Coleman, et al. Equality of Educational Opportunity (U.S. Department of Health, Education, and Welfare. Washington, D.C.: U.S. Government Printing Office, 1966).

The differences may have been due to a combination of several of the factors mentioned earlier, such as the home environments of the pupils and the amount of emphasis which the teachers placed on the development of readiness skills. Since the socioeconomic backgrounds of the receiving pupils at Hyatt were higher than at Washington and their achievement was slightly lower, however, the first theory should probably be rejected in this instance. Were the goals of the kindergarten teachers at the two schools different? Some teachers view kindergarten primarily as a socializing experience; others see it as a beginning of the development of the skills which will be acquired during the primary grades. Readiness tests measure the latter but not the former. Perhaps many schools which seem to be lacking in the development of readiness skills are superior in the development of social skills and attitudes. However, must the socialization process interfere with the development of readiness skills? At the kindergarten level, it is especially easy to provide learning experiences which are enjoyable. Skill-building activities need not become anxiety-producing situations, as some socialization proponents would claim.

High- and Low-Achieving Bused Pupils

Previous reports have noted that desegregation seems to be more beneficial for high-achieving minority pupils than low-achieving ones. A comparison of the 1966, 1969, and 1970 tenth, 25th, 50th, 75th, and 90th percentiles (Appendix, Table 12) shows that the scores of kindergarten pupils at all levels have risen. However, the 10th, 25th, and 50th percentiles at the second and third grades have decreased while the 75th and 90th percentiles have increased slightly. Are average and low-achieving bused pupils achieving less in desegregated schools than in segregated schools because the segregated schools had compensatory programs which were not transferred to the receiving schools?

In its Proposed Plan for Integration of October 18, 1965, one of the goals of the district was, "To provide transitional and enrichment programs to all pupils in the district where needed, including tutorial help, remedial reading classes, smaller classes where possible, etc. . . ." Has the district done everything possible to meet this goal?

Summary

A. Longitudinal Data

1. The achievement of bused pupils has not increased; the gap between bused pupils and other pupils was at least as wide in 1970 as in 1966.
2. While the achievement of pupils desegregated prior to the second grade has not increased, it has not decreased. The gap between low-achieving children and other children usually widens as they grow older. Perhaps desegregation, when begun prior to the second grade, prevented the growth of the gap.

3. The achievement of pupils desegregated after the second grade decreased in comparison to other pupils. Desegregation probably did not cause the decrease but failed to prevent it.

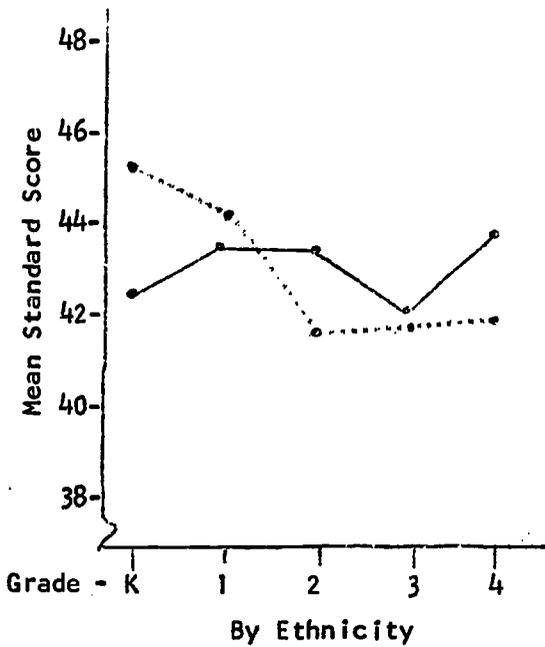
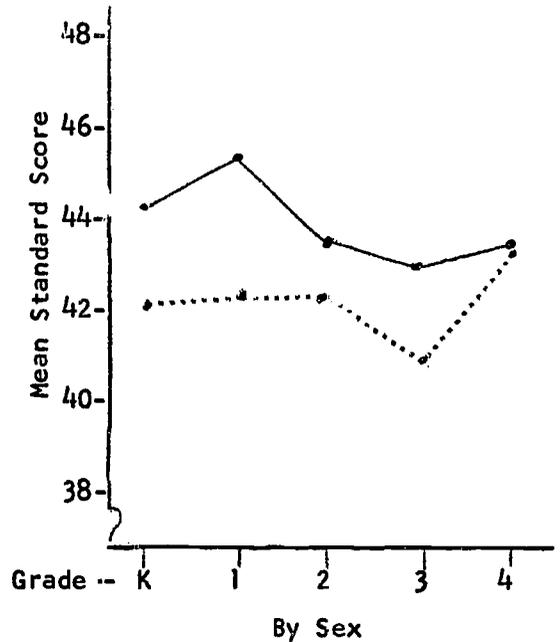
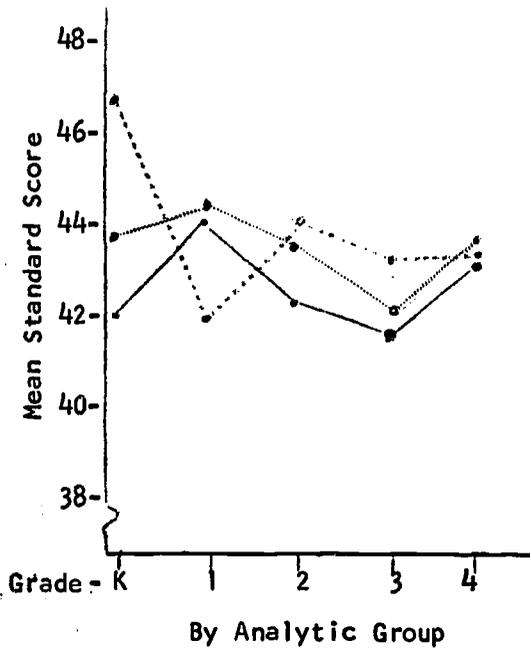
B. Cross-Sectional Data

1. The achievement of receiving pupils in kindergarten, second, and third grade increased from 1966 to 1970.
2. The achievement of bused pupils in kindergarten was significantly higher while that of second and third grade bused pupils was slightly lower in 1970 than in 1966.
3. There is a correlation between the achievement of bused pupils and receiving pupils attending different schools; pending further investigation, this correlation has been attributed to school and classroom effects rather than to the socioeconomic backgrounds of the receiving pupils, as was originally hypothesized.
4. Low- and average-achieving bused pupils in the second and third grades are achieving less now than they did in segregated schools; high-achieving bused pupils are achieving slightly more. This may be due to the fact that, although the desegregated schools have attempted to provide transitional programs, they have not been as comprehensive or as intensive as the compensatory programs of the segregated schools.

"Eliminating the bonds of racial discrimination by itself helps create the framework of a better education. But this should not become an argument on behalf of planlessness. Specific instructional strategies-- and this is what many people regard as 'education'--must accompany an integration plan. This is the practical purpose of integration."

¹Meyer Weinberg, Desegregation Research: An Appraisal, 2nd ed. (Phi Delta Kappa, Bloomington, Indiana, 1970)

APPENDIX



Legend

Analytic Group:

- 2 (Desegregated in Kdgn. from Irving and Lowell)
- 4 (Desegregated in Grade 1 from Casa Blanca)
- · - · 7 (Desegregated in Grade 2 from Casa Blanca)

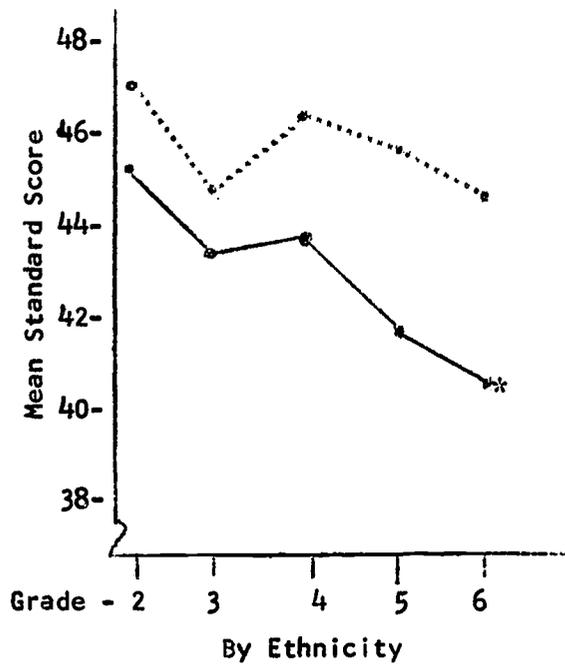
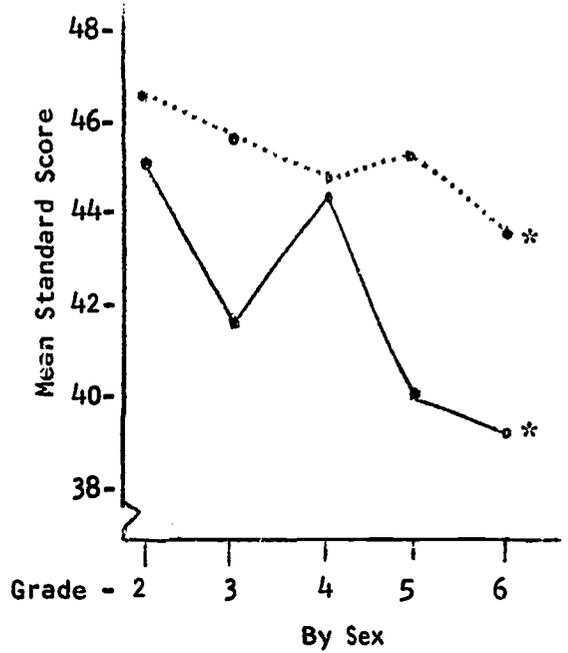
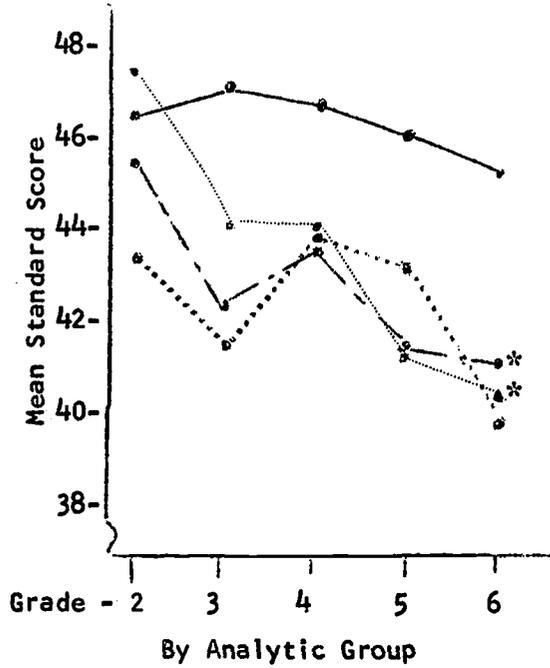
Sex:

- Boys
- Girls

Ethnicity:

- Mexican-American
- Negro

Fig. 7.--Mean Standard Scores, by Analytic Group, Sex, and Ethnicity, Group One.



Legend

Analytic Group:

- 2 (Desegregated in Grade 2 from Lowell)
-●..... 3 (Desegregated in Grade 3 from Irving)
- - -●- - - 4 (Desegregated in Grade 3 from Casa Blanca)
- · - · -●- · - · 7 (Desegregated in Grade 4 from Casa Blanca)

Sex:

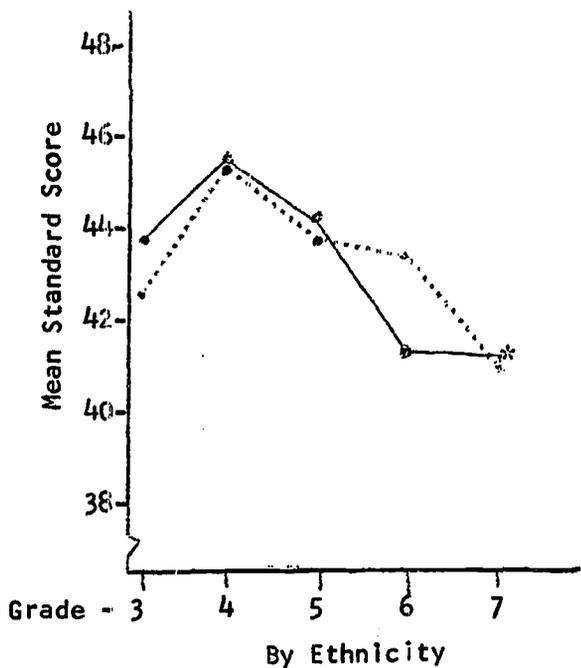
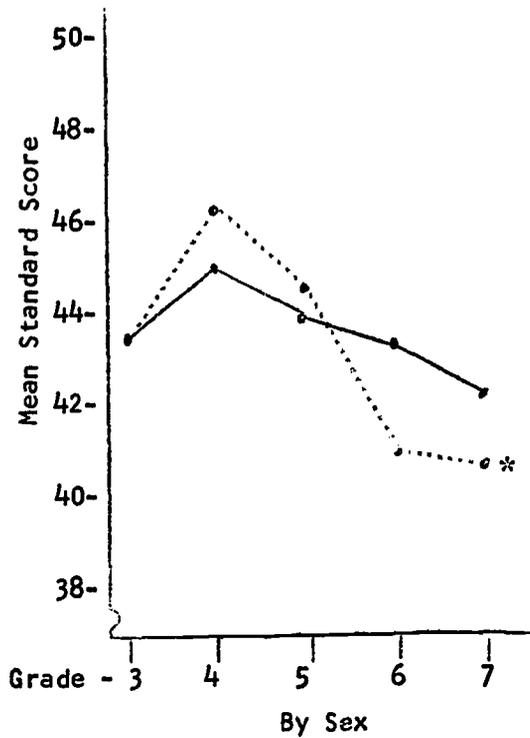
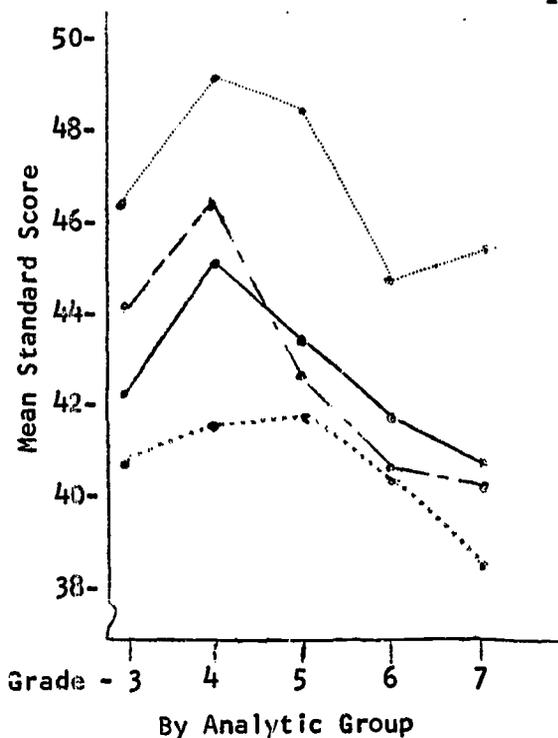
- Boys
-●..... Girls

Ethnicity:

- Mexican-American
-●..... Negro

* The difference between the 1965-1966 and 1969-1970 scores is significant beyond the .05 level of confidence.

Fig. 8.--Mean standard scores, by Analytic Group, Sex, and Ethnicity, Group Two.



Legend

Analytic Group:

- 2 (Desegregated in Grade 3 from Lowell)
- 3 (Desegregated in Grade 4 from Irving)
- - - 4 (Desegregated in Grade 4 from Casa Blanca)
- · - · 7 (Desegregated in Grade 5 from Casa Blanca)

Sex:

- Boys
- Girls

Ethnicity:

- Mexican-American
- Negro

* The difference between the 1965-1966 and 1969-1970 scores is significant beyond the .05 level of confidence.

Fig. 9.--Mean standard scores, by Analytic Group, Sex, and Ethnicity, Group Three.

TABLE 2
 MEANS, STANDARD DEVIATIONS, AND t-TESTS,
 ACHIEVEMENT TEST STANDARD SCORES
 GROUP ONE

Group	Number	1965-1966		1969-1970		t	p
		Mean	S.D.	Mean	S.D.		
Total Group	52	43.23	6.64	43.29	5.06	0.0578	N.S.
By Analytic Group ^a							
2	25	41.88	7.03	43.04	5.06	0.7087	N.S.
4	8	46.50	3.94	43.25	3.56	1.8681	N.S.
7	19	43.63	6.48	43.63	5.56	0.0000	N.S.
By Sex							
Boys	25	44.36	6.07	43.48	5.43	0.5954	N.S.
Girls	27	42.19	6.97	43.11	4.69	0.6343	N.S.
By Ethnicity							
Mexican-American	38	42.47	6.96	43.79	5.08	1.0944	N.S.
Negro	14	45.29	5.15	41.93	4.76	1.8595	N.S.

^aAnalytic Groups:

- 2 - desegregated in 1965-1966 at the beginning of kindergarten; would have attended Irving or Lowell Schools.
- 4 - desegregated in 1966-1967 at the beginning of first grade; formerly attended Casa Blanca School.
- 7 - desegregated in 1967-1968 at the beginning of second grade; formerly attended Casa Blanca School.

TABLE 3
MEANS, STANDARD DEVIATIONS, AND t-TESTS,
ACHIEVEMENT TEST STANDARD SCORES
GROUP TWO

Group	Number	1965-1966		1969-1970		t	p
		Mean	S.D.	Mean	S.D.		
Total Group	56	45.89	6.28	41.64	9.69	4.0736	<.001
By Analytic Group ^a							
2	13	46.54	5.64	45.38	11.83	0.4696	N.S.
3	11	43.36	8.13	39.82	11.23	1.2964	N.S.
4	15	45.47	5.80	41.13	6.42	2.8504	<.02
7	17	47.41	5.13	40.41	8.36	3.9738	<.01
By Sex							
Boys	25	45.08	6.29	39.20	8.60	3.9484	<.001
Girls	31	46.55	6.20	43.61	10.07	2.0527	<.05
By Ethnicity							
Mexican-American	42	45.43	5.56	40.60	8.70	4.0244	<.001
Negro	14	47.29	7.90	44.79	11.64	1.1839	N.S.

^aAnalytic Groups:

- 2 - desegregated in 1965-1966 at the beginning of second grade; formerly attended Lowell School.
- 3 - desegregated in 1966-1967 at the beginning of third grade; formerly attended Irving School.
- 4 - desegregated in 1966-1967 at the beginning of third grade; formerly attended Casa Blanca School.
- 7 - desegregated in 1967-1968 at the beginning of fourth grade; formerly attended Casa Blanca School.

TABLE 4
 MEAN INTELLIGENCE QUOTIENT^a AND SOCIOECONOMIC
 STATUS^b OF PUPILS IN VARIOUS ANALYTIC GROUPS

Group	Analytic Group	IQ			Socioeconomic Status		
		Number	Mean	S.D.	Number	Mean	S.D.
Group One	2	25	93.08	11.04	23	3.26	2.66
	4	8	91.38	6.89	7	3.43	2.13
	7	19	96.74	9.10	14	3.64	1.63
Group Two	2	13	100.54	11.95	12	3.83	3.51
	3	11	96.82	12.70	8	4.50	1.50
	4	15	92.80	10.95	14	3.50	2.32
	7	17	93.12	10.48	13	4.31	1.90
Group Three	2	16	98.00	4.46	10	3.90	3.39
	3	12	95.92	11.58	9	2.44	2.41
	4	9	93.22	10.63	7	3.00	2.07
	7	12	97.83	8.80	9	4.44	2.36

^aScores from the Lorge-Thorndike Intelligence Test were used. The test was administered to pupils in Groups One and Two in 1966-1967 and to pupils in Group Three in 1965-1966.

^bSocioeconomic status is estimated from the occupation of the head of the household using the major group classifications of the U.S. Bureau of the Census. On a ten-point scale, the highest socioeconomic status receives a score of ten and the lowest receives a score of one.

TABLE 5
 MEANS, STANDARD DEVIATIONS, AND t-TESTS,
 ACHIEVEMENT TEST STANDARD SCORES
 GROUP THREE

Group	Number	1965-1966		1969-1970		t	p
		Mean	S.D.	Mean	S.D.		
Total Group	49	43.37	7.23	41.29	8.37	2.3108	<.05
By Analytic Group ^a							
2	16	42.44	6.95	40.75	9.67	1.1053	N.S.
3	12	40.83	7.31	38.50	5.98	1.3887	N.S.
4	9	44.22	5.61	40.33	5.72	1.8086	N.S.
7	12	46.50	7.36	45.50	8.65	0.4714	N.S.
By Sex							
Boys	23	43.30	7.65	42.09	10.19	1.0628	N.S.
Girls	26	43.42	6.84	40.58	6.26	2.0866	<.05
By Ethnicity							
Mexican-American	35	43.77	6.93	41.31	7.95	2.3030	<.05
Negro	14	42.36	7.85	41.21	9.35	0.6674	N.S.

^aAnalytic Groups:

- 2 - desegregated in 1965-1966 at the beginning of second grade; formerly attended Lowell School.
- 3 - desegregated in 1966-1967 at the beginning of third grade; formerly attended Irving School.
- 4 - desegregated in 1966-1967 at the beginning of third grade; formerly attended Casa Blanca School.
- 7 - desegregated in 1967-1968 at the beginning of fourth grade; formerly attended Casa Blanca School.

TABLE 6

MEAN RAW SCORES, METROPOLITAN READINESS TESTS
KINDERGARTEN, MAY 1969 AND MAY 1970

School	Bused Pupils				Receiving Pupils			
	May 1969		May 1970		May 1969		May 1970	
	Number	Mean Raw Score	Number	Mean Raw Score	Number	Mean Raw Score	Number	Mean Raw Score
Adams	10	46.70	13	51.31	82	56.50	77	61.66
Alcott	11	58.27	12	52.92	56	70.11	49	70.80
Bryant	6	47.33	9	49.22	34	60.85	52	61.92
Castle View	8	44.62	6	44.00	36	62.08	46	66.00
Harrison	.. ^a	..	20	50.55	..	..	99	64.21
Highland	5	52.00	8	47.75	119	67.15	129	70.59
Hyatt	7	43.43	10	36.60	51	66.18	48	62.81
Jackson	14	42.14	19	45.21	112	61.00	104	65.39
Jefferson	24	42.96	20	44.70	92	62.93	81	61.35
Liberty	10	48.80	5	45.40	57	61.77	72	57.81
Madison	11	44.09	9	39.44	66	61.76	68	58.15
Magnolia	20	41.20	16	48.88	78	59.71	89	65.56
Monroe	23	46.48	20	48.95	101	63.12	88	68.28
Pachappa	11	21.64	15	38.46	36	54.61	38	64.76
Palm	6	44.33	10	47.90	37	53.86	39	63.33
Victoria	19	40.42	17	42.24	39	70.79	43	61.88
Washington	14	44.64	13	54.00	71	63.46	64	65.86
Total	199	43.70	222	46.58	1067	62.52	1186	64.49

^aHarrison School was not a receiving school in 1968-1969; in 1969-1970 it received pupils who lived in a housing project which opened in the area of the formerly segregated Casa Blanca School.

TABLE 7
 MEAN RAW SCORES, COOPERATIVE PRIMARY TESTS
 GRADE ONE, MAY 1970

School	Bused Pupils		Receiving Pupils	
	Number	Mean Raw Score	Number	Mean Raw Score
Adams	11	23.55	82	28.87
Alcott	11	22.91	73	30.48
Bryant	6	19.67	38	21.63
Castle View	5	16.00	46	26.35
Harrison	13	17.69	95	25.25
Highland	6	21.17	127	24.57
Hyatt	12	18.92	54	25.67
Jackson	21	20.29	117	26.07
Jefferson	25	22.00	103	26.93
Liberty	4	. . ^a	66	24.42
Madison	11	21.18	64	23.31
Magnolia	29	16.41	81	24.52
Monroe	28	19.50	108	24.66
Pachappa	11	16.18	42	22.98
Palm	7	26.71	37	36.78
Victoria	23	18.61	40	31.68
Washington	15	18.93	75	24.55
Total	238	19.68	1248	26.08

^aThroughout this report, the average scores of groups of less than five pupils have been omitted.

TABLE 8

MEAN RAW SCORES, STANFORD ACHIEVEMENT TESTS, TOTAL READING
GRADE TWO, MAY 1969 AND MAY 1970

School	Bused Pupils				Receiving Pupils			
	May 1969		May 1970		May 1969		May 1970	
	Number	Mean Raw Score	Number	Mean Raw Score	Number	Mean Raw Score	Number	Mean Raw Score
Adams	21	36.52	18	35.44	80	50.54	97	47.52
Alcott	8	36.00	20	37.05	82	53.26	97	54.15
Bryant	4	. .	5	28.00	40	53.45	37	56.14
Castle View	8	24.62	8	22.38	53	50.19	47	47.77
Harrison	. .	. .	6	22.33	. .	. .	89	45.63
Highland	5	26.40	10	22.30	101	46.23	116	45.66
Hyatt	8	29.38	7	22.00	54	54.50	66	48.00
Jackson	23	31.26	30	28.70	118	44.90	105	48.76
Jefferson	13	24.62	24	32.88	113	43.24	97	43.21
Liberty	9	28.22	11	28.09	72	45.57	76	43.78
Madison	18	37.33	8	29.38	67	56.21	65	56.74
Magnolia	9	43.67	19	28.79	86	48.00	104	40.55
Monroe	26	28.27	21	28.38	101	42.30	91	46.10
Pachappa	11	26.27	10	23.00	37	41.86	28	44.86
Palm	6	25.17	8	43.13	54	47.63	56	53.64
Victoria	18	37.00	16	41.19	63	57.89	46	57.59
Washington	11	29.18	17	23.88	67	41.12	73	43.52
Total	198	31.79	238	30.19	1188	47.96	1290	47.70

TABLE 9

MEAN RAW SCORES, STANFORD ACHIEVEMENT TESTS, TOTAL READING
GRADE THREE, MAY 1969 AND MAY 1970

School	Bused Pupils				Receiving Pupils			
	May 1969		May 1970		May 1969		May 1970	
	Number	Mean Raw Score	Number	Mean Raw Score	Number	Mean Raw Score	Number	Mean Raw Score
Adams	16	45.12	22	44.96	107	62.87	78	64.76
Alcott	17	57.71	10	47.00	88	74.51	84	72.95
Bryant	6	38.83	5	39.60	44	58.75	38	63.71
Castle View	12	50.75	3	. .	54	69.35	60	76.02
Harrison	. .	. .	20	28.50	. .	. .	106	60.43
Highland	11	48.55	8	40.13	95	70.94	104	64.96
Hyatt	7	53.12	9	40.67	50	72.38	46	71.54
Jackson	19	46.32	25	47.08	91	61.88	104	61.76
Jefferson	22	46.00	15	48.73	109	65.89	117	66.53
Liberty	11	40.55	6	35.17	70	56.46	69	63.83
Madison	9	54.00	15	41.80	67	65.45	57	62.88
Magnolia	20	43.05	13	57.54	64	64.45	83	69.57
Monroe	19	36.53	22	44.23	97	61.38	101	66.90
Pachappa	15	36.80	7	46.29	46	64.35	40	64.75
Palm	6	41.67	3	. .	46	65.65	46	69.41
Victoria	19	40.37	17	56.18	73	67.52	50	70.84
Washington	12	53.33	11	48.46	79	68.58	89	59.13
Total	221	45.43	211	44.96	1180	65.70	1272	65.98

TABLE 10

ACHIEVEMENT OF BUSED PUPILS IN CLASSES WITH HIGH AND LOW PERCENTAGES OF PUPILS WHOSE FATHERS' OCCUPATIONS ARE PROFESSIONAL OR MANAGERIAL

Grade	Socioeconomic Status of Receiving Pupils	
	High	Low
Kindergarten		
Number of Bused Pupils	53	73
Mean	44.62	46.60
Standard Deviation	13.84	15.53
t		0.7466
p (One-tailed)		N.S.
Grade One		
Number of Bused Pupils	57	92
Mean	19.54	19.26
Standard Deviation	5.36	6.17
t		0.2901
p (One-tailed)		N.S.
Grade Two		
Number of Bused Pupils	62	93
Mean	27.47	30.40
Standard Deviation	15.83	14.07
t		1.1711
p (One-tailed)		N.S.
Grade Three		
Number of Bused Pupils	47	43
Mean	47.66	43.53
Standard Deviation	17.50	18.70
t		1.0669
p (One-tailed)		N.S.

TABLE 11
 ACHIEVEMENT OF BUSED PUPILS IN CLASSES WITH
 HIGH- AND LOW-ACHIEVING RECEIVING PUPILS

Grade	Achievement of Receiving Pupils	
	High	Low
Kindergarten		
Number of Bused Pupils	59	53
Mean	50.20	45.47
Standard Deviation	14.45	13.09
t	1.8014	
p (One-tailed)	<.05	
Grade One		
Number of Bused Pupils	77	61
Mean	21.77	17.82
Standard Deviation	6.97	6.47
t	3.4166	
p (One-tailed)	<.0005	
Grade Two		
Number of Bused Pupils	57	81
Mean	37.19	28.16
Standard Deviation	16.04	13.15
t	3.4742	
p (One-tailed)	<.0005	
Grade Three		
Number of Bused Pupils	52	76
Mean	51.29	40.86
Standard Deviation	17.26	21.84
t	2.9861	
p (One-tailed)	<.005	

TABLE 12
 RAW SCORE PERCENTILE POINTS, ACHIEVEMENT TEST SCORES, SEGREGATED PUPILS
 IN 1966 AND DESEGREGATED BUSED PUPILS IN 1969 AND 1970

Percentile Rank	Kindergarten			Grade Two			Grade Three		
	1965-66	1968-69	1969-70	1965-66	1968-69	1969-70	1965-66	1968-69	1969-70
	10	23-24	27	27	19-20	15	14	28	24	19
25	32	32	37	23-24	20	19	37	32	29
50	42	43	46	31-32	28	26	48	45	45
75	50	55	56	37-38	41	40	59	58	61
90	53-54	64	66	47-48	54	51	69	65	72

Note: First grade data were not included because a different test was administered in 1969-1970 than previously.