

An Analysis of Black Student Achievement  
in USD 501 Topeka, Kansas: 1980-1986

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AN ANALYSIS OF BLACK STUDENT ACHIEVEMENT  
IN USD 501, TOPEKA, KANSAS: 1980-1986

This report presents findings from a series of analyses examining the achievement of Black students in USD 501, Topeka, Kansas for the school years: 1979-80, 1981-82, 1982-83, 1984-85 and 1985-86. The inspection of achievement was undertaken to be informative to the Brown litigation. In planning and conducting the investigation, the goal was to evaluate Black student achievement and to explore factors associated with achievement. Based on the results of the analyses conducted, the following conclusions are drawn relative to the achievement status of students in USD 501 for the years examined.

1. The racial composition of school buildings as a primary factor is not related systematically to the level of achievement outcomes in either Reading or Mathematics.
2. Systematic differences between Black and White students in reading proficiency levels were not evidenced at any of the grade levels examined.
3. Systematic differences in Mathematics proficiency levels between Black and White students were not evidenced at four of five grade levels examined, the exception being for students at the Senior High School level (grades 10 and 11).
4. There was no evidence that differential proficiency levels existed in reading or mathematics between Black and White students linked to attendance in a school with a specific racial composition.
5. The proficiency level of Black or White students is not advantaged when a student moves from one school building environment to another having a different racial composition.
6. Many factors were identified that are clearly more important in accounting for the level of achievement outcomes than race or the racial composition of the school building attended.

The analysis of factors related to educational achievement of students in USD 501 schools clearly demonstrated that racial composition of the school building had an insignificant effect on student learning. However, many characteristics such as aspirations and expectations, amount of reading, confidence in one's self, parental support, and home background factors were found to be instrumental to student achievement.

The remainder of this report presents and discusses the characteristics studied and their source, the procedures for data analysis, and then proceeds to present the findings that serve as the basis for the conclusions.

#### 1. Characteristics and Variables Examined

Information used for the analyses presented in this report was obtained from: (a) district records for each of the years examined, (b) student personal information folders, (c) State of Kansas KMCT archive computer tapes for the years 1980, 1982, 1983, 1985 and 1986, and (d) student responses to a survey administered in April/May, 1986. The variables drawn from these sources included indicators of: (1) student achievement, ability, race, school attended, mobility, home income level, and perceptions and characteristics of self, the home and school environment; and, (2) attendance center minority/majority enrollment, i.e., building mixture of racial and cultural composition. Each of these variables is discussed below.

Student Achievement. As measures of student achievement outcomes resulting from schooling practices, scores on the Kansas Minimum Competency Tests (KMCT) were secured. These tests evaluate student achievement in two content areas: Reading and Mathematics, and were administered in USD 501 under Kansas legislative mandate during the Spring of 1980, 1982, 1983, 1985 and 1986. For the 1980, 1982 and 1983 administrations, students in accredited Kansas schools at grades 2, 4, 6, 8 and 11 were tested. Enacting legislation for the years 1985 and 1986 continued the mandate for testing at grades 2, 4, 6 and 8, but required the testing of grade 10 students rather than students at grade 11.

The KMCT's are developed at the Center for Educational Testing and Evaluation, University of Kansas under contract with the Kansas State Department of Education. New tests are constructed annually for each administration, but the same skills are assessed each year for a specific grade level and content area. The skills tested were determined by the State Board of Education based on the recommendations of a 26 member State Assessment Advising Committee.

The tests are designed and developed as criterion-referenced measures. That is, the purpose of each examination is to provide a determination regarding student mastery in each domain (Reading and Mathematics) defined by the skills tested. A performance standard (passing score) is established for an examination by the State of Kansas. Students scoring at or above the test performance standard are judged to have demonstrated mastery of

the domain, those who score below the test performance standard are classified as not having achieved minimum proficiency in the domain.

The key indicator on tests designed as the KMCT is the classification decision made as a function of the performance level on the test (e.g., pass-fail, master-nonmaster, competent-not competent). Scoring 5 points above the standard provides the same information as scoring one point above the standard; scoring 10 points below the standard has the same consequences as being one point below the standard. As such, the indicator analyzed in this investigation was the decision: did the student meet the proficiency standard, or did the student not achieve the test performance standard.

Table 1.1 indicates by year and grade the KMCT test information assembled and used in various analyses presented in this report.

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Table 1.1: Years and grades for which data was available for analysis

| Grade | Year        |             |             |             |             |
|-------|-------------|-------------|-------------|-------------|-------------|
|       | <u>1980</u> | <u>1982</u> | <u>1983</u> | <u>1985</u> | <u>1986</u> |
| 2     | X           | X           | X           |             |             |
| 4     | X           | X           | X           | X           |             |
| 6     | X           | X           | X           | X           | X           |
| 8     | X           | X           | X           | X           | X           |
| 10    |             |             |             | X           | X           |
| 11    |             |             | X           |             |             |

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Race. The ethnic group of a student was identified based on information provided by the individual, or by his/her parent or guardian.

Building Mixture. The analyses were planned to evaluate student achievement. The major comparison considered achievement across attendance centers. Given the small sample sizes and incomplete data records, it was not possible to statistically compare achievement among the unique buildings except at the high school level. At the elementary and middle school levels, a "building mixture" classification index was fashioned according to the racial compositions of specific school buildings. Grouping attendance centers in this manner allowed for comparisons of achievement outcomes across attendance centers. The classification system was as follows:

| <u>Category</u>    | <u>Characteristic</u>                                                                                                             |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Building Mixture 1 | Attendance centers at which approximately 40 percent or more of the students attending were minority group members.               |
| Building Mixture 2 | Attendance centers at which approximately 10 to 40 percent of the students attending were minority group members.                 |
| Building Mixture 3 | Attendance centers at which approximately 10 percent or less of the students attending were identified as minority group members. |

As noted, this classification system was not utilized for high school comparisons. Rather, the three USD 501 high schools were

treated as separate entities. Classification of attendance centers into each mixture category was done uniquely for each year that achievement data were analyzed. That is, from one year to the next, an attendance center could change category. The categories were established to conform to plaintiff's contention of "racially identifiable" schools. Appendix A provides a listing of each attendance center's Building Mixture classification for each year achievement data were analyzed.

Ability. The analyses conducted utilized a measure of the student's ability to allow comparison of performance across statistically comparable groups. The measures of ability used were scores on the Cognitive Abilities Test (CAT). The CAT provides a measure of the student's Verbal Ability, Quantitative Ability and Non-verbal Ability. Student scores on the CAT were taken from the score reports in each student's Permanent Record File. These data were merged with the KMCT performance scores and the other data utilized in this investigation.

Income Level. Income level of the home was used, as was the measure of ability, to permit comparison of student achievement across comparable groups. The index of income level was the designation if the student was enrolled in a free or reduced lunch program at school. Information was secured from district records.

School Attended. The majority of analyses conducted required that students be linked to their attendance center. This information was available from the KMCT data base as well as

district records.

Attitudes and Demographics. The decision to evaluate student achievement in 1980, 1982, 1983 and 1985 for this report was made well after the fact of actual testing. The range of variables available for examination in concert with achievement was therefore limited. Important data available (i.e., race, mobility, income level, and ability) were secured and merged with the student achievement records.

In planning these studies it was decided that, concurrent with the 1986 KMCT testing, additional data that could be useful toward understanding student achievement would be secured. To this end, a student questionnaire was developed and administered to USD 501 students at grades 6, 8, and 10. Instruments used in major national research projects (e.g. the Coleman report, and High School and Beyond) served as the basis for development of the questionnaire. A copy of the questionnaire is included in Appendix B. The perceptions, feelings, values and information sought in the questionnaire reflected those characteristics which research has shown to be related to student achievement. For the analyses planned, these data were gathered to explore what factors could be expected to account for achievement performance level differences.

Mobility. One series of analyses evaluated student achievement in consideration of the student changing his/her attendance center within USD 501. Student mobility data were available from district records. A classification scheme that reflected a student's change in attendance center was developed.



The classification scheme tracked a student over a specific two year cycle (1980 to 1982, 1983 to 1985) between grade levels (from grade 2 to 4, 4 to 6, or 6 to 8) at which KMCT achievement testing occurred. Category classification of students were as follows:

| <u>Category</u> | <u>Description</u>                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mobility 1      | Included students who, during a two year period, moved from an attendance center identified in the Building Mixture 1 category to either an attendance center in the Building Mixture 2 or Building Mixture 3 category. Also included are students who moved from an attendance center in the Building Mixture 2 category to an attendance center in the Building Mixture 3 category.                                                                    |
| Mobility 2      | Included students who, during a two year period, did not change attendance center or transferred to an attendance center in the same Building Mixture category.                                                                                                                                                                                                                                                                                          |
| Mobility 3      | This category reflects change of attendance center in the opposite direction of the Mobility 1 category. It included students who, over a two year period, were initially enrolled in a Building Mixture 3 school and then subsequently enrolled in either a Building Mixture 2 or 1 category school. Also included are students who were initially enrolled in a Building Mixture 2 school and then enrolled in a Building Mixture 1 attendance center. |

Information from the district records that would allow classification of students into mobility categories was merged with the student performance data.

## 2. Methods and Procedures

This section discusses the data that were assembled for analysis (sampling) and the methods of statistical treatment of the data (analyses). The basic research design used to address the question of focus in this investigation was a configuration that examined achievement performance comparatively: for different building mixtures, for blacks and whites, and, the performance profile of students of a given race in a particular building mixture category. This research plan was implemented evaluating separately performance on the Reading and Mathematics KMCT tests at grades and for those years in which the tests were administered. Table 1.1 previously identified (see page 4), by grade and point in time (year), data that were available and analyzed under the basic design framework.

Sampling. Students involved in the analyses were at the time of KMCT testing enrolled in USD 501. The only students in the district systematically excluded from analyses were individuals identified in special education handicapped categories (e.g., mentally retarded, learning disabled, emotionally conflicted, visually impaired). For all other students, a student would enter the particular analysis dependent only on the completeness of the data available for the individual. Thus, if a child's race was not known, that student was effectively eliminated from analyses requiring knowledge of the person's race; or, if the CAT ability scores were unavailable for a student, that student was not involved in analyses requiring information on ability.

We are unaware of any factors that would have led to the systematic exclusion of any group of individuals from the analyses completed. Table 2.1 identifies the number of students with data available for each analysis and the estimated proportion of the district's grade level enrollment represented by the data.

Table 2.1 Number of Black and White students with available data for each grade by year analysis

| <u>Grade</u> | <u>Race</u> | <u>1980</u> | <u>1982</u> | <u>1983</u> | <u>1985</u> | <u>1986</u> |
|--------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 2            | Black       | 92 (50%)*   | 116 (54%)   | 129 (61%)   | --          | --          |
|              | White       | 539 (57%)*  | 466 (52%)   | 497 (58%)   | --          | --          |
| 4            | Black       | 102 (55%)   | 101 (47%)   | 101 (48%)   | 118 (57%)   | --          |
|              | White       | 477 (51%)   | 432 (49%)   | 519 (60%)   | 486 (57%)   | --          |
| 6            | Black       | 81 (44%)    | 124 (57%)   | 101 (48%)   | 96 (46%)    | 164 (95%)   |
|              | White       | 406 (43%)   | 528 (59%)   | 604 (70%)   | 526 (62%)   | 696 (96%)   |
| 8            | Black       | 118 (53%)   | 89 (42%)    | 95 (44%)    | 119 (59%)   | 173 (100%)  |
|              | White       | 508 (53%)   | 459 (52%)   | 519 (58%)   | 606 (73%)   | 646 (99%)   |
| 10/11        | Black       | --          | --          | 128 (64%)   | 101 (53%)   | 162 (84%)   |
|              | White       | --          | --          | 531 (64%)   | 514 (64%)   | 681 (91%)   |

\* Estimated percent of Black or White enrollment for which data were available for analysis.

Data Analysis. For all analyses, the outcome or dependent variable was student standing in relation to the KMCT proficiency standard. The mean (average) performance level reported for any group configuration (e.g., Blacks on the grade 2 Reading test in 1982) is the proportion or percent of the group evaluated as having mastered the content domain of the test.

Two primary methods for the statistical treatment of data were used: factorial analysis of covariance (ANCOVA) and multiple correlation. These methods permitted direct evaluation of the following research questions while controlling the effects of the ability and income level of the student:

1. As measured by the KMCT Reading or Mathematics tests, are there differences in the proficiency rates for USD 501 students across attendance centers categorized by their racial composition (Building Mixture main effect)?
2. Is there a difference in the proficiency rates between USD 501 Black and White students (Race main effect)?
3. Does the rate of proficiency differ as a function of the student's race and the School building attended (Race by Building Mixture interaction effect)?
4. What important student, home or school factors are there that account for the proficiency levels of USD 501 students?

Question 1 through 3 were evaluated employing a two factor (Building Mixture and Race) ANCOVA design. This design provided for statistical significance tests on mean performance differences among students grouped by:

- a) the racial composition of the school building attended (Question 1, the Building Mixture main effect),
- b) the racial designation of the student, Black or White (Question 2, the Race main effect), or
- c) the unique combination of racial composition of the school attended and the race of the student (Question 3, the Race by Building Mixture interaction effect).

In all analyses addressing differences among groups of students, achievement performance levels were adjusted using the measures of ability and income level (except for 1986 analyses where only ability was controlled). This adjustment of achievement scores in comparative studies is common practice and justifiable given the evidence in the research literature supporting ability and income level as significant factors in accounting for the level of achievement outcomes. The ANCOVA main effect and interaction hypotheses were tested using both the KMCT Reading and Mathematics performance data as the achievement outcome indicators. These analyses were reported for each year (1980, 1982, 1983, 1985 and 1986) test result information was available.

After testing hypotheses addressing Questions 1-3, multiple correlation procedures were employed to address Question 4. Questionnaire data were used along with student achievement indicators and ability data to determine those factors that are important in accounting for the observed proficiency rates of USD 501 students in Reading and Mathematics.

In addition to the four identified research questions addressed, data were available to examine the proficiency rates between Black and White students in USD 501 who had transferred across attendance centers in the district. Analysis of covariance methods were used to adjust for prior learning (previous standing on the KMCT and ability), then evaluating the proficiency classification of students at the next testing period given the student's mobility classification.

All statistical applications addressing the various research questions were evaluated using a five (5) percent probability decision rule. That is, a statistically significant difference in proficiency rate was determined when the magnitude of the difference in performance exceeded that expected to occur by chance alone less than 5 times in 100 (1 chance in 20 of finding a difference due to chance.)

In the next section, results of the investigation are reported.

### 3. Findings

#### Building Mixture by Race, Proficiency Differences (Adjusted for Ability and Income Level)

Results from analyses addressing Research Questions 1-3 are reported in this section. Building Mixture and Race main effects and Building Mixture by Race interaction effect hypotheses were tested using an analysis of covariance design. Verbal, quantitative and non-verbal scale scores from the Cognitive Abilities Test battery were used as covariates in the analysis along with identification of whether a student received a free or reduced lunch. Ability scores used in any one analysis were always taken from the same year's KMCT testing or from the most recent prior testing year. The free lunch information as an indicator of income level was taken from the same year as the achievement test data. The covariance design tests for differences in mean proficiency (achievement) levels after the group achievement means have been adjusted upwards or downwards as a function of a group's measured levels on the covariates.

Of primary importance is the test of the interaction hypothesis (BxR). A non-significant interaction hypothesis indicates that proficiency differences across Building Mixture categories follow the same pattern for Blacks and Whites. Only if there is a statistically significant interaction effect is there sufficient evidence that Black and White proficiency levels are differentially affected by the Building Mixture configuration in which they were located. When there is observed a statistically significant interaction effect, pattern of performance across Building Mixture categories for Blacks and Whites should be compared.

The unadjusted and adjusted means for the analyses are given in Tables 3.4 - 3.8. The unadjusted means identify proficiency rates where ability, socio-economic status or other factors that might account for achievement have not been considered in the analysis. The adjusted means estimate the performance levels expected after adjustments for students' ability and income levels have been taken into account. The sample sizes for each analysis are given in Table 3.3. The pattern of differences among adjusted means should be used to interpret the statistically significant results in Tables 3.1 and 3.2.

The different combinations of grade level, year and content area resulted in 40 separate sets of analyses being conducted. The results of the 40 covariance analyses are presented in Tables 3.1 and 3.2 for Reading and Mathematics, respectively. Examining the tests of the interaction (BxR) effects, non-significant results dominate, occurring in 37 of the 40 analyses.

For the three statistically significant interaction effects, there is no trend or pattern that identifies which building mixture and racial group consistently has the higher or lower performance level. The pattern of performance is best characterized as very uneven and inconsistent. These results indicate that there is no supporting evidence for the contention that the differential proficiency rates observed in Reading and Mathematics are a function of the unique combination of the racial composition of the school building attended and the race of the student.

Given the lack of statistically significant interaction effects, the Building Mixture and Race main effects should be examined. No systematic patterns of statistically significant Building Mixture differences existed in Reading. Only in Mathematics for the Grade 4 and Grade 8 analyses do systematic patterns of statistically significant Building Mixture differences appear. For tests of the Race main effects, no consistent pattern for a grade level or within a year exist with the exception of Grade 11 and 10 results in Mathematics. The patterns of performance differences for both main effects are explored in the following paragraphs.

When the Building Mixture main effect means are examined, different patterns emerge across grade levels. For example, the patterns for Mathematics proficiency within Grade 4 and within Grade 8 are each consistent across years but are different from each other. The Grade 8 pattern has students in Building Mixture categories 1 and 3 always performing at a higher level than those



in Building Mixture group 2. For the latter analyses, Black and White students in school buildings with higher minority or majority racial compositions perform at a higher level than those in buildings where the racial composition is in the middle range. For Race main effect proficiency differences, the adjustment always narrows the performance differences between Blacks and Whites. When statistically significant differences are observed, however, the adjusted mean proficiency level for Blacks is lower.

#### Multiple Correlation Analyses for Significant Effects

The ANCOVA analyses reported demonstrate that ability and income level are two factors important in accounting for the observed proficiency rates of USD 501 students in Reading and Mathematics when evaluating the effects of race and the racial composition of the school building attended. While ability and income level are identified in the research literature as major factors relating to achievement levels, other important factors also exist.

To explore other important correlates that additionally could account for differences in proficiency levels of USD 501 students, the student 1986 questionnaire responses were utilized. This device (see Appendix B) questioned students regarding their attitudes and feelings toward self and school, and sought information regarding home characteristics and conditions. These variables have been shown to be related to academic performance.

Tables 3.9 through 3.11 report the simple bivariate correlations between KMCT proficiency classification in Reading and Mathematics and student responses to questionnaire items for

grades 6, 8 and 10, respectively. Where necessary, the response scale codes to questionnaire items were reversed so that positive/desirable responses always received the higher numerical scale value. This reverse scaling for some items provides consistency in the expected direction of all relationships, i.e., the correlation coefficients should be positive. Reported in the tables are the correlations for combined Black and White students, the correlations for Black students alone, for White students alone, and the correlations within each Building Mixture configuration.

A review of these correlations shows levels of relationship that are consistent with and confirm prior research in this area. While none of the correlations are exceptionally high, there does emerge a consistent trend for these factors to evidence a relationship to achievement.

To examine the relationship of the questionnaire item factors to achievement including the factors of ability, race and the racial composition of buildings, multiple correlation analyses were conducted. First, partial correlation analyses were used to reduce the 58 questionnaire items to those variables that would contribute potentially important variance in the multiple correlation analyses. These multiple correlation analyses were completed by first entering the CAT measures of ability to determine the relationship between ability and proficiency. Next, selected questionnaire items were entered into the relation. Then, the building mixture and race information was added to the relation. Finally, the building mixture and race interaction information was blended into the

relation. Dummy coding was used for nominal variables (i.e., building mixture and interaction components). Multiple correlation analyses were conducted separately for each of the grade levels, 6, 8 and 10, for Reading and Mathematics proficiency scores.

Results of the multiple correlation analyses are reported in Tables 3.12 (Reading) and 3.13 (Mathematics). A review of these tables confirms that ability accounts for a sizable proportion of proficiency rate variability, ranging from a high of 33% in the Grade 6 Reading analysis to a low of 16% in the Grade 8 Reading analysis. The questionnaire items accounted for a statistically significant amount of variability in all analyses except Grade 6 Reading.

It should be noted that no Building Mixture by Race effect accounts for a statistically significant proportion of unique variance in proficiency rates and the Building Mixture main effect is statistically significant in only one of the six analyses. These latter results provide evidence that other factors are more important than the racial composition of the school building attended in accounting for the proficiency rate differences.

While the statistically significant ANCOVA Race effect was not eliminated in grade 10 Reading or Mathematics, Race accounted only for approximately 1 to 1.5 percent of the variability in performance when the effects of ability and student survey information were utilized to understand proficiency level difference between students. Ability accounted for approximately

25 percent in Reading and 31 percent in Mathematics, and student, school and home factors explained 13 and 9 percent of the variability in Reading and Mathematics proficiency, respectively. In the other four analyses, there were no statistically significant Race differences.

The number of home, school, and self characteristics found to be integrally associated with student achievement is reported in Tables 3.12 and 3.13 for Reading and Mathematics, respectively. Among those factors observed to be critically linked to learning in USD 501 regardless of the building mixture, race, grade level or subject matter investigated were: frequency that the student reads, educational level of the parents, parental expectations and support, confidence in one's ability to learn and succeed, student study and work habits, school climate and teacher behavior, and student self-concept. The results of these analyses indicate that there are factors more important to understanding achievement differences than the racial composition of the school building and race.

#### Race by Mobility Analyses

Table 3.14 summarizes the results of the Race by Mobility analyses when controlling for prior achievement and ability. As in previous analyses, there is no systematic statistically significant interaction (RxM) effects. These results indicate that transfer from one building mixture site to another has no differential effect on the performance level of Blacks or Whites. The sample sizes, unadjusted and adjusted mean performance levels on which the analysis results were based are given in Table 3.15.

#### 4. Conclusions

Based on the results of a comprehensive set of analyses across several years and grade levels, there was no systematic evidence that proficiency levels in reading or mathematics are linked to attendance in a school with a specific racial mixture. The consistent lack of statistically significant Building Mixture by Race mean differences indicate that the pattern of performance differences, if existing, across Building Mixture configurations were not sufficiently different between Blacks and Whites. When Building Mixture effects were statistically significant, the patterns in mean proficiency differences varied across analyses. No one Building Mixture group consistently had the highest nor the lowest mean performance level. Therefore, the evidence reviewed regarding Topeka Public Schools supports the conclusion that the racial composition of the school building has no effect on the proficiency rate observed.

Statistically significant differences remained between Black and White mean proficiency levels in some analyses when the data were combined over Building Mixture groups. Controlling for measured ability narrowed the difference in every analysis, however. No systematic pattern of statistically significant Race performance differences across years within grade levels 2, 4, 6, or 8 or across grade levels within a specific year existed. Only at the Senior High School level (Grades 10 and 11 analyses) was there evidence of a systematic Race difference in performance levels. Inclusion of student and school characteristics information from the 1986 questionnaire was unable to account

entirely for 1986 Grade 10 Black/White proficiency level differences in either Reading or Mathematics. The Race differences remaining, however, accounted for less than 1.5 percent of proficiency rate differences among students.

The Mobility by Race analyses followed similar patterns. No proficiency level differences were observed to be statistically significant between Black and White students. The lack of statistically significant Mobility by Race interaction effects supports the conclusion that Reading and Mathematics mean proficiency levels are not advantaged when a student moves from one building mixture environment to another whether they are Black or White students.

Of particular importance was the finding that educational achievement of students in USD 501 schools clearly demonstrated that racial composition had an insignificant effect on student learning. Among the educationally relevant factors observed to be more important and critically linked to learning regardless of building mixture, race, grade level or subject matter were: frequency that the student reads, educational level of the parents, parental expectations and support, confidence in one's ability to learn and succeed, student study and work habits, schools climate and teacher behavior, and student self-concept.

In summary, the following conclusions are drawn based on the results from the analyses conducted.

1. The racial composition of school buildings as a primary factor is not related systematically to the level of achievement outcomes in either Reading or Mathematics.
2. Systematic differences between Black and White students in reading proficiency levels were not evidenced at any of the grade levels examined.
3. Systematic differences in Mathematics proficiency levels between Black and White students were not evidenced at four of five grade levels examined, the exception being for students at the Senior High School level (grades 10 and 11).
4. There was no evidence that differential proficiency levels existed in reading or mathematics between Black and White students linked to attendance in a school with a specific racial composition.
5. The proficiency level of Black or White students is not advantaged when a student moves from one school building environment to another having a different racial composition.
6. Many factors were identified that are clearly more important in accounting for the level of achievement outcomes than race or the racial composition of the school building attended.

Table 3.1: Reading significance test results for the adjusted effects of Race, Building Mixture, and the Race by Building Mixture interaction across years with aptitude and income level controlled.

|              |               | <u>Reading</u> |             |             |             |              |
|--------------|---------------|----------------|-------------|-------------|-------------|--------------|
| <u>Grade</u> | <u>Effect</u> | <u>1980</u>    | <u>1982</u> | <u>1983</u> | <u>1985</u> | <u>1986+</u> |
| 2            | Race          | *              | NS          | *           |             |              |
|              | Bldg          | NS             | *           | NS          |             |              |
|              | RxB           | NS             | NS          | NS          |             |              |
| 4            | Race          | *              | NS          | NS          | NS          |              |
|              | Bldg          | NS             | NS          | *           | *           |              |
|              | RxB           | NS             | NS          | NS          | NS          |              |
| 6            | Race          | NS             | NS          | NS          | NS          | NS           |
|              | Bldg          | NS             | NS          | NS          | *           | NS           |
|              | RxB           | NS             | NS          | NS          | NS          | NS           |
| 8            | Race          | NS             | *           | NS          | NS          | NS           |
|              | Bldg          | NS             | NS          | NS          | NS          | NS           |
|              | RxB           | NS             | *           | NS          | NS          | NS           |
| 10           | Race          |                |             |             | NS          | *            |
|              | Bldg          |                |             |             | *           | NS           |
|              | RxB           |                |             |             | NS          | NS           |
| 11           | Race          |                |             | NS          |             |              |
|              | Bldg          |                |             | NS          |             |              |
|              | RxB           |                |             | NS          |             |              |

\* Effect is statistically significant at the .05 level

NS Effect is not statistically significant at the .05 level

+ 1986 Achievement was adjusted by ability scores only



Table 3.2: Mathematics significance test results for the adjusted effects of Race, Building Mixture, and the Race by Building Mixture interaction across years with aptitude and income level controlled.

|              |               | <u>Mathematics</u> |             |             |             |              |
|--------------|---------------|--------------------|-------------|-------------|-------------|--------------|
|              |               | <u>1980</u>        | <u>1982</u> | <u>1983</u> | <u>1985</u> | <u>1986+</u> |
| <u>Grade</u> | <u>Effect</u> |                    |             |             |             |              |
| 2            | Race          | *                  | NS          | *           |             |              |
|              | Bldg          | NS                 | NS          | NS          |             |              |
|              | RxB           | NS                 | NS          | NS          |             |              |
| 4            | Race          | NS                 | NS          | NS          | NS          |              |
|              | Bldg          | NS                 | *           | *           | *           |              |
|              | RxB           | NS                 | *           | NS          | NS          |              |
| 6            | Race          | *                  | NS          | NS          | NS          | *            |
|              | Bldg          | NS                 | NS          | NS          | NS          | NS           |
|              | RxB           | NS                 | NS          | NS          | NS          | *            |
| 8            | Race          | *                  | *           | NS          | NS          | NS           |
|              | Bldg          | NS                 | *           | *           | *           | *            |
|              | RxB           | NS                 | NS          | *           | NS          | NS           |
| 10           | Race          |                    |             |             | *           | *            |
|              | Bldg          |                    |             |             | NS          | NS           |
|              | RxB           |                    |             |             | NS          | NS           |
| 11           | Race          |                    |             | *           |             |              |
|              | Bldg          |                    |             | NS          |             |              |
|              | RxB           |                    |             | NS          |             |              |

\* Effect is statistically significant at the .05 level

NS Effect is not statistically significant at the .05 level

+ 1986 Achievement was adjusted by ability scores only

Table 3.3: Sample sizes for the Race, Building Mixture and Race by Building Mixture Analyses

|      |   | Grade 2          |     |     |                  |     |     |          |     |     |                  |     |     |                  |     |     |
|------|---|------------------|-----|-----|------------------|-----|-----|----------|-----|-----|------------------|-----|-----|------------------|-----|-----|
|      |   | 1980             |     |     | 1982             |     |     | 1983     |     |     | 1985             |     |     | 1986             |     |     |
|      |   | BL               | WH  | TOT | BL               | WH  | TOT | BL       | WH  | TOT |                  |     |     |                  |     |     |
| Bldg | 1 | 33               | 27  | 60  | 53               | 32  | 85  | 62       | 50  | 112 | No Data Analyzed |     |     | No Data Analyzed |     |     |
|      | 2 | 34               | 98  | 132 | 43               | 172 | 215 | 37       | 200 | 237 |                  |     |     |                  |     |     |
|      | 3 | 10               | 215 | 225 | 7                | 229 | 236 | 2        | 191 | 193 |                  |     |     |                  |     |     |
| TOT  |   | 77               | 340 |     | 103              | 433 |     | 101      | 441 |     |                  |     |     |                  |     |     |
|      |   | Grade 4          |     |     |                  |     |     |          |     |     |                  |     |     |                  |     |     |
|      |   | 1980             |     |     | 1982             |     |     | 1983     |     |     | 1985             |     |     | 1986             |     |     |
|      |   | BL               | WH  | TOT | BL               | WH  | TOT | BL       | WH  | TOT | BL               | WH  | TOT |                  |     |     |
| Bldg | 1 | 29               | 23  | 52  | 36               | 28  | 64  | 49       | 65  | 114 | 56               | 47  | 103 | No Data Analyzed |     |     |
|      | 2 | 19               | 98  | 117 | 37               | 143 | 180 | 25       | 173 | 198 | 34               | 179 | 213 |                  |     |     |
|      | 3 | 8                | 256 | 264 | 11               | 210 | 221 | 5        | 199 | 204 | 5                | 204 | 209 |                  |     |     |
| TOT  |   | 56               | 377 |     | 84               | 381 |     | 79       | 437 |     | 95               | 430 |     |                  |     |     |
|      |   | Grade 6          |     |     |                  |     |     |          |     |     |                  |     |     |                  |     |     |
|      |   | 1980             |     |     | 1982             |     |     | 1983     |     |     | 1985             |     |     | 1986             |     |     |
|      |   | BL               | WH  | TOT | BL               | WH  | TOT | BL       | WH  | TOT | BL               | WH  | TOT | BL               | WH  | TOT |
| Bldg | 1 | 36               | 24  | 60  | 26               | 13  | 39  | 41       | 59  | 100 | 45               | 76  | 121 | 63               | 66  | 129 |
|      | 2 | 22               | 86  | 108 | 29               | 172 | 201 | 36       | 238 | 274 | 26               | 165 | 191 | 50               | 249 | 299 |
|      | 3 | 10               | 241 | 251 | 7                | 208 | 215 | 3        | 220 | 223 | 6                | 200 | 206 | 9                | 249 | 258 |
| TOT  |   | 68               | 351 |     | 62               | 393 |     | 80       | 517 |     | 77               | 441 |     | 122              | 564 |     |
|      |   | Grade 8          |     |     |                  |     |     |          |     |     |                  |     |     |                  |     |     |
|      |   | 1980             |     |     | 1982             |     |     | 1983     |     |     | 1985             |     |     | 1986             |     |     |
|      |   | BL               | WH  | TOT | BL               | WH  | TOT | BL       | WH  | TOT | BL               | WH  | TOT | BL               | WH  | TOT |
| Bldg | 1 | 34               | 24  | 58  | 30               | 53  | 83  | 33       | 63  | 96  | 53               | 91  | 144 | 68               | 70  | 138 |
|      | 2 | 28               | 114 | 142 | 36               | 162 | 198 | 34       | 127 | 161 | 35               | 258 | 293 | 43               | 265 | 308 |
|      | 3 | 9                | 229 | 238 | 6                | 151 | 157 | 10       | 251 | 261 | 3                | 171 | 174 | 7                | 173 | 180 |
| TOT  |   | 71               | 367 |     | 72               | 366 |     | 77       | 441 |     | 91               | 520 |     | 118              | 508 |     |
|      |   | Grade 11         |     |     |                  |     |     | Grade 10 |     |     |                  |     |     |                  |     |     |
|      |   | 1980             |     |     | 1982             |     |     | 1983     |     |     | 1985             |     |     | 1986             |     |     |
|      |   | BL               | WH  | TOT | BL               | WH  | TOT | BL       | WH  | TOT | BL               | WH  | TOT | BL               | WH  | TOT |
| Bldg | 1 | No Data Analyzed |     |     | No Data Analyzed |     |     | 50       | 103 | 153 | 53               | 110 | 163 | 56               | 120 | 176 |
|      | 2 |                  |     |     |                  |     |     | 18       | 82  | 100 | 23               | 131 | 154 | 43               | 166 | 209 |
|      | 3 |                  |     |     |                  |     |     | 6        | 179 | 185 | 7                | 203 | 210 | 9                | 245 | 254 |
| TOT  |   |                  |     |     |                  |     |     | 74       | 364 |     | 83               | 444 |     | 108              | 531 |     |

Table 3.4: Unadjusted and adjusted means for Grade 2 Race, Building Mixture and Race by Building Mixture effects.

| Reading Percent Passing: Grade 2     |               |            |            |              |             |             |              |              |             |                  |  |                  |  |
|--------------------------------------|---------------|------------|------------|--------------|-------------|-------------|--------------|--------------|-------------|------------------|--|------------------|--|
|                                      | 1980          |            |            | 1982         |             |             | 1983         |              |             | 1985             |  | 1986             |  |
|                                      | BL            | WH         | TOT        | BL           | WH          | TOT         | BL           | WH           | TOT         |                  |  |                  |  |
| Bldg 1                               | 76*<br>(70)** | 74<br>(67) | 76<br>(68) | 72<br>(51)   | 73<br>(66)  | 72<br>(56)  | 70<br>(53)   | 81<br>(80)   | 76<br>(65)  | No Data Analyzed |  | No Data Analyzed |  |
| 2                                    | 61<br>(47)    | 84<br>(82) | 73<br>(73) | 69<br>(58)   | 69<br>(67)  | 69<br>(65)  | 66<br>(59)   | 79<br>(80)   | 73<br>(76)  |                  |  |                  |  |
| 3                                    | 80<br>(70)    | 83<br>(89) | 82<br>(88) | 60<br>(57)   | 80<br>(90)  | 70<br>(89)  | 53<br>(50)   | 81<br>(87)   | 67<br>(87)  |                  |  |                  |  |
| Tot                                  | 72<br>(60)    | 80<br>(85) |            | 67<br>(54)   | 74<br>(79)  |             | 63<br>(55)   | 80<br>(83)   |             |                  |  |                  |  |
| Mathematics Percent Passing: Grade 2 |               |            |            |              |             |             |              |              |             |                  |  |                  |  |
|                                      | 1980          |            |            | 1982         |             |             | 1983         |              |             | 1985             |  | 1986             |  |
|                                      | BL            | WH         | TOT        | BL           | WH          | TOT         | BL           | WH           | TOT         |                  |  |                  |  |
| Bldg 1                               | 98<br>(97)    | 97<br>(96) | 98<br>(97) | 94<br>(91)   | 94<br>(94)  | 94<br>(92)  | 96<br>(95)   | 100<br>(100) | 98<br>(97)  | No Data Analyzed |  | No Data Analyzed |  |
| 2                                    | 87<br>(85)    | 96<br>(96) | 92<br>(91) | 100<br>(98)  | 94<br>(94)  | 97<br>(94)  | 90<br>(89)   | 98<br>(98)   | 94<br>(97)  |                  |  |                  |  |
| 3                                    | 92<br>(90)    | 98<br>(99) | 95<br>(95) | 100<br>(100) | 98<br>(100) | 99<br>(100) | 100<br>(100) | 99<br>(99)   | 100<br>(99) |                  |  |                  |  |
| Tot                                  | 93<br>(91)    | 97<br>(98) |            | 98<br>(94)   | 95<br>(97)  |             | 95<br>(93)   | 99<br>(99)   |             |                  |  |                  |  |

\*Adjusted mean percent passing  
 \*\*Unadjusted mean percent passing

Table 3.5: Unadjusted and adjusted means for Grade 4 Race, Building Mixture and Race by Building Mixture effects.

| Reading Percent Passing: Grade 4 |            |            |            |            |            |            |              |            |            |              |            |             |                  |  |
|----------------------------------|------------|------------|------------|------------|------------|------------|--------------|------------|------------|--------------|------------|-------------|------------------|--|
|                                  | 1980       |            |            | 1982       |            |            | 1983         |            |            | 1985         |            |             | 1986             |  |
|                                  | BL         | WH         | TOT        | BL         | WH         | TOT        | BL           | WH         | TOT        | BL           | WH         | TOT         |                  |  |
| Bldg 1                           | 77<br>(62) | 92<br>(91) | 85<br>(75) | 80<br>(72) | 85<br>(71) | 82<br>(72) | 63<br>(47)   | 68<br>(63) | 66<br>(59) | 84<br>(71)   | 89<br>(87) | 86<br>(79)  | No Data Analyzed |  |
| 2                                | 72<br>(58) | 88<br>(83) | 80<br>(78) | 76<br>(59) | 83<br>(82) | 80<br>(78) | 89<br>(80)   | 82<br>(82) | 85<br>(81) | 89<br>(82)   | 84<br>(84) | 86<br>(84)  |                  |  |
| 3                                | 89<br>(75) | 84<br>(89) | 87<br>(89) | 89<br>(82) | 88<br>(95) | 87<br>(95) | 100<br>(100) | 86<br>(92) | 93<br>(93) | 111<br>(100) | 92<br>(97) | 101<br>(97) |                  |  |
| Tot                              | 80<br>(63) | 88<br>(88) |            | 82<br>(68) | 85<br>(89) |            | 84<br>(61)   | 78<br>(84) |            | 95<br>(77)   | 88<br>(90) |             |                  |  |

| Mathematics Percent Passing: Grade 4 |            |            |            |             |            |            |              |            |            |            |            |            |                  |    |
|--------------------------------------|------------|------------|------------|-------------|------------|------------|--------------|------------|------------|------------|------------|------------|------------------|----|
|                                      | 1980       |            |            | 1982        |            |            | 1983         |            |            | 1985       |            |            | 1986             |    |
|                                      | BL         | WH         | TOT        | BL          | WH         | TOT        | BL           | WH         | TOT        | BL         | WH         | TOT        |                  |    |
| Bldg 1                               | 85<br>(66) | 76<br>(74) | 80<br>(70) | 57<br>(47)  | 66<br>(46) | 62<br>(47) | 67<br>(47)   | 71<br>(64) | 69<br>(60) | 63<br>(43) | 77<br>(74) | 70<br>(57) | No Data Analyzed |    |
| 2                                    | 63<br>(47) | 79<br>(72) | 77<br>(68) | 68<br>(43)  | 73<br>(72) | 71<br>(66) | 79<br>(64)   | 71<br>(71) | 75<br>(70) | 72<br>(82) | 71<br>(84) | 71<br>(84) |                  |    |
| 3                                    | 68<br>(50) | 77<br>(84) | 73<br>(83) | 100<br>(91) | 76<br>(86) | 88<br>(86) | 105<br>(100) | 81<br>(90) | 93<br>(90) | 95<br>(80) | 81<br>(89) | 88<br>(89) |                  |    |
| Tot                                  | 72<br>(57) | 77<br>(80) |            | 76<br>(51)  | 72<br>(78) |            | 84<br>(56)   | 74<br>(79) |            | 77<br>(52) | 76<br>(80) |            | 95               | 88 |

\*Adjusted mean percent passing  
 \*\*Unadjusted mean percent passing

Table 3.6: Unadjusted and adjusted means for Grade 6 Race, Building Mixture and Race by Building Mixture effects.

| Reading Percent Passing: Grade 6 |            |            |            |            |            |            |            |            |            |             |            |            |            |            |            |
|----------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|------------|------------|------------|------------|------------|
|                                  | 1980       |            |            | 1982       |            |            | 1983       |            |            | 1985        |            |            | 1986       |            |            |
|                                  | BL         | WH         | TOT        | BL         | WH         | TOT        | BL         | WH         | TOT        | BL          | WH         | TOT        | BL         | WH         | TOT        |
| Bldg 1                           | 61<br>(42) | 74<br>(79) | 67<br>(57) | 77<br>(54) | 74<br>(69) | 75<br>(59) | 69<br>(51) | 74<br>(69) | 72<br>(62) | 80<br>(53)  | 75<br>(71) | 78<br>(64) | 76<br>(59) | 82<br>(74) | 79<br>(67) |
| 2                                | 60<br>(45) | 75<br>(74) | 67<br>(69) | 74<br>(65) | 78<br>(74) | 76<br>(72) | 81<br>(67) | 73<br>(73) | 77<br>(72) | 74<br>(54)  | 68<br>(68) | 71<br>(66) | 73<br>(62) | 78<br>(76) | 75<br>(74) |
| 3                                | 75<br>(60) | 79<br>(83) | 77<br>(82) | 55<br>(57) | 75<br>(83) | 65<br>(82) | 87<br>(67) | 79<br>(86) | 83<br>(86) | 91<br>(100) | 78<br>(88) | 85<br>(88) | 66<br>(67) | 79<br>(88) | 72<br>(88) |
| Tot                              | 65<br>(46) | 75<br>(81) |            | 68<br>(55) | 75<br>(79) |            | 79<br>(59) | 75<br>(78) |            | 82<br>(57)  | 74<br>(78) |            | 72<br>(61) | 79<br>(82) |            |

| Mathematics Percent Passing: Grade 6 |            |            |            |            |            |            |            |            |            |             |            |            |            |            |            |
|--------------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|------------|------------|------------|------------|------------|
|                                      | 1980       |            |            | 1982       |            |            | 1983       |            |            | 1985        |            |            | 1986       |            |            |
|                                      | BL         | WH         | TOT        | BL         | WH         | TOT        | BL         | WH         | TOT        | BL          | WH         | TOT        | BL         | WH         | TOT        |
| Bldg 1                               | 68<br>(47) | 78<br>(83) | 73<br>(62) | 68<br>(42) | 53<br>(46) | 60<br>(44) | 88<br>(78) | 92<br>(88) | 90<br>(84) | 72<br>(56)  | 79<br>(76) | 76<br>(69) | 67<br>(52) | 87<br>(80) | 77<br>(67) |
| 2                                    | 51<br>(36) | 83<br>(84) | 67<br>(74) | 64<br>(45) | 74<br>(70) | 69<br>(67) | 92<br>(83) | 87<br>(87) | 90<br>(87) | 83<br>(69)  | 86<br>(85) | 84<br>(83) | 77<br>(68) | 76<br>(75) | 77<br>(74) |
| 3                                    | 67<br>(50) | 79<br>(84) | 73<br>(82) | 55<br>(57) | 78<br>(87) | 67<br>(86) | 76<br>(67) | 91<br>(95) | 84<br>(95) | 96<br>(100) | 85<br>(92) | 91<br>(92) | 66<br>(66) | 79<br>(88) | 72<br>(87) |
| Tot                                  | 62<br>(44) | 80<br>(84) |            | 62<br>(45) | 68<br>(78) |            | 85<br>(80) | 90<br>(91) |            | 84<br>(64)  | 83<br>(87) |            | 70<br>(60) | 81<br>(81) |            |

\*Adjusted mean percent passing

\*\*Unadjusted mean percent passing

Table 3.7: Unadjusted and adjusted means for Grade 8 Race, Building Mixture and Race by Building Mixture effects.

| Reading Percent Passing: Grade 8 |            |            |            |            |            |            |            |            |            |              |            |             |              |            |             |
|----------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|--------------|------------|-------------|--------------|------------|-------------|
|                                  | 1980       |            |            | 1982       |            |            | 1983       |            |            | 1985         |            |             | 1986         |            |             |
|                                  | BL         | WH         | TOT        | BL         | WH         | TOT        | BL         | WH         | TOT        | BL           | WH         | TOT         | BL           | WH         | TOT         |
| Bldg 1                           | 59<br>(32) | 68<br>(67) | 64<br>(47) | 88<br>(73) | 84<br>(81) | 86<br>(78) | 74<br>(58) | 89<br>(84) | 82<br>(75) | 84<br>(74)   | 87<br>(85) | 86<br>(81)  | 91<br>(84)   | 90<br>(86) | 91<br>(85)  |
| 2                                | 58<br>(29) | 60<br>(54) | 59<br>(49) | 67<br>(53) | 86<br>(90) | 76<br>(83) | 78<br>(65) | 88<br>(88) | 83<br>(83) | 87<br>(77)   | 85<br>(86) | 86<br>(85)  | 90<br>(84)   | 92<br>(94) | 91<br>(93)  |
| 3                                | 43<br>(22) | 56<br>(68) | 50<br>(66) | 54<br>(50) | 85<br>(89) | 70<br>(87) | 98<br>(90) | 87<br>(92) | 92<br>(92) | 111<br>(100) | 91<br>(97) | 101<br>(97) | 106<br>(100) | 93<br>(97) | 100<br>(97) |
| Tot                              | 53<br>(30) | 62<br>(63) |            | 70<br>(61) | 85<br>(88) |            | 83<br>(65) | 88<br>(90) |            | 94<br>(76)   | 88<br>(89) |             | 96<br>(85)   | 92<br>(94) |             |

| Mathematics Percent Passing: Grade 8 |            |            |            |            |            |            |              |            |            |            |            |            |              |            |             |
|--------------------------------------|------------|------------|------------|------------|------------|------------|--------------|------------|------------|------------|------------|------------|--------------|------------|-------------|
|                                      | 1980       |            |            | 1982       |            |            | 1983         |            |            | 1985       |            |            | 1986         |            |             |
|                                      | BL         | WH         | TOT        | BL         | WH         | TOT        | BL           | WH         | TOT        | BL         | WH         | TOT        | BL           | WH         | TOT         |
| Bldg 1                               | 70<br>(56) | 85<br>(83) | 77<br>(67) | 61<br>(43) | 81<br>(77) | 71<br>(65) | 86<br>(76)   | 97<br>(94) | 91<br>(86) | 85<br>(74) | 91<br>(88) | 88<br>(82) | 92<br>(81)   | 91<br>(84) | 92<br>(83)  |
| 2                                    | 75<br>(61) | 93<br>(89) | 84<br>(84) | 47<br>(27) | 69<br>(73) | 58<br>(65) | 74<br>(68)   | 87<br>(87) | 81<br>(83) | 78<br>(66) | 81<br>(82) | 80<br>(80) | 76<br>(67)   | 83<br>(86) | 79<br>(83)  |
| 3                                    | 77<br>(67) | 87<br>(93) | 82<br>(92) | 61<br>(50) | 61<br>(66) | 61<br>(66) | 105<br>(100) | 91<br>(94) | 98<br>(95) | 78<br>(67) | 91<br>(98) | 84<br>(97) | 111<br>(100) | 91<br>(95) | 100<br>(96) |
| Tot                                  | 74<br>(59) | 88<br>(91) |            | 56<br>(36) | 70<br>(71) |            | 88<br>(76)   | 92<br>(92) |            | 81<br>(71) | 88<br>(88) |            | 93<br>(77)   | 88<br>(89) |             |

\*Adjusted mean percent passing  
 \*\*Unadjusted mean percent passing

Table 3.8: Unadjusted and adjusted means for Grades 10 & 11 Race, Building Mixture and Race by Building Mixture effects.

|        |                  | Reading Percent Passing: Grades 10 (1985 and 1986) & 11 (1983) |    |     |                  |    |        |      |      |       |      |      |      |      |      |     |
|--------|------------------|----------------------------------------------------------------|----|-----|------------------|----|--------|------|------|-------|------|------|------|------|------|-----|
|        |                  | 1980                                                           |    |     | 1982             |    |        | 1983 |      |       | 1985 |      |      | 1986 |      |     |
|        |                  | BL                                                             | WH | TOT | BL               | WH | TOT    | BL   | WH   | TOT   | BL   | WH   | TOT  | BL   | WH   | TOT |
| Bldg 1 | No Data Analyzed | No Data Analyzed                                               |    |     | No Data Analyzed |    |        | 90*  | 96   | 92    | 87   | 87   | 87   | 73   | 86   | 79  |
|        |                  |                                                                |    |     |                  |    | (82)** | (92) | (89) | (74)  | (84) | (80) | (61) | (85) | (77) |     |
| 2      |                  |                                                                |    |     |                  |    | 88     | 88   | 88   | 76    | 89   | 82   | 69   | 87   | 78   |     |
|        |                  |                                                                |    |     |                  |    | (78)   | (91) | (89) | (65)  | (92) | (88) | (53) | (89) | (81) |     |
| 3      |                  |                                                                |    |     |                  |    | 104    | 95   | 100  | 109   | 91   | 100  | 76   | 89   | 82   |     |
|        |                  |                                                                |    |     |                  |    | (100)  | (98) | (98) | (100) | (97) | (97) | (66) | (94) | (93) |     |
| Tot    |                  |                                                                |    |     |                  |    | 94     | 93   |      | 89    | 91   |      | 72   | 87   |      |     |
|        |                  |                                                                |    |     |                  |    | 82     | 95   |      | (74)  | (92) |      | (58) | (90) |      |     |

|        |                  | Mathematics Percent Passing: Grades 10 (1985 and 1986) & Grade 11 (1983) |    |     |                  |    |      |      |      |      |      |      |      |      |      |     |
|--------|------------------|--------------------------------------------------------------------------|----|-----|------------------|----|------|------|------|------|------|------|------|------|------|-----|
|        |                  | 1980                                                                     |    |     | 1982             |    |      | 1983 |      |      | 1985 |      |      | 1986 |      |     |
|        |                  | BL                                                                       | WH | TOT | BL               | WH | TOT  | BL   | WH   | TOT  | BL   | WH   | TOT  | BL   | WH   | TOT |
| Bldg 1 | No Data Analyzed | No Data Analyzed                                                         |    |     | No Data Analyzed |    |      | 63   | 74   | 68   | 62   | 75   | 69   | 64   | 83   | 73  |
|        |                  |                                                                          |    |     |                  |    | (46) | (69) | (61) | (43) | (69) | (61) | (50) | (82) | (72) |     |
| 2      |                  |                                                                          |    |     |                  |    | 62   | 78   | 70   | 64   | 71   | 68   | 47   | 81   | 64   |     |
|        |                  |                                                                          |    |     |                  |    | (44) | (84) | (77) | (48) | (76) | (72) | (30) | (83) | (72) |     |
| 3      |                  |                                                                          |    |     |                  |    | 74   | 83   | 79   | 98   | 82   | 90   | 68   | 84   | 76   |     |
|        |                  |                                                                          |    |     |                  |    | (67) | (90) | (89) | (86) | (89) | (89) | (56) | (90) | (89) |     |
| Tot    |                  |                                                                          |    |     |                  |    | 66   | 78   |      | 75   | 76   |      | 60   | 83   |      |     |
|        |                  |                                                                          |    |     |                  |    | (47) | (83) |      | (48) | (80) |      | (43) | (86) |      |     |

\*Adjusted mean percent passing  
 \*\*Unadjusted mean percent passing

Table 3.9: Grade 6 bivariate correlations between student achievement and responses to questionnaire items\*

|                            | Reading |      |     |      |     |      | Grade 6 Mathematics |      |     |      |      |      |
|----------------------------|---------|------|-----|------|-----|------|---------------------|------|-----|------|------|------|
|                            | ALL     | BL   | WH  | BMI  | BM2 | BM3  | ALL                 | BL   | WH  | BMI  | BM2  | BM3  |
| 1 Time in District         |         |      |     |      |     |      |                     |      |     |      |      |      |
| 2 Fewer Siblings           | .15     | .12  | .11 | .14  | .16 |      | .10                 | .11  |     | .14  |      |      |
| 3 Less TV                  |         | .13  |     | .16  |     |      |                     |      |     | .15  |      |      |
| 4 More book reading        | .17     | .13  | .18 | .21  | .12 | .19  | .14                 | .12  | .15 | .18  | -.11 |      |
| 5 Less Daily TV            | .11     | -.12 | .14 |      |     |      | .18                 | -.11 | .10 |      |      | .15  |
| 6 Mother & Father in home  | .13     |      | .13 |      | .11 | .11  |                     |      | .17 | .11  | .18  | .11  |
| 7 Receive newspaper        | .10     | -.14 | .15 |      |     | .15  |                     |      |     |      |      |      |
| 8 Dictionary in home       |         |      | .10 |      |     |      |                     |      |     |      |      |      |
| 9 Encyclopedia in home     |         |      | .10 |      | .14 |      | -.11                |      |     |      |      |      |
| 10 Mother Educ. level      | .15     |      | .18 |      | .12 | .10  | .12                 |      | .16 |      |      | .11  |
| 11 Father Educ. level      | .15     | -.12 | .24 |      | .10 | .11  | .14                 | -.15 | .22 |      | .13  | .10  |
| 12 Books in home           | .11     |      | .13 |      | .17 |      |                     |      |     |      |      |      |
| 13 Receive magazines       | .12     |      | .15 | -.13 | .19 |      | .14                 |      | .15 |      | .22  |      |
| 14 Read newspapers         | .18     | .12  | .18 | .19  | .11 | .19  | .15                 | .13  | .13 | .19  | .10  |      |
| 15 Read magazines          | .11     |      | .12 |      | .20 | -.10 | .12                 |      | .13 |      | .25  | -.16 |
| 16 Read books              |         |      |     |      | .11 |      |                     |      |     |      |      |      |
| 17 Home help w/homework    | .11     | .10  |     | .12  |     |      |                     |      |     |      | .11  |      |
| 18 Take to library         | .10     | .11  |     | .17  |     |      |                     |      |     |      |      |      |
| 19 Talk about homework     |         |      |     | -.10 |     |      |                     | .14  |     |      |      |      |
| 20 Read for fun            | .16     | .14  | .15 | .11  | .13 | .17  | .11                 | .11  | .11 | .14  |      | .10  |
| 21 Check out library books |         |      |     |      |     |      |                     |      |     |      |      |      |
| 22 Time spent on homework  |         |      |     | -.16 |     |      |                     |      |     |      |      |      |
| 23 Fewer days absent       |         |      | .11 | .15  | .12 |      |                     |      | .11 | .19  | .12  | .11  |
| 24 Fewer days tardy        | .14     |      | .14 |      | .17 | .16  | .17                 | .17  | .15 | .19  | .17  | .21  |
| 25 Expect to graduate      | .21     | .24  | .19 | .34  | .10 | .26  | .21                 | .23  | .19 | .32  | .10  | .29  |
| 26 Mother expectation      | .22     |      | .28 |      | .25 | .32  | .22                 | .10  | .26 |      | .22  | .33  |
| 27 Father expectation      | .17     |      | .22 | .10  | .17 | .25  | .16                 | .12  | .16 | .18  |      | .25  |
| 28 Reading self-concept    | .33     | .29  | .34 | .32  | .35 | .26  | .20                 | .29  | .17 | .24  | .21  | .11  |
| 29 Math self-concept       | .27     | .25  | .25 | .26  | .31 | .14  | .36                 | .33  | .35 | .30  | .41  | .28  |
| 30 Improve assignment      |         |      |     |      |     | .15  |                     |      |     |      |      |      |
| 31 Make-up work            | .28     | .27  | .26 | .25  | .24 | .24  | .34                 | .29  | .33 | .35  | .28  | .32  |
| 32 Does assign. promptly   | .14     |      | .16 | .15  | .19 |      | .15                 | .15  | .15 | .21  | .17  |      |
| 33 Reread material         |         | .18  |     |      |     | .11  |                     |      |     |      |      |      |
| 34 Success= work, not luck | .26     | .34  | .21 | .42  | .22 | .12  | .24                 | .29  | .20 | .34  | .17  | .21  |
| 35 No external barriers    | .17     | .24  | .14 | .21  | .15 |      | .23                 | .25  | .21 | .22  | .23  | .16  |
| 36 Own fault               |         |      |     |      |     | .11  |                     |      |     |      |      |      |
| 37 Expects to get job      | .12     |      | .13 |      | .20 |      | .12                 |      | .12 | .11  | .13  |      |
| 38 Likes school            | -.10    | -.27 |     | -.17 | .17 |      |                     | -.10 |     |      |      |      |
| 39 Likes doing homework    | -.10    | -.11 |     | -.14 |     |      |                     |      |     |      |      |      |
| 40 More than assigned work | .12     |      | .15 |      | .15 |      |                     |      |     | -.10 |      |      |



|    |                               |     |      |     |     |      |      |     |      |     |     |     |     |     |
|----|-------------------------------|-----|------|-----|-----|------|------|-----|------|-----|-----|-----|-----|-----|
| 41 | Would go to school            |     |      |     |     |      |      |     |      |     |     |     |     |     |
| 42 | Material not covered too fast | .19 | .18  | .19 | .22 | .20  | .11  | .22 | -.10 | .24 | .22 | .21 | .12 |     |
| 43 | Can catch up when behind      | .15 | .18  | .13 | .17 | .13  | .11  | .20 | .24  | .22 | .18 | .15 | .24 | .17 |
| 44 | Worth trying to succeed       | .13 |      | .16 |     | .16  | .13  | .14 | .22  | .18 | .15 | .15 | .25 |     |
| 45 | No favorites                  | .11 | -.14 |     |     | -.17 | -.11 |     | -.17 | .15 | .15 | .13 | .13 | .15 |
| 46 | Rules to follow in class      | .17 | .19  | .16 | .26 | .22  |      | .18 | .21  | .17 | .27 | .28 |     |     |
| 47 | Teachers help                 |     |      |     |     |      |      |     |      |     |     |     |     |     |
| 48 | No fooling in class           |     |      |     |     |      |      |     | .10  |     | .10 |     |     |     |
| 49 | Teachers not strict           |     |      |     |     |      |      | .16 | .13  | .17 | .16 | .18 |     |     |
| 50 | Pay attention                 | .18 | .18  | .16 | .27 | .14  | .11  | .18 | .19  | .15 | .17 | .19 | .14 |     |
| 51 | Work hard in class            |     | .10  |     |     |      |      |     |      |     |     |     |     |     |
| 52 | Class explanations clear      |     |      | .10 | .14 |      | .18  | .12 | .13  | .14 | .23 |     | .12 |     |
| 53 | Checks on understanding       |     |      | .14 |     | .13  |      | .14 |      | .17 |     | .14 | .14 | .14 |
| 54 | Classes organized             | .12 |      | .15 | .15 |      | .16  | .12 | .10  | .13 |     | .15 | .14 |     |
| 55 | Knows class goals             |     |      |     |     | -.14 |      |     |      |     |     |     | .15 |     |
| 56 | School prepares for life      |     |      | .11 |     |      |      | .12 |      | .13 | .16 |     |     |     |
| 57 | School prepares for career    |     |      |     | .10 |      |      |     |      |     |     |     |     |     |
| 58 | Self concept as student       | .34 | .29  | .33 | .30 | .34  | .29  | .31 | .25  | .29 | .18 | .30 | .34 | .34 |
|    | Verbal ability                | .54 | .51  | .53 | .55 | .53  | .50  | .45 | .45  | .43 | .52 | .42 | .39 |     |
|    | Quantitative ability          | .52 | .49  | .51 | .57 | .53  | .42  | .52 | .50  | .51 | .55 | .54 | .41 |     |
|    | Nonverbal ability             | .48 | .41  | .46 | .53 | .45  | .40  | .42 | .36  | .40 | .44 | .39 | .38 |     |

\*Only correlations of  $\pm .10$  are reported.



|                                |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| 41 Would go to school          |      |      |      |      | .11  |      |      |      |      |      |      |      |
| 42 Mater. not covered too fast |      |      |      |      |      |      |      |      |      |      |      |      |
| 43 Can catch up when behind    | .13  | .21  | .11  | .18  | .10  | .11  |      |      |      |      |      |      |
| 44 Worth trying to succeed     | .12  | .22  | .11  | .10  | .12  | .12  | .13  |      | .17  |      | .16  | .12  |
| 45 No favorites                | -.23 | -.30 | -.17 | -.25 | -.25 |      | -.11 | -.12 | .13  | -.16 | -.12 | .12  |
| 46 Rules to follow in class    | .16  | .33  | .11  | .19  | .19  |      | -.15 | -.17 | -.11 |      | -.17 |      |
| 47 Teachers help               |      | -.21 |      | -.19 |      |      | .10  |      | .11  |      | .16  |      |
| 48 No fooling in class         |      |      |      |      |      |      |      |      | -.10 |      |      | -.10 |
| 49 Teachers not strict         | .16  | .22  | .13  | .12  | .19  | .12  | .11  | .13  |      |      |      |      |
| 50 Pay attention               |      |      |      |      |      | .16  |      | .22  |      |      |      | .14  |
| 51 Work hard in class          |      |      | .13  | .20  |      |      |      |      |      |      |      |      |
| 52 Class explanations clear    |      | -.20 |      | -.11 |      |      | .14  |      | .18  | .17  | .13  | .14  |
| 53 Checks on understanding     | .10  |      |      |      | -.23 |      |      | -.11 |      |      | -.10 | .10  |
| 54 Classes organized           |      |      |      |      |      |      |      |      |      |      |      |      |
| 55 Knows class goals           | -.10 |      |      |      | -.15 |      |      |      |      |      | -.14 |      |
| 56 School prepares for life    |      | -.17 |      | -.12 |      | -.11 |      |      |      |      |      |      |
| 57 School prepares for career  |      | -.14 |      |      |      | -.14 |      |      |      |      |      |      |
| 58 Self concept as student     | .22  | .10  | .24  | .16  | .19  | .31  | .34  | .30  | .33  | -.10 | .30  | .33  |
| Verbal ability                 | .38  | .33  | .37  | .43  | .37  | .21  | .37  | .38  | .34  | .38  | .42  | .13  |
| Quantitative ability           | .37  | .35  | .35  | .42  | .34  | .25  | .42  | .35  | .43  | .37  | .51  | .27  |
| Nonverbal ability              | .31  | .24  | .31  | .29  | .33  | .19  | .38  | .34  | .37  | .29  | .46  | .31  |

\*Only correlations of  $\pm .10$  are reported.

Table 3.11: Grade 10 bivariate correlations between student achievement and responses to questionnaire items\*

|                            | Grade 10 |      |      |      |      |      |             |      |      |      |      |      |
|----------------------------|----------|------|------|------|------|------|-------------|------|------|------|------|------|
|                            | Reading  |      |      |      |      |      | Mathematics |      |      |      |      |      |
|                            | ALL      | BL   | WH   | BMI  | BM2  | BM3  | ALL         | BL   | WH   | BMI  | BM2  | BM3  |
| 1 Time in District         |          |      |      |      |      |      |             |      |      |      |      |      |
| 2 Fewer Siblings           |          | .10  |      |      |      |      |             | .13  |      |      |      |      |
| 3 Less TV                  |          | -.12 |      |      |      |      | .10         |      |      |      |      |      |
| 4 More book reading        | .12      |      | .10  | .18  | .12  |      |             |      |      | .19  |      |      |
| 5 Less Daily TV            | .16      |      |      | .24  | .10  |      | .18         |      | .10  | .20  | .19  | .12  |
| 6 Mother & Father in home  |          |      |      |      | .11  |      | .12         |      |      |      | .17  |      |
| 7 Receive newspaper        | .13      | -.11 | .15  | .10  |      | .16  | .14         |      | .10  | .11  |      | .16  |
| 8 Dictionary in home       | .17      | .23  |      | .19  | .14  | .23  | .14         |      | .10  | .16  | .10  | .17  |
| 9 Encyclopedia in home     |          |      |      |      |      |      |             |      |      |      |      |      |
| 10 Mother Educ. level      | .14      | .10  | .14  |      | .11  | .10  | .12         |      | .14  |      | .15  |      |
| 11 Father Educ. level      | .19      |      | .21  | .19  |      | .27  | .23         | .14  | .23  | .31  | .14  | .22  |
| 12 Books in home           | .20      | .22  | .11  | .14  | .23  | .15  | .12         |      |      | .15  |      |      |
| 13 Receive magazines       | .11      |      | .12  |      | .11  |      | .12         | -.13 | .13  |      | .14  |      |
| 14 Read newspapers         | .20      | .12  | .22  | .17  | .12  | .34  | .18         | .17  | .17  |      | .22  | .13  |
| 15 Read magazines          |          |      |      |      |      |      |             |      |      |      |      |      |
| 16 Read books              |          |      |      |      |      |      |             |      |      |      |      |      |
| 17 Home help w/homework    | -.11     |      | -.13 |      | -.15 | -.11 | -.18        | -.11 | -.21 | -.18 | -.16 | -.21 |
| 18 Take to library         |          | .11  |      |      |      |      |             |      |      |      |      |      |
| 19 Talk about homework     |          | -.17 |      | -.11 |      |      |             |      |      |      |      |      |
| 20 Read for fun            |          | .10  |      | .19  |      |      |             | -.15 |      | -.11 | -.14 |      |
| 21 Check out library books |          |      |      |      |      |      |             | .13  |      | .22  |      |      |
| 22 Time spent on homework  |          |      |      |      |      |      |             | -.12 |      |      |      |      |
| 23 Fewer days absent       |          | .14  |      | .12  |      |      |             | .22  |      | .15  |      |      |
| 24 Fewer days tardy        | .12      | .10  | .13  | .14  | .11  |      | .10         | .11  |      |      |      | .17  |
| 25 Expect to graduate      | .13      | .16  | .16  | .16  | .13  | .13  | .15         | .20  | .10  | .10  | .13  | .24  |
| 26 Mother expectation      | .19      | .13  | .21  | .32  |      | .25  |             | .17  |      |      |      | .22  |
| 27 Father expectation      | .23      | .27  | .25  | .36  | .15  | .18  | .23         | .17  | .26  | .20  | .17  | .34  |
| 28 Reading self-concept    | .15      | .18  | .16  | .19  | .11  | .19  | .18         | .15  | .21  | .15  |      | .32  |
| 29 Math self-concept       |          |      |      | .19  |      | .16  |             | .11  |      |      |      |      |
| 30 Improve assignment      | -.10     | -.11 |      |      | -.18 |      | .12         |      | .14  | .16  | -.13 | .22  |
| 31 Make-up work            | .19      | .24  | .15  | .18  | .17  | .19  |             | -.13 |      | -.13 | -.12 |      |
| 32 Does assign. promptly   |          | .16  |      |      | .11  |      | .12         | .20  |      |      | .15  | .11  |
| 33 Reread material         |          |      |      |      |      |      |             | .11  |      |      |      |      |
| 34 Success= work, not luck | .17      | .18  | .13  | .11  | .13  | .26  | -.11        | -.21 |      | -.10 | -.11 |      |
| 35 No external barriers    |          |      | .12  | .11  | .13  | .16  | .14         | .21  |      | .17  |      | .15  |
| 36 Own fault               |          |      |      |      |      |      | .10         |      | .13  |      | .11  | .11  |
| 37 Expects to get job      |          |      |      |      |      |      |             |      |      |      |      | .16  |
| 38 Likes school            |          |      | .10  |      | .15  |      |             |      |      |      | .11  |      |
| 39 Likes doing homework    |          |      |      |      |      | -.12 | -.12        |      | -.11 |      |      | -.17 |
| 40 More than assigned work |          |      |      |      |      |      |             |      |      | .18  | .11  |      |

|                                |      |      |      |      |      |      |  |      |     |     |      |      |      |     |
|--------------------------------|------|------|------|------|------|------|--|------|-----|-----|------|------|------|-----|
| 41 Would go to school          | .13  |      | .15  |      | .15  | .15  |  | .10  | .10 | .11 |      |      |      |     |
| 42 Mater. not covered too fast | .17  | .12  | .16  | .11  | .21  | .15  |  | .15  | .20 | .12 |      |      | .22  | .20 |
| 43 Can catch up when behind    | .18  | .20  | .17  |      | .31  |      |  | .11  | .12 | .10 | -.13 |      | .27  | .10 |
| 44 Worth trying to succeed     | .17  | .22  | .14  |      | .26  |      |  |      | .16 |     |      |      |      |     |
| 45 No favorites                | -.14 |      | -.14 |      | -.16 | -.17 |  |      |     |     |      |      |      |     |
| 46 Rules to follow in class    | -.15 | .15  | .15  | .15  | .13  | .19  |  |      |     |     |      |      |      |     |
| 47 Teachers help               |      | -.10 |      |      |      |      |  |      |     |     |      |      | .21  |     |
| 48 No fooling in class         |      | -.15 |      |      |      |      |  |      |     |     |      |      |      |     |
| 49 Teachers not strict         | .21  | .19  | .20  | .17  | .28  | .13  |  | .17  | .17 | .14 | .11  |      | .22  | .12 |
| 50 Pay attention               |      |      |      |      |      |      |  |      |     |     |      |      |      |     |
| 51 Work hard in class          |      |      |      | -.14 |      |      |  |      |     |     |      |      |      |     |
| 52 Class explanations clear    |      | -.11 |      |      |      |      |  |      |     |     |      |      |      | .13 |
| 53 Checks on understanding     |      |      |      | .19  |      |      |  |      | .14 |     |      |      | .16  |     |
| 54 Classes organized           |      |      |      |      |      | .12  |  |      |     |     |      |      |      | .12 |
| 55 Knows class goals           |      |      |      | -.13 |      |      |  | -.11 |     |     |      | -.16 | -.16 |     |
| 56 School prepares for life    |      |      |      |      |      |      |  |      | .10 |     |      |      |      |     |
| 57 School prepares for career  |      | -.11 |      |      |      |      |  |      |     |     |      |      |      |     |
| 58 Self concept as student     | .23  | .15  | .21  | .40  | .10  | .21  |  | .24  | .17 | .22 | .29  | .15  |      | .31 |
| Verbal ability                 | .48  | .61  | .36  | .52  | .46  | .42  |  | .52  | .54 | .42 | .49  | .54  |      | .45 |
| Quantitative ability           | .43  | .40  | .38  | .47  | .39  | .40  |  | .50  | .38 | .46 | .49  | .53  |      | .44 |
| Nonverbal ability              | .44  | .49  | .35  | .42  | .43  | .41  |  | .47  | .42 | .39 | .41  | .53  |      | .39 |

\*Only correlations of  $\pm .10$  are reported.

Table 3.12: Multiple correlation results for significant Reading Percent Passing effects

Grade 6

| Variable Clusters Entered by Step | R-Squared | R-Squared Change | R-Square Change Statistically Significant at .05 level? |
|-----------------------------------|-----------|------------------|---------------------------------------------------------|
| 1. Ability                        | .334      | .334             | Yes                                                     |
| 2. Questionnaire Item(n=36)       | .414      | .080             | No                                                      |
| 3. Building Mixture               | .416      | .002             | No                                                      |
| 4. Race                           | .417      | .001             | No                                                      |
| 5. Building Mixture by Race       | .418      | .001             | No                                                      |

Grade 8

| Variable Clusters Entered by Step | R-Squared | R-Squared Change | R-Square Change Statistically Significant at .05 level? |
|-----------------------------------|-----------|------------------|---------------------------------------------------------|
| 1. Ability                        | .159      | .159             | Yes                                                     |
| 2. Questionnaire Items(n=36)      | .311      | .151             | Yes                                                     |
| 3. Race                           | .317      | .006             | No                                                      |
| 4. Building Mixture               | .319      | .002             | No                                                      |
| 5. Race by Building Mixture       | .330      | .011             | No                                                      |

Grade 10

| Variable Clusters Entered by Step | R-Squared | R-Squared Change | R-Square Change Statistically Significant at .05 level? |
|-----------------------------------|-----------|------------------|---------------------------------------------------------|
| 1. Ability                        | .258      | .258             | Yes                                                     |
| 2. Questionnaire Items(n=39)      | .388      | .130             | Yes                                                     |
| 3. Building Mixture               | .395      | .007             | No                                                      |
| 4. Race                           | .406      | .011             | Yes                                                     |
| 5. Race by Building Mixture       | .413      | .007             | No                                                      |

Table 3.13: Multiple correlation results for significant Mathematics Percent Passing effects

Grade 6

| Variable Clusters Entered by Step | R-Squared | R-Squared Change | R-Square Change Statistically Significant at .05 level? |
|-----------------------------------|-----------|------------------|---------------------------------------------------------|
| 1. Ability                        | .286      | .286             | Yes                                                     |
| 2. Questionnaire Items(n=38)      | .389      | .103             | Yes                                                     |
| 3. Building                       | .392      | .003             | No                                                      |
| 4. Race                           | .396      | .004             | No                                                      |
| 5. Race by Building Mixture       | .401      | .005             | No                                                      |

Grade 8

| Variable Clusters Entered by Step | R-Squared | R-Squared Change | R-Square Change Statistically Significant at .05 level? |
|-----------------------------------|-----------|------------------|---------------------------------------------------------|
| 1. Ability                        | .191      | .191             | Yes                                                     |
| 2. Questionnaire Items(n=45)      | .309      | .118             | Yes                                                     |
| 3. Race                           | .311      | .002             | No                                                      |
| 4. Building Mixture               | .324      | .013             | Yes                                                     |
| 5. Race by Building Mixture       | .329      | .005             | No                                                      |

Grade 10

| Variable Clusters Entered by Step | R-Squared | R-Squared Change | R-Square Change Statistically Significant at .05 level? |
|-----------------------------------|-----------|------------------|---------------------------------------------------------|
| 1. Ability                        | .311      | .311             | Yes                                                     |
| 2. Questionnaire Items(n=38)      | .400      | .089             | Yes                                                     |
| 3. Building Mixture               | .407      | .007             | No                                                      |
| 4. Race                           | .422      | .015             | Yes                                                     |
| 5. Race by Building Mixture       | .424      | .002             | No                                                      |

Table 3.14: Significance test results for Race, Mobility, and Race by Mobility Analyses Controlling for Prior Achievement and Ability

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| <u>Reading</u> |                |                |                |
|----------------|----------------|----------------|----------------|
| <u>Effect</u>  | <u>Grade 4</u> | <u>Grade 6</u> | <u>Grade 8</u> |
| Race           | NS             | NS             | NS             |
| Mobility       | NS             | *              | NS             |
| R x M          | NS             | NS             | NS             |

  

| <u>Mathematics</u> |                |                |                |
|--------------------|----------------|----------------|----------------|
| <u>Effect</u>      | <u>Grade 4</u> | <u>Grade 6</u> | <u>Grade 8</u> |
| Race               | NS             | NS             | NS             |
| Mobility           | NS             | NS             | *              |
| R x M              | *              | NS             | NS             |

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Table 3.15: Sample sizes and Unadjusted and adjusted Percent Passing means for Race, Mobility and Race by Mobility Analyses.

| <u>Sample Sizes</u> |   |                |     |     |                |     |     |                |     |     |
|---------------------|---|----------------|-----|-----|----------------|-----|-----|----------------|-----|-----|
|                     |   | <u>Grade 4</u> |     |     | <u>Grade 6</u> |     |     | <u>Grade 8</u> |     |     |
|                     |   | BL             | WH  | TOT | BL             | WH  | TOT | BL             | WH  | TOT |
| Mobility            | 1 | 25             | 55  | 80  | 16             | 24  | 40  | 42             | 62  | 104 |
|                     | 2 | 115            | 613 | 728 | 93             | 666 | 759 | 59             | 512 | 571 |
|                     | 3 | 18             | 68  | 86  | 13             | 92  | 105 | 41             | 261 | 302 |
| Total               |   | 158            | 736 |     | 122            | 782 |     | 142            | 835 |     |

  

| <u>Reading Percent Passing</u> |   |                |            |            |                |            |            |                |            |            |
|--------------------------------|---|----------------|------------|------------|----------------|------------|------------|----------------|------------|------------|
|                                |   | <u>Grade 4</u> |            |            | <u>Grade 6</u> |            |            | <u>Grade 8</u> |            |            |
|                                |   | BL             | WH         | TOT        | BL             | WH         | TOT        | BL             | WH         | TOT        |
| Mobility                       | 1 | 100*<br>(88)** | 85<br>(87) | 93<br>(88) | 68<br>(56)     | 72<br>(71) | 70<br>(65) | 77<br>(62)     | 84<br>(84) | 80<br>(75) |
|                                | 2 | 88<br>(75)     | 87<br>(90) | 88<br>(88) | 81<br>(58)     | 76<br>(79) | 79<br>(77) | 85<br>(75)     | 87<br>(90) | 86<br>(88) |
|                                | 3 | 87<br>(78)     | 86<br>(85) | 86<br>(84) | 67<br>(46)     | 69<br>(72) | 68<br>(69) | 89<br>(78)     | 89<br>(90) | 89<br>(88) |
| Total                          |   | 92<br>(77)     | 86<br>(89) |            | 72<br>(57)     | 72<br>(78) |            | 84<br>(72)     | 87<br>(90) |            |

  

| <u>Mathematics Percent Passing</u> |   |                |            |            |                |            |            |                |            |            |
|------------------------------------|---|----------------|------------|------------|----------------|------------|------------|----------------|------------|------------|
|                                    |   | <u>Grade 4</u> |            |            | <u>Grade 6</u> |            |            | <u>Grade 8</u> |            |            |
|                                    |   | BL             | WH         | TOT        | BL             | WH         | TOT        | BL             | WH         | TOT        |
| Mobility                           | 1 | 93*<br>(76)**  | 74<br>(78) | 84<br>(78) | 66<br>(56)     | 73<br>(71) | 70<br>(65) | 61<br>(38)     | 68<br>(71) | 64<br>(58) |
|                                    | 2 | 72<br>(54)     | 76<br>(80) | 74<br>(76) | 78<br>(60)     | 82<br>(85) | 80<br>(82) | 78<br>(68)     | 79<br>(83) | 78<br>(81) |
|                                    | 3 | 62<br>(50)     | 77<br>(76) | 69<br>(71) | 76<br>(54)     | 76<br>(78) | 76<br>(75) | 84<br>(68)     | 83<br>(83) | 84<br>(81) |
| Total                              |   | 75<br>(57)     | 76<br>(79) |            | 73<br>(59)     | 77<br>(83) |            | 74<br>(59)     | 76<br>(82) |            |

\* Adjusted mean percent passing

\*\* Original mean percent passing

Appendix A

Building Mixture Classifications by Year  
for each USD 501 Attendance Center

| <u>Elementary Schools</u>         | <u>1980</u> | <u>1982</u> | <u>1983</u> | <u>1985</u> | <u>1986</u> |
|-----------------------------------|-------------|-------------|-------------|-------------|-------------|
| Avondale East                     | 2           | 2           | 1           | 1           | 1           |
| Avondale West                     | 3           | 2           | 2           | 2           | 2           |
| Belvoir                           | 1           | 1           | 1           | 1           | 1           |
| Bishop                            | 3           | 3           | 3           | 3           | 3           |
| Central Park                      | 1           | -           | -           | -           | -           |
| Crestview                         | 3           | 3           | 3           | 3           | 3           |
| Gage                              | 3           | 3           | 3           | 3           | 3           |
| Highland Park Central             | 2           | 2           | 2           | 2           | 2           |
| Highland Park North               | 1           | 1           | 1           | 1           | 1           |
| Highland Park South               | 2           | 2           | 2           | 2           | 2           |
| Hudson                            | 2           | 2           | 2           | 1           | 1           |
| Lafayette                         | 1           | 1           | 1           | 1           | 1           |
| Linn                              | 2           | 2           | 2           | 2           | 2           |
| Lowman Hill                       | 1           | 1           | 1           | 1           | 1           |
| Lundgren                          | 3           | 2           | 2           | 2           | 2           |
| McCarter                          | 3           | 3           | 3           | 3           | 3           |
| McClure                           | 3           | 3           | 3           | 3           | 3           |
| McEachron                         | 2           | 3           | 3           | 3           | 3           |
| Potwin                            | 3           | 3           | 3           | 3           | 3           |
| Quincy                            | 2           | 2           | 2           | 2           | 2           |
| Quinton Heights                   | 1           | 1           | 1           | 1           | 1           |
| Randolph                          | 3           | 3           | 2           | 2           | 2           |
| Rice                              | 2           | -           | -           | -           | -           |
| Shaner                            | 2           | 2           | 2           | 2           | 2           |
| State Street                      | 2           | 2           | 2           | 2           | 2           |
| Stout                             | 3           | 2           | 2           | 2           | 2           |
| Sumner                            | 2           | 2           | 2           | 2           | 2           |
| Whitson                           | 3           | 3           | 3           | 3           | 3           |
| <u>Middle/Junior High Schools</u> |             |             |             |             |             |
| Boswell                           | 1           | -           | -           | -           | -           |
| Chase                             | -           | 2           | 2           | 2           | 2           |
| East Topeka                       | 1           | -           | -           | -           | -           |
| Eisenhower                        | 2           | 1           | 1           | 1           | 1           |
| French                            | 3           | 3           | 3           | 3           | 3           |
| Highland Park                     | 1           | -           | -           | -           | -           |
| Holliday                          | 2           | -           | -           | -           | -           |
| Jardine                           | 3           | 2           | 2           | 2           | 2           |
| Landon                            | 3           | 3           | 3           | 3           | 3           |
| Robinson                          | -           | 2           | 2           | 2           | 2           |
| Roosevelt                         | 2           | -           | -           | -           | -           |
| <u>High Schools</u>               |             |             |             |             |             |
| Highland Park                     | 1           | 1           | 1           | 1           | 1           |
| Topeka                            | 2           | 2           | 2           | 2           | 2           |
| Topeka West                       | 3           | 3           | 3           | 3           | 3           |

Appendix B

SCHOOL OPINION SURVEY

TOPEKA PUBLIC SCHOOLS

USD 501

1. What grade were you in when you first started going to the Topeka School System, USD 501?

- A. Kindergarten
- B. first grade
- C. second grade
- D. third grade
- E. fourth grade
- F. fifth grade
- G. sixth grade
- H. seventh grade
- I. eighth grade
- J. ninth or tenth grade

2. How many brothers and sisters do you have living with you?

- A. None
- B. 1
- C. 2
- D. 3
- E. 4
- F. 5
- G. 6 or more

3. When you have free time, how often do you watch television?

- A. Everyday or almost everyday
- B. About once a week
- C. About once a month
- D. Once a year or less

4. When you have free time, how often do you read a book?

- A. Everyday or almost everyday
- B. About once a week
- C. About once a month
- D. Once a year or less

5. How much television do you usually watch each day?

- A. None
- B. 1 hour or less
- C. 2 hours
- D. 3 hours
- E. 4 hours
- F. 5 hours
- G. 6 hours or more

6. Who do you live with? Completely fill the circles on the answer sheet for each of the letters that apply.

- A. Mother only
- B. Father only
- C. Mother and father
- D. Guardian(s)
- E. Relative(s)
- F. Other

7. Does your family get a newspaper regularly?

- A. Yes
- B. No
- C. I don't know

8. Is there a dictionary in your home?

- A. Yes
- B. No
- C. I don't know

9. Is there an encyclopedia in your home?
- A. Yes
  - B. No
  - C. I don't know
10. How far in school did your mother go?
- A. She did not finish high school
  - B. She graduated from high school
  - C. After graduating from high school, she went to college or some other school, but did not finish.
  - D. She graduated from college.
  - E. I don't know.
11. How far in school did your father go?
- A. He did not finish high school.
  - B. He graduated from high school.
  - C. After graduating from high school, he went to college or some other school, but did not finish.
  - D. He graduated from college.
  - E. I don't know.
12. Are there more than 25 books in your home?
- A. Yes
  - B. No
  - C. I don't know
13. Does your family get any magazines regularly?
- A. Yes
  - B. No
  - C. I don't know
14. How often do the people you live with read newspapers?
- A. Almost every day
  - B. Once or twice a week
  - C. Once or twice a month
  - D. A few times a year
  - E. Never or hardly ever
15. How often do the people you live with read magazines?
- A. Almost every day
  - B. Once or twice a week
  - C. Once or twice a month
  - D. A few times a year
  - E. Never or hardly ever
16. How often do the people you live with read books?
- A. Almost every day
  - B. Once or twice a week
  - C. Once or twice a month
  - D. A few times a year
  - E. Never or hardly ever
17. How often does your mother, father or someone else in your home help with your homework?
- A. Almost every day
  - B. Once or twice a week
  - C. Once or twice a month
  - D. A few times a year
  - E. Never or hardly ever
18. How often does your mother, father or someone else in your home take you to the library?
- A. Almost every day
  - B. Once or twice a week
  - C. Once or twice a month
  - D. A few times a year
  - E. Never or hardly ever

19. How often does your mother, father or someone else in your home talk with you about school work?
- A. Almost every day
  - B. Once or twice a week
  - C. Once or twice a month
  - D. A few times a year
  - E. Never or hardly ever
20. How often do you read for fun on your own time?
- A. Almost every day
  - B. Once or twice a week
  - C. Once or twice a month
  - D. A few times a year
  - E. Never or hardly ever
21. How often do you check books out of the public library?
- A. Almost every day
  - B. Once or twice a week
  - C. Once or twice a month
  - D. A few times a year
  - E. Never or hardly ever
22. How much time did you spend on homework yesterday?
- A. No homework was assigned
  - B. I had homework but didn't do it
  - C. Less than 1 hour
  - D. 1 to 2 hours
  - E. More than 2 hours
23. How many days of school did you miss last month?
- A. None
  - B. 1 or 2 days
  - C. 3 or 4 days
  - D. 5 to 10 days
  - E. More than 10 days
24. How many times were you late getting to school last month?
- A. None
  - B. 1 or 2 times
  - C. 3 or 4 times
  - D. 5 to 10 times
  - E. More than 10 times
25. Do you expect to graduate from high school?
- A. Yes
  - B. No
  - C. I don't know.
26. How good a student does your mother expect you to be?
- A. One of the best students in my class
  - B. Above the middle of the class
  - C. In the middle of my class
  - D. Just good enough to get by
  - E. Don't know
27. How good a student does your father expect you to be?
- A. One of the best students in my class
  - B. Above the middle of the class
  - C. In the middle of my class
  - D. Just good enough to get by
  - E. Don't know
28. How good a reader are you compared to others your age?
- A. Excellent
  - B. Very Good
  - C. Better Than Most, Good
  - D. OK, Average
  - E. Not So Good, Poor

29. How good at math are you compared to others your age?
- A. Excellent
  - B. Very Good
  - C. Better Than Most, Good
  - D. OK, Average
  - E. Not So Good, Poor
30. How often do you try to improve an assignment by checking and rewriting it?
- A. Almost every time
  - B. More than half the time
  - C. About half the time
  - D. Less than half the time
  - E. Never or hardly ever
31. How often do you make-up work when absent from school?
- A. Almost every time
  - B. More than half the time
  - C. About half the time
  - D. Less than half the time
  - E. Never or hardly ever
32. How often do you put off doing assignments until the last minute?
- A. Almost every time
  - B. More than half the time
  - C. About half the time
  - D. Less than half the time
  - E. Never or hardly ever
33. How often do you reread class material?
- A. Almost every time
  - B. More than half the time
  - C. About half the time
  - D. Less than half the time
  - E. Never or hardly ever



For each of the following statements on your answer sheet, mark A if you agree with the statement most of the time; mark B if you are not sure or don't know; and mark C if you disagree with the statement most of the time.

34. Good luck is more important than hard work for success.
- A. Agree
  - B. Not Sure
  - C. Disagree
35. Every time I try to get ahead, something or somebody stops me.
- A. Agree
  - B. Not Sure
  - C. Disagree
36. If a person is not successful in life, it is his own fault.
- A. Agree
  - B. Not Sure
  - C. Disagree
37. Even with a good education, I will have a hard time getting the right kind of job.
- A. Agree
  - B. Not Sure
  - C. Disagree
38. Each morning I look forward to coming to school.
- A. Agree
  - B. Not Sure
  - C. Disagree
39. I do not like having to do homework.
- A. Agree
  - B. Not Sure
  - C. Disagree
40. I only do the school work that is assigned.
- A. Agree
  - B. Not Sure
  - C. Disagree
41. If I had a choice, I wouldn't go to school at all.
- A. Agree
  - B. Not Sure
  - C. Disagree
42. Material in class is covered so fast that I don't have time to learn it.
- A. Agree
  - B. Not Sure
  - C. Disagree
43. When I get behind in school work, there is no way I can ever catch up.
- A. Agree
  - B. Not Sure
  - C. Disagree

44. I feel it is worth trying to succeed in school.
- A. Agree
  - B. Not Sure
  - C. Disagree
45. Certain students are favored by teachers more than others.
- A. Agree
  - B. Not Sure
  - C. Disagree
46. There are rules for students to follow in my classes.
- A. Agree
  - B. Not Sure
  - C. Disagree
47. Teachers at my school go out of their way to help students.
- A. Agree
  - B. Not Sure
  - C. Disagree
48. Students fool around a lot in my classes.
- A. Agree
  - B. Not Sure
  - C. Disagree
49. Teachers at my school are very strict.
- A. Agree
  - B. Not Sure
  - C. Disagree
50. I often do not pay attention during my classes.
- A. Agree
  - B. Not Sure
  - C. Disagree
51. I work hard in classes to get assignments done.
- A. Agree
  - B. Not Sure
  - C. Disagree
52. Things are explained well in my classes.
- A. Agree
  - B. Not Sure
  - C. Disagree
53. At school checks are made to see if students understand what is being covered.
- A. Agree
  - B. Not Sure
  - C. Disagree

54. My classes are well organized.
- A. Agree
  - B. Not Sure
  - C. Disagree
55. Students know the goals of their classes.
- A. Agree
  - B. Not Sure
  - C. Disagree
56. How would you rate your school at preparing students for life?
- A. Excellent
  - B. Good
  - C. Fair
  - D. Poor
57. How would you rate your school at preparing students for a career?
- A. Excellent
  - B. Good
  - C. Fair
  - D. Poor
58. How do you see yourself as a student?
- A. An A student
  - B. A B student
  - C. A C student
  - D. A D student
  - E. An F student
59. What grade are you now in?
- A. sixth grade
  - B. eighth grade
  - C. tenth grade