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Kevin A. Tate

Eastern Illinois University

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Relationship Between Student Mobility Rates and

Achievement Test Scores in the Illinois District of Georgetown-Ridge Farm
(TITLE)

BY

Kevin A. Tate

FIELD EXPERIENCE

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DEPARTMENT HEAD

Abstract

A study was done to see if high student mobility rates were related to achievement scores at the third and fifth grade levels for students in the Illinois School District of Georgetown - Ridge Farm. Student mobility and the 3rd and 5th grade achievement test scores of seventh and eighth grade students were examined. A mobile student was considered one that had not attended at least six and one half out of the seven educational years in kindergarten through grade six.

The findings of this study showed no major differences in achievement test scores of the stable student group compared to the mobile group and the total group. The study also revealed that even with a high mobility rate of students each year, there was still a 69 percent stable student group that had basically spent its entire kindergarten through sixth grade educational years in the Georgetown - Ridge Farm School District.

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Chapter I

Overview

Introduction and Statement of the Problem

The issue of what conditions play an important part in a child's education has been debated for some time. Some of these conditions include home environment, school environment, parental involvement, student mobility, student ability to learn and expertise of the teachers. Many studies have been done on these and other areas relevant to learning. This study focused on the relationship that high mobility may have on student achievement test results.

This study dealt with the relationship between a high student mobility rate and total achievement test scores. The study was based upon an examination of the records of the 1993 - 94 school year seventh and eighth grade student population in terms of mobility and their standardized achievement test scores in their 3rd and 5th grade years. The achievement test scores of mobile students were compared to the totals of those students who had basically spent their entire K-6 educational years in the Georgetown - Ridge Farm Community Unit School District #4.

The State of Illinois Quality Review Process asks the basic question: "Are students learning over time?" This study addressed that question by looking at the data on the two above mentioned groups. Student achievement test scores of the

population that include a high number of mobile students may not be giving a correct picture of the learning that is going on in the district.

Assumptions

The following assumptions were made for this study:

- ◆ Attendance, chronic truancy, low - income, etc. were not considered for this study. Only mobility was used as a variable. It was understood that the above mentioned items are related to student achievement test scores as well.
- ◆ The student records were considered to be accurate.

Limitations

The study was limited to an examination of records of 214 students in the Georgetown - Ridge Farm School District. This was considered to be a large enough sample to use, although it was restricted to one school district.

Operational Definitions

Mobile Student - For this study, this referred to any student that was enrolled for more than one half of one year outside of the Georgetown - Ridge Farm school district during his/her kindergarten through sixth grade school years.

Stable Student - For this study, this referred to any student that was enrolled in the Georgetown - Ridge Farm school district during his/her kindergarten through

sixth grade years. He/she could not have been enrolled out of the district for more than one half of one year during that time.

Achievement Test - This will refer to the Stanford Achievement Test and the Iowa Test of Basic Skills. No abilities test or state assessment tests were used in this study.

Chapter II

Rationale, Related Literature and Research

Rationale

The State of Illinois through its Quality Review is asking districts to show that students are learning over time. In other words, are they showing academic progress from year to year throughout their educational lives? Many factors can affect a student's ability to learn. One of the major factors may be high mobility. Educators constantly look at the factors that affect learning to see what changes and improvements can be made to help increase student learning. If high mobility impacts learning over time, then educators can use this information to help them better understand what can be done to counteract this impact.

Based on the above rationale, this study examined the student achievement test scores of two grade levels of a small East Central Illinois junior high school to see if mobility was related to student achievement test scores at the third and fifth grade levels.

Research Review

A widely held view in education is that the longer a student is exposed to a program of instruction, the better the chance that the student will learn and acquire the skills necessary to succeed in society and the work force. In other words,

schools need a consistent and continuous period of instruction before they can have a significant impact on students (Ligon, 1992).

A number of studies have been done to show the relationship between high mobility on student achievement. These studies have had mixed results. A study by Paredes (1993) indicated that students with higher numbers of moves had lower mean grade equivalents. Overall, the study established a relationship among student mobility, income of students' parents, ethnicity, and the grade level test scores of the students. That study also indicated that although mobility may not cause lower achievement, it was one factor in students' lives that could negatively affect learning.

High student mobility may be associated with a low level of school performance at all levels. However, it is reasonable to derive that for elementary and middle high school students, it is more important that students attend school than that they stay in one school. At the high school level, however, it is essential that students both stay in one school and attend school more (N.Y. State Education Department, 1992).

Between 1986 and 1991, the average mobility rate in the State of Illinois decreased from 20.8% to 20.6%. The 1991 mobility rate ranged from a low of 0% to a high of 98.7%. Four districts had mobility rates of more than 50%. No data was given in the State of Illinois Report Card's Performances Profiles on the

relationship between student mobility rates and achievement (Illinois School Report Card's Performances Profile, 1992).

Student Stability: Some Relationships between Student Stability and Other Selected Variables for 1987 - 88 was a study done in the Cleveland, Ohio schools during the 1987-88 school year. That study found that stable students exhibited the following characteristics when compared to less stable students:

1. Higher family income.
2. Higher attendance rate.
3. More likely to be tardy.
4. More likely to have lower suspension rates.
5. Less likely to have withdrawn from or dropped out of school.
6. More likely to be promoted.
7. Likely to have higher scores on reading achievement and competency tests.
8. More likely to have higher scores on mathematics achievement tests.

In a study done by Paredes (1993), student mobility was compared to student achievement on a norm-referenced test. Student records over a period of 13 years were examined. Counts were made of the number of new students entered at the beginning of each year. Moves from elementary to middle school and from middle to high school were excluded. The achievement measure for this study was the

reading portion of the Iowa Test of Basic Skills (ITBS) for grade 2, and the Norm-Referenced Assessment Program for Texas (NAPT) for grades 3 and 8. An analysis of variance was used to examine differences in achievement among students with varying number of moves. It was reported that students with higher number of moves had lower mean grade equivalents. It was clear that there was a relation between student mobility and student achievement. Although the study did not establish that mobility causes lower achievement, it does support the idea that mobility is one factor in students' lives that can negatively affect learning.

Other researchers found that student mobility had different effects for students at various ability levels. Whalen and Fried (1973), for example, identified highly mobile children who could be differentiated by socioeconomic status and intelligence. Their results indicated that mobility may exacerbate already existing differences among students. They concluded that high mobility had different effect on different students. Specifically, they found that high I.Q. students with high mobility experienced increased achievement while low I.Q. students with high mobility had lower achievement.

Chapter III

Design of the Study

This was a data based study. The only variables that were considered were student mobility and the third grade and fifth grade total reading and total math achievement test scores of the students. The author expected that some of the following questions would be answered through this study:

- Question 1. Is there a stable student population in the Georgetown - Ridge Farm Community Unit School District at the selected grade levels?
- Question 2. What will be the average achievement levels of the entire student population used in this study?
- Question 3. What will be the average achievement levels of the stable student population used in this study?
- Question 4. What will be the average achievement levels of the mobile student population used in this study?

Sample and Population

The site of this study was the Georgetown - Ridge Farm Community Unit School District's only middle school, Mary Miller Junior High School. The target group consisted of all seventh and eighth grade students that were enrolled on the last day of the 1993-94 school year. Since the number of students was not

significantly high, all student records were examined instead of taking a sample from the two grade levels..

Data Collection and Instrumentation

A database was constructed using Microsoft Access. The data was then transferred to Lotus 123 release 4. The fields consisted of the student's first and last names, grade level, stability or mobility, 3rd grade total reading and math grade equivalence scores, and 5th grade total reading and math grade equivalence scores taken from their achievement test scores. All student records were reviewed and the proper information placed into the database. Students with missing achievement test scores were counted for the mobility information, but were excluded from the averaging of the test scores in this study.

Data Analysis

Using the information taken from Appendix A, averages were calculated for the entire student population, the stable student population and the mobile student population. These averages were compared to see if there were any differences.

Chapter IV

Results

Of the 214 students for which data was obtained for this study, 147 students were classified as stable students. The remaining 67 students were classified as mobile students.

Question 1. Is there a stable student population in the Georgetown - Ridge Farm Community Unit School District at the selected grade levels?

Answer 1. The stable student population was 69 percent.

Question 2. What are the average achievement levels of the entire student population used in this study?

Answer 2. The average achievement levels are summarized in Table 1, page 12. Other statistical information is also shown in Table 1. The average levels of the entire student group are as follows:

3rd grade Reading 4.3

3rd grade Math 4.1

5th grade Reading 6.0

5th grade Math 5.6

Question 3. What are the average achievement levels of the stable student population used in this study?

Answer 3. The average achievement levels are summarized in Table 1, page 12. Other statistical information is also shown in Table 1. The average levels of the stable student group are as follows:

3rd grade Reading 4.4

3rd grade Math 4.1

5th grade Reading 6.0

5th grade Math 5.6

Question 4. What are the average achievement levels of the mobile student population used in this study?

Answer 4. The average achievement levels are summarized in Table 1, page 12. Other statistical information is also shown in Table 1. The average levels of the mobile student group are as follows:

3rd grade Reading 4.4

3rd grade Math 4.1

5th grade Reading 6.0

5th grade Math 5.6

Table 1

Grade Equivalence Scores Averages

Calculated from data taken from raw scores of Appendixes A,B and C

| <u>Entire Group</u> | | <u>Stable Group</u> | |
|------------------------|-----|------------------------|-----|
| 3rd Grade Math Average | 4.1 | 3rd Grade Math Average | 4.1 |
| 3rd Grade Read Average | 4.3 | 3rd Grade Read Average | 4.4 |
| 5th Grade Math Average | 5.6 | 5th Grade Math Average | 5.6 |
| 5th Grade Read Average | 6.0 | 5th Grade Read Average | 6.0 |

Mobile Group

| | |
|------------------------|-----|
| 3rd Grade Math Average | 4.1 |
| 3rd Grade Read Average | 4.2 |
| 5th Grade Math Average | 5.6 |
| 5th Grade Read Average | 6.0 |

Chapter V

Summary and Recommendations

Summary

The major purpose of this study was to determine if any relationship existed between student mobility and achievement test scores. The study investigated the mobility rate of the two grade levels using the definitions of mobile and stable students as defined in the study.

The results of this study, revealed that there was no difference between the scores of the entire student group, the stable student group and the mobile student group. Three of the four scores examined in each group were identical. This coincided with the study done by The New York State Department (1992). That study revealed that it was more important for elementary and middle school students to be in school rather than to be just in one school.

The mobility rate of the students studied was 31 percent over a seven year period. This was much higher than the state yearly averages as reported in the State of Illinois Report Card's Performance Profile published in 1992. However, this also showed a 69 percent stable student group throughout those seven years. With a mobility rate of 20 percent or more each year, one might conclude that the mobility rate would be much higher.

Georgetown - Ridge Farm Community Unit District #4's mobility rate for the 1992 - 93 school year was not much different from those districts of the same size in the general area. The district's yearly mobility rate was no higher than the state average. It seemed that in Vermilion county, the smaller schools had a much lower mobility rate.

Recommendations

After analyzing data from the study, the primary recommendation is to report this information to the district school improvement team and the individual building school improvement teams. Since the research shows that there is little difference between the achievement scores of the mobile and stable students, there would be no reason for the school improvement building teams to disaggregate this subgroup from the entire group under the demographic area of the school improvement plan. A further study of the stable students' scores could be done to get breakdowns of what percentage of students fall one or more grade levels below the norm, what percentage of students fall one-half grade level below norm and so on. This would give the district a better understanding of how the stable students have learned over time. The district might be able to use this information for its individual building school improvement plans.

It might be advisable to replicate this study by using many more grade levels and include testing results from the upper middle school grades and from the high

school grade levels. By doing this, high student mobility in the upper grades could be examined in the study. It might also be advisable to use students from more than one school district. This would increase the population and sample size. It also should be noted that Georgetown - Ridge Farm became a consolidated district during the years that were studied. This may have had an effect on the results. A similar study could be done at a later date to include only the students scores after the consolidation.

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Appendix A

Grade Equivalence Scores for Entire Student Group (Names deleted for privacy of students)

| ID | Grade | Mobile Student | 3rd Math | 3rd Read | 5th Math | 5th Read |
|----|-------|----------------|----------|----------|----------|----------|
| 1 | 7 | no | 34 | 39 | | |
| 2 | 7 | yes | 48 | 51 | 68 | 69 |
| 3 | 7 | no | 40 | 36 | 51 | 62 |
| 4 | 7 | no | 35 | 34 | 39 | 54 |
| 5 | 7 | no | 34 | 23 | 46 | 34 |
| 6 | 7 | no | 40 | 36 | | |
| 7 | 7 | yes | 24 | 25 | 38 | 43 |
| 8 | 7 | no | 47 | 43 | 51 | 51 |
| 9 | 7 | no | 41 | 42 | 55 | 73 |
| 10 | 7 | no | 29 | 23 | 41 | 41 |
| 11 | 7 | yes | 43 | 34 | 49 | 57 |
| 12 | 7 | no | 28 | 30 | 50 | 29 |
| 13 | 7 | no | 32 | 32 | 60 | 43 |
| 14 | 7 | no | 40 | 44 | 54 | 63 |
| 15 | 7 | yes | 67 | 47 | 70 | 69 |
| 16 | 7 | yes | 57 | 61 | 67 | 91 |
| 17 | 7 | yes | | | | |
| 18 | 7 | no | 52 | 55 | | |
| 19 | 7 | no | 50 | 49 | 69 | 73 |
| 20 | 7 | no | 48 | 55 | 73 | 71 |
| 21 | 7 | yes | | | | |
| 22 | 7 | yes | 41 | 53 | 70 | 80 |
| 23 | 7 | no | 50 | 55 | 68 | 65 |
| 24 | 7 | no | | | | |

Grade Equivalence Scores for Entire Student Group (cont.)
(Names deleted for privacy of students)

| ID | Grade | Mobile Student | 3rd Math | 3rd Read | 5th Math | 5th Read |
|----|-------|----------------|----------|----------|----------|----------|
| 25 | 7 | no | 54 | 49 | 76 | 69 |
| 26 | 7 | no | 53 | 53 | 71 | 69 |
| 27 | 7 | no | 50 | 51 | 56 | 75 |
| 28 | 7 | no | 50 | 43 | 72 | 71 |
| 29 | 7 | no | 39 | 61 | 54 | 80 |
| 30 | 7 | yes | | | | |
| 31 | 7 | no | 49 | 55 | 85 | 73 |
| 32 | 7 | yes | 49 | 46 | 65 | 60 |
| 33 | 7 | yes | | | | |
| 34 | 7 | no | 53 | 55 | 74 | 83 |
| 35 | 7 | no | 47 | 61 | 72 | 75 |
| 36 | 7 | no | 61 | 65 | 80 | 80 |
| 37 | 7 | no | 59 | 53 | 67 | 66 |
| 38 | 7 | no | 47 | 58 | 77 | 83 |
| 39 | 7 | no | 34 | 32 | 45 | 57 |
| 40 | 7 | yes | 46 | 46 | 66 | 64 |
| 41 | 7 | no | 46 | 47 | | |
| 42 | 7 | no | 45 | 44 | 64 | 60 |
| 43 | 7 | no | 52 | 53 | 73 | 80 |
| 44 | 7 | no | 50 | 61 | 65 | 75 |
| 45 | 7 | yes | | | | |
| 46 | 7 | no | 59 | 53 | 60 | 65 |
| 47 | 7 | yes | | | | |
| 48 | 7 | no | 35 | 44 | 58 | 57 |
| 49 | 7 | no | 40 | 47 | 48 | 56 |
| 50 | 7 | no | 24 | 17 | 35 | 29 |

Grade Equivalence Scores for Entire Student Group (cont.)
(Names deleted for privacy of students)

| ID | Grade | Mobile Student | 3rd Math | 3rd Read | 5th Math | 5th Read |
|----|-------|----------------|----------|----------|----------|----------|
| 51 | 7 | no | 37 | 39 | 47 | 60 |
| 52 | 7 | no | 45 | 47 | 61 | 62 |
| 53 | 7 | yes | 38 | 42 | | |
| 54 | 7 | no | 37 | 31 | 51 | 51 |
| 55 | 7 | no | 51 | 42 | 59 | 61 |
| 56 | 7 | yes | 35 | 49 | 43 | 46 |
| 57 | 7 | yes | 39 | 48 | 54 | 66 |
| 58 | 7 | no | 34 | 41 | | |
| 59 | 7 | no | 33 | 43 | 47 | 64 |
| 60 | 7 | no | 20 | 40 | 46 | 61 |
| 61 | 7 | no | 53 | 42 | 72 | 64 |
| 62 | 7 | no | 31 | 46 | 51 | 54 |
| 63 | 7 | no | 43 | 39 | 63 | 53 |
| 64 | 7 | no | 31 | 36 | 55 | 53 |
| 65 | 7 | yes | | | 41 | 44 |
| 66 | 7 | no | 37 | 40 | 56 | 56 |
| 67 | 7 | no | 35 | 46 | 49 | 49 |
| 68 | 7 | no | 38 | 39 | 43 | 61 |
| 69 | 7 | no | 43 | 43 | 58 | 48 |
| 70 | 7 | no | 28 | 21 | | |
| 71 | 7 | no | 26 | 41 | 53 | 40 |
| 72 | 7 | no | 40 | 32 | | |
| 73 | 7 | no | 39 | 40 | 60 | 48 |
| 74 | 7 | no | 32 | 51 | 40 | 60 |
| 75 | 7 | no | 32 | 47 | 52 | 65 |
| 76 | 7 | no | 36 | 38 | 48 | 58 |

Grade Equivalence Scores for Entire Student Group (cont.)
(Names deleted for privacy of students)

| ID | Grade | Mobile Student | 3rd Math | 3rd Read | 5th Math | 5th Read |
|-----|-------|----------------|----------|----------|----------|----------|
| 77 | 7 | yes | | | | |
| 78 | 7 | no | 34 | 38 | 52 | 52 |
| 79 | 7 | yes | 29 | 28 | | |
| 80 | 7 | no | 44 | 53 | 57 | 47 |
| 81 | 7 | no | 36 | 44 | 63 | 71 |
| 82 | 7 | no | | | | |
| 83 | 7 | no | 31 | 42 | 61 | 65 |
| 84 | 7 | yes | 30 | 29 | 57 | 60 |
| 85 | 7 | yes | 34 | 35 | 52 | 54 |
| 86 | 7 | yes | 42 | 33 | 53 | 56 |
| 87 | 7 | yes | 37 | 39 | 45 | 51 |
| 88 | 7 | no | 50 | 47 | 71 | 62 |
| 89 | 7 | yes | 61 | 57 | 60 | 71 |
| 90 | 7 | no | 50 | 51 | 56 | 64 |
| 91 | 7 | no | 37 | 37 | 50 | 53 |
| 92 | 7 | yes | 33 | 40 | 45 | 57 |
| 93 | 7 | no | 43 | 31 | | |
| 94 | 7 | no | 34 | 40 | 49 | 58 |
| 95 | 7 | no | 29 | 16 | 38 | 44 |
| 96 | 7 | no | 47 | 55 | 54 | 66 |
| 97 | 7 | no | 27 | 39 | 43 | 34 |
| 98 | 7 | no | 26 | 33 | 50 | 46 |
| 99 | 7 | no | 46 | 42 | 62 | 63 |
| 100 | 7 | no | 43 | 55 | | |
| 101 | 7 | no | 41 | 53 | 51 | 65 |
| 102 | 7 | yes | 34 | 25 | 52 | 59 |

Grade Equivalence Scores for Entire Student Group (cont.)
(Names deleted for privacy of students)

| ID | Grade | Mobile Student | 3rd Math | 3rd Read | 5th Math | 5th Read |
|-----|-------|----------------|----------|----------|----------|----------|
| 103 | 7 | yes | | | | |
| 104 | 8 | yes | 47 | 44 | 52 | 63 |
| 105 | 8 | no | 26 | 24 | 38 | 34 |
| 106 | 8 | no | 47 | 41 | 62 | 66 |
| 107 | 8 | yes | 33 | 36 | 37 | 24 |
| 108 | 8 | yes | 40 | 44 | 43 | 42 |
| 109 | 8 | yes | 45 | 41 | 59 | 59 |
| 110 | 8 | yes | 53 | 44 | 58 | 57 |
| 111 | 8 | yes | | | 45 | 49 |
| 112 | 8 | no | 38 | 34 | 53 | 61 |
| 113 | 8 | no | 41 | 61 | 67 | 65 |
| 114 | 8 | no | 42 | 25 | 53 | 53 |
| 115 | 8 | yes | 54 | 48 | 63 | 64 |
| 116 | 8 | yes | 30 | 31 | 44 | 49 |
| 117 | 8 | no | 31 | 30 | 42 | 56 |
| 118 | 8 | no | 50 | 47 | 57 | 58 |
| 119 | 8 | no | 41 | 44 | 65 | 66 |
| 120 | 8 | no | 31 | 29 | 40 | 47 |
| 121 | 8 | yes | 42 | 31 | 65 | 46 |
| 122 | 8 | yes | | | | |
| 123 | 8 | yes | 38 | 76 | | |
| 124 | 8 | no | 52 | 55 | 70 | 65 |
| 125 | 8 | no | 48 | 61 | 73 | 73 |
| 126 | 8 | yes | 55 | 50 | 74 | 80 |
| 127 | 8 | yes | 25 | 24 | 31 | 40 |
| 128 | 8 | no | 40 | 51 | 61 | 62 |

Grade Equivalence Scores for Entire Student Group (cont.)
(Names deleted for privacy of students)

| ID | Grade | Mobile Student | 3rd Math | 3rd Read | 5th Math | 5th Read |
|-----|-------|----------------|----------|----------|----------|----------|
| 129 | 8 | no | 41 | 31 | 49 | 58 |
| 130 | 8 | no | 30 | 36 | 55 | 57 |
| 131 | 8 | no | 27 | 24 | 57 | 54 |
| 132 | 8 | no | 48 | 49 | 68 | 91 |
| 133 | 8 | no | 33 | 43 | 43 | 53 |
| 134 | 8 | no | 48 | 42 | 63 | 59 |
| 135 | 8 | no | 36 | 37 | 62 | 65 |
| 136 | 8 | yes | | | 84 | 62 |
| 137 | 8 | no | 44 | 53 | 58 | 80 |
| 138 | 8 | no | 54 | 55 | 68 | 62 |
| 139 | 8 | no | 39 | 53 | 58 | 68 |
| 140 | 8 | yes | | | 46 | 50 |
| 141 | 8 | no | 54 | 55 | 72 | 87 |
| 142 | 8 | yes | | | 62 | 76 |
| 143 | 8 | no | 43 | 39 | 49 | 56 |
| 144 | 8 | no | 47 | 40 | 56 | 62 |
| 145 | 8 | no | 47 | 51 | 59 | 62 |
| 146 | 8 | no | 47 | 68 | 70 | 65 |
| 147 | 8 | no | 38 | 29 | 43 | 46 |
| 148 | 8 | yes | 36 | 37 | 55 | 65 |
| 149 | 8 | no | 39 | 49 | 54 | 64 |
| 150 | 8 | no | 31 | 36 | 45 | 48 |
| 151 | 8 | yes | 26 | 22 | 48 | 50 |
| 152 | 8 | yes | | | | |
| 153 | 8 | no | 27 | 47 | 47 | 60 |
| 154 | 8 | no | 38 | 47 | 41 | 61 |

Grade Equivalence Scores for Entire Student Group (cont.)
(Names deleted for privacy of students)

| ID | Grade | Mobile Student | 3rd Math | 3rd Read | 5th Math | 5th Read |
|-----|-------|----------------|----------|----------|----------|----------|
| 155 | 8 | yes | 50 | 53 | 54 | 76 |
| 156 | 8 | no | 55 | 53 | 74 | 75 |
| 157 | 8 | no | 42 | 34 | 57 | 53 |
| 158 | 8 | yes | 38 | 40 | 48 | 60 |
| 159 | 8 | no | 58 | 65 | 68 | 83 |
| 160 | 8 | yes | 24 | 23 | 48 | 48 |
| 161 | 8 | no | 34 | 43 | 54 | 60 |
| 162 | 8 | no | 42 | 51 | 62 | 59 |
| 163 | 8 | no | 41 | 51 | 57 | 73 |
| 164 | 8 | yes | | | | |
| 165 | 8 | no | 48 | 61 | 66 | 63 |
| 166 | 8 | no | 49 | 49 | 60 | 73 |
| 167 | 8 | no | 61 | 65 | 66 | 73 |
| 168 | 8 | yes | 59 | 60 | 60 | 65 |
| 169 | 8 | yes | 41 | 47 | 56 | 43 |
| 170 | 8 | no | 47 | 47 | 58 | 49 |
| 171 | 8 | no | 34 | 33 | 43 | 51 |
| 172 | 8 | no | 51 | 53 | 63 | 69 |
| 173 | 8 | yes | | | 64 | 65 |
| 174 | 8 | no | 44 | 58 | 48 | 68 |
| 175 | 8 | no | 41 | 41 | 47 | 53 |
| 176 | 8 | no | 52 | 46 | 64 | 68 |
| 177 | 8 | no | 43 | 49 | 59 | 46 |
| 178 | 8 | no | 38 | 42 | 50 | 58 |
| 179 | 8 | yes | 38 | 37 | 43 | 50 |
| 180 | 8 | no | 32 | 37 | 41 | 46 |

Grade Equivalence Scores for Entire Student Group (cont.)
(Names deleted for privacy of students)

| ID | Grade | Mobile Student | 3rd Math | 3rd Read | 5th Math | 5th Read |
|-----|-------|----------------|----------|----------|----------|----------|
| 181 | 8 | yes | | | | |
| 182 | 8 | no | 38 | 41 | 55 | 62 |
| 183 | 8 | no | 59 | 58 | 62 | 94 |
| 184 | 8 | no | 38 | 44 | 54 | 65 |
| 185 | 8 | no | 30 | 26 | 40 | 44 |
| 186 | 8 | yes | | | 34 | 39 |
| 187 | 8 | no | 46 | 58 | 60 | 68 |
| 188 | 8 | no | 44 | 39 | 52 | 62 |
| 189 | 8 | no | 49 | 51 | 48 | 59 |
| 190 | 8 | yes | 40 | 24 | 52 | 57 |
| 191 | 8 | yes | 29 | 20 | | |
| 192 | 8 | no | 51 | 40 | 62 | 64 |
| 193 | 8 | no | 37 | 26 | 38 | 38 |
| 194 | 8 | yes | 30 | 25 | 54 | 43 |
| 195 | 8 | yes | 38 | 39 | 45 | 52 |
| 196 | 8 | no | | | | |
| 197 | 8 | no | 48 | 46 | 62 | 88 |
| 198 | 8 | no | 42 | 31 | 52 | 61 |
| 199 | 8 | yes | 39 | 34 | 55 | 54 |
| 200 | 8 | no | 36 | 36 | 42 | 51 |
| 201 | 8 | no | 30 | 28 | 41 | 41 |
| 202 | 8 | no | 47 | 65 | 58 | 75 |
| 203 | 8 | no | 36 | 44 | 41 | 46 |
| 204 | 8 | no | 44 | 43 | 52 | 52 |
| 205 | 8 | yes | 39 | 40 | 45 | 58 |
| 206 | 8 | no | 32 | 40 | 47 | 51 |

Grade Equivalence Scores for Entire Student Group (cont.)
(Names deleted for privacy of students)

| ID | Grade | Mobile Student | 3rd Math | 3rd Read | 5th Math | 5th Read |
|-----|-------|----------------|----------|----------|----------|----------|
| 207 | 8 | yes | 62 | 61 | 73 | 65 |
| 208 | 8 | no | 50 | 49 | 71 | 68 |
| 209 | 8 | yes | 43 | 55 | 58 | 73 |
| 210 | 8 | no | 42 | 49 | 58 | 58 |
| 211 | 8 | yes | | | | |
| 212 | 8 | yes | 32 | 51 | | |
| 213 | 8 | no | 41 | 42 | 52 | 60 |
| 214 | 8 | no | 37 | 31 | 55 | 51 |

Appendix B

Grade Equivalence Scores for Stable Student Group (Names deleted for privacy of students)

| ID | Grade | Mobile Student | 3rd Math | 3rd Read | 5th Math | 5th Read |
|----|-------|----------------|----------|----------|----------|----------|
| 1 | 7 | no | 34 | 39 | | |
| 2 | 7 | no | 40 | 36 | 51 | 62 |
| 3 | 7 | no | 35 | 34 | 39 | 54 |
| 4 | 7 | no | 34 | 23 | 46 | 34 |
| 5 | 7 | no | 40 | 36 | | |
| 6 | 7 | no | 47 | 43 | 51 | 51 |
| 7 | 7 | no | 41 | 42 | 55 | 73 |
| 8 | 7 | no | 29 | 23 | 41 | 41 |
| 9 | 7 | no | 28 | 30 | 50 | 29 |
| 10 | 7 | no | 32 | 32 | 60 | 43 |
| 11 | 7 | no | 40 | 44 | 54 | 63 |
| 12 | 7 | no | 52 | 55 | | |
| 13 | 7 | no | 50 | 49 | 69 | 73 |
| 14 | 7 | no | 48 | 55 | 73 | 71 |
| 15 | 7 | no | 50 | 55 | 68 | 65 |
| 16 | 7 | no | | | | |
| 17 | 7 | no | 54 | 49 | 76 | 69 |
| 18 | 7 | no | 53 | 53 | 71 | 69 |
| 19 | 7 | no | 50 | 51 | 56 | 75 |
| 20 | 7 | no | 50 | 43 | 72 | 71 |
| 21 | 7 | no | 39 | 61 | 54 | 80 |
| 22 | 7 | no | 49 | 55 | 85 | 73 |
| 23 | 7 | no | 53 | 55 | 74 | 83 |
| 24 | 7 | no | 47 | 61 | 72 | 75 |
| 25 | 7 | no | 61 | 65 | 80 | 80 |
| 26 | 7 | no | 59 | 53 | 67 | 66 |

Grade Equivalence Scores for Stable Student Group
(Names deleted for privacy of students)

| ID | Grade | Mobile Student | 3rd Math | 3rd Read | 5th Math | 5th Read |
|----|-------|----------------|----------|----------|----------|----------|
| 27 | 7 | no | 47 | 58 | 77 | 83 |
| 28 | 7 | no | 34 | 32 | 45 | 57 |
| 29 | 7 | no | 46 | 47 | | |
| 30 | 7 | no | 45 | 44 | 64 | 60 |
| 31 | 7 | no | 52 | 53 | 73 | 80 |
| 32 | 7 | no | 50 | 61 | 65 | 75 |
| 33 | 7 | no | 59 | 53 | 60 | 65 |
| 34 | 7 | no | 35 | 44 | 58 | 57 |
| 35 | 7 | no | 40 | 47 | 48 | 56 |
| 36 | 7 | no | 24 | 17 | 35 | 29 |
| 37 | 7 | no | 37 | 39 | 47 | 60 |
| 38 | 7 | no | 45 | 47 | 61 | 62 |
| 39 | 7 | no | 37 | 31 | 51 | 51 |
| 40 | 7 | no | 51 | 42 | 59 | 61 |
| 41 | 7 | no | 34 | 41 | | |
| 42 | 7 | no | 33 | 43 | 47 | 64 |
| 43 | 7 | no | 20 | 40 | 46 | 61 |
| 44 | 7 | no | 53 | 42 | 72 | 64 |
| 45 | 7 | no | 31 | 46 | 51 | 54 |
| 46 | 7 | no | 43 | 39 | 63 | 53 |
| 47 | 7 | no | 31 | 36 | 55 | 53 |
| 48 | 7 | no | 37 | 40 | 56 | 56 |
| 49 | 7 | no | 35 | 46 | 49 | 49 |
| 50 | 7 | no | 38 | 39 | 43 | 61 |
| 51 | 7 | no | 43 | 43 | 58 | 48 |
| 52 | 7 | no | 28 | 21 | | |
| 53 | 7 | no | 26 | 41 | 53 | 40 |

Grade Equivalence Scores for Stable Student Group
(Names deleted for privacy of students)

| ID | Grade | Mobile Student | 3rd Math | 3rd Read | 5th Math | 5th Read |
|----|-------|----------------|----------|----------|----------|----------|
| 54 | 7 | no | 40 | 32 | | |
| 55 | 7 | no | 39 | 40 | 60 | 48 |
| 56 | 7 | no | 32 | 51 | 40 | 60 |
| 57 | 7 | no | 32 | 47 | 52 | 65 |
| 58 | 7 | no | 36 | 38 | 48 | 58 |
| 59 | 7 | no | 34 | 38 | 52 | 52 |
| 60 | 7 | no | 44 | 53 | 57 | 47 |
| 61 | 7 | no | 36 | 44 | 63 | 71 |
| 62 | 7 | no | | | | |
| 63 | 7 | no | 31 | 42 | 61 | 65 |
| 64 | 7 | no | 50 | 47 | 71 | 62 |
| 65 | 7 | no | 50 | 51 | 56 | 64 |
| 66 | 7 | no | 37 | 37 | 50 | 53 |
| 67 | 7 | no | 43 | 31 | | |
| 68 | 7 | no | 34 | 40 | 49 | 58 |
| 69 | 7 | no | 29 | 16 | 38 | 44 |
| 70 | 7 | no | 47 | 55 | 54 | 66 |
| 71 | 7 | no | 27 | 39 | 43 | 34 |
| 72 | 7 | no | 26 | 33 | 50 | 46 |
| 73 | 7 | no | 46 | 42 | 62 | 63 |
| 74 | 7 | no | 43 | 55 | | |
| 75 | 7 | no | 41 | 53 | 51 | 65 |
| 76 | 8 | no | 26 | 24 | 38 | 34 |
| 77 | 8 | no | 47 | 41 | 62 | 66 |
| 78 | 8 | no | 38 | 34 | 53 | 61 |
| 79 | 8 | no | 41 | 61 | 67 | 65 |
| 80 | 8 | no | 42 | 25 | 53 | 53 |

Grade Equivalence Scores for Stable Student Group
(Names deleted for privacy of students)

| ID | Grade | Mobile Student | 3rd Math | 3rd Read | 5th Math | 5th Read |
|-----|-------|----------------|----------|----------|----------|----------|
| 81 | 8 | no | 31 | 30 | 42 | 56 |
| 82 | 8 | no | 50 | 47 | 57 | 58 |
| 83 | 8 | no | 41 | 44 | 65 | 66 |
| 84 | 8 | no | 31 | 29 | 40 | 47 |
| 85 | 8 | no | 52 | 55 | 70 | 65 |
| 86 | 8 | no | 48 | 61 | 73 | 73 |
| 87 | 8 | no | 40 | 51 | 61 | 62 |
| 88 | 8 | no | 41 | 31 | 49 | 58 |
| 89 | 8 | no | 30 | 36 | 55 | 57 |
| 90 | 8 | no | 27 | 24 | 57 | 54 |
| 91 | 8 | no | 48 | 49 | 68 | 91 |
| 92 | 8 | no | 33 | 43 | 43 | 53 |
| 93 | 8 | no | 48 | 42 | 63 | 59 |
| 94 | 8 | no | 36 | 37 | 62 | 65 |
| 95 | 8 | no | 44 | 53 | 58 | 80 |
| 96 | 8 | no | 54 | 55 | 68 | 62 |
| 97 | 8 | no | 39 | 53 | 58 | 68 |
| 98 | 8 | no | 54 | 55 | 72 | 87 |
| 99 | 8 | no | 43 | 39 | 49 | 56 |
| 100 | 8 | no | 47 | 40 | 56 | 62 |
| 101 | 8 | no | 47 | 51 | 59 | 62 |
| 102 | 8 | no | 47 | 68 | 70 | 65 |
| 103 | 8 | no | 38 | 29 | 43 | 46 |
| 104 | 8 | no | 39 | 49 | 54 | 64 |
| 105 | 8 | no | 31 | 36 | 45 | 48 |
| 106 | 8 | no | 27 | 47 | 47 | 60 |
| 107 | 8 | no | 38 | 47 | 41 | 61 |

Grade Equivalence Scores for Stable Student Group
(Names deleted for privacy of students)

| ID | Grade | Mobile Student | 3rd Math | 3rd Read | 5th Math | 5th Read |
|-----|-------|----------------|----------|----------|----------|----------|
| 108 | 8 | no | 55 | 53 | 74 | 75 |
| 109 | 8 | no | 42 | 34 | 57 | 53 |
| 110 | 8 | no | 58 | 65 | 68 | 83 |
| 111 | 8 | no | 34 | 43 | 54 | 60 |
| 112 | 8 | no | 42 | 51 | 62 | 59 |
| 113 | 8 | no | 41 | 51 | 57 | 73 |
| 114 | 8 | no | 48 | 61 | 66 | 63 |
| 115 | 8 | no | 49 | 49 | 60 | 73 |
| 116 | 8 | no | 61 | 65 | 66 | 73 |
| 117 | 8 | no | 47 | 47 | 58 | 49 |
| 118 | 8 | no | 34 | 33 | 43 | 51 |
| 119 | 8 | no | 51 | 53 | 63 | 69 |
| 120 | 8 | no | 44 | 58 | 48 | 68 |
| 121 | 8 | no | 41 | 41 | 47 | 53 |
| 122 | 8 | no | 52 | 46 | 64 | 68 |
| 123 | 8 | no | 43 | 49 | 59 | 46 |
| 124 | 8 | no | 38 | 42 | 50 | 58 |
| 125 | 8 | no | 32 | 37 | 41 | 46 |
| 126 | 8 | no | 38 | 41 | 55 | 62 |
| 127 | 8 | no | 59 | 58 | 62 | 94 |
| 128 | 8 | no | 38 | 44 | 54 | 65 |
| 129 | 8 | no | 30 | 26 | 40 | 44 |
| 130 | 8 | no | 46 | 58 | 60 | 68 |
| 131 | 8 | no | 44 | 39 | 52 | 62 |
| 132 | 8 | no | 49 | 51 | 48 | 59 |
| 133 | 8 | no | 51 | 40 | 62 | 64 |
| 134 | 8 | no | 37 | 26 | 38 | 38 |

Grade Equivalence Scores for Stable Student Group
(Names deleted for privacy of students)

| ID | Grade | Mobile Student | 3rd Math | 3rd Read | 5th Math | 5th Read |
|-----|-------|----------------|----------|----------|----------|----------|
| 135 | 8 | no | | | | |
| 136 | 8 | no | 48 | 46 | 62 | 88 |
| 137 | 8 | no | 42 | 31 | 52 | 61 |
| 138 | 8 | no | 36 | 36 | 42 | 51 |
| 139 | 8 | no | 30 | 28 | 41 | 41 |
| 140 | 8 | no | 47 | 65 | 58 | 75 |
| 141 | 8 | no | 36 | 44 | 41 | 46 |
| 142 | 8 | no | 44 | 43 | 52 | 52 |
| 143 | 8 | no | 32 | 40 | 47 | 51 |
| 144 | 8 | no | 50 | 49 | 71 | 68 |
| 145 | 8 | no | 42 | 49 | 58 | 58 |
| 146 | 8 | no | 41 | 42 | 52 | 60 |
| 147 | 8 | no | 37 | 31 | 55 | 51 |

Appendix C

Mobile Student Population (Names deleted for privacy of students)

| ID | Grade | Mobile Student | 3rd Math | 3rd Read | 5th Math | 5th Read |
|----|-------|----------------|----------|----------|----------|----------|
| 1 | 7 | yes | 48 | 51 | 68 | 69 |
| 2 | 7 | yes | 24 | 25 | 38 | 43 |
| 3 | 7 | yes | 43 | 34 | 49 | 57 |
| 4 | 7 | yes | 67 | 47 | 70 | 69 |
| 5 | 7 | yes | 57 | 61 | 67 | 91 |
| 6 | 7 | yes | | | 75 | 78 |
| 7 | 7 | yes | | | | |
| 8 | 7 | yes | 41 | 53 | 70 | 80 |
| 9 | 7 | yes | | | | |
| 10 | 7 | yes | 49 | 46 | 65 | 60 |
| 11 | 7 | yes | 50 | 52 | 76 | 74 |
| 12 | 7 | yes | 46 | 46 | 66 | 64 |
| 13 | 7 | yes | | | | |
| 14 | 7 | yes | 43 | 48 | 70 | 72 |
| 15 | 7 | yes | 38 | 42 | 62 | 68 |
| 16 | 7 | yes | 35 | 49 | 43 | 46 |
| 17 | 7 | yes | 39 | 48 | 54 | 66 |
| 18 | 7 | yes | | | 41 | 44 |
| 19 | 7 | yes | 46 | 53 | 60 | 68 |
| 20 | 7 | yes | 29 | 28 | | |
| 21 | 7 | yes | 30 | 29 | 57 | 60 |
| 22 | 7 | yes | 34 | 35 | 52 | 54 |
| 23 | 7 | yes | 42 | 33 | 53 | 56 |
| 24 | 7 | yes | 37 | 39 | 45 | 51 |
| 25 | 7 | yes | 61 | 57 | 60 | 71 |

Mobile Student Population (cont.)

(Names deleted for privacy of students)

| ID | Grade | Mobile Student | 3rd Math | 3rd Read | 5th Math | 5th Read |
|----|-------|----------------|----------|----------|----------|----------|
| 26 | 7 | yes | 33 | 40 | 45 | 57 |
| 27 | 7 | yes | 34 | 25 | 52 | 59 |
| 28 | 7 | yes | | | | |
| 29 | 8 | yes | 47 | 44 | 52 | 63 |
| 30 | 8 | yes | 33 | 36 | 37 | 24 |
| 31 | 8 | yes | 40 | 44 | 43 | 42 |
| 32 | 8 | yes | 45 | 41 | 59 | 59 |
| 33 | 8 | yes | 53 | 44 | 58 | 57 |
| 34 | 8 | yes | | | 45 | 49 |
| 35 | 8 | yes | 54 | 48 | 63 | 64 |
| 36 | 8 | yes | 30 | 31 | 44 | 49 |
| 37 | 8 | yes | 42 | 31 | 65 | 46 |
| 38 | 8 | yes | | | | |
| 39 | 8 | yes | 38 | 76 | 60 | 84 |
| 40 | 8 | yes | 55 | 50 | 74 | 80 |
| 41 | 8 | yes | 25 | 24 | 31 | 40 |
| 42 | 8 | yes | 44 | 52 | 84 | 62 |
| 43 | 8 | yes | 48 | 50 | 46 | 50 |
| 44 | 8 | yes | | | 62 | 76 |
| 45 | 8 | yes | 36 | 37 | 55 | 65 |
| 46 | 8 | yes | 26 | 22 | 48 | 50 |
| 47 | 8 | yes | | | | |
| 48 | 8 | yes | 50 | 53 | 54 | 76 |
| 49 | 8 | yes | 38 | 40 | 48 | 60 |
| 50 | 8 | yes | 24 | 23 | 48 | 48 |
| 51 | 8 | yes | | | | |
| 52 | 8 | yes | 59 | 60 | 60 | 65 |

Mobile Student Population (cont.)

(Names deleted for privacy of students)

| ID | Grade | Mobile Student | 3rd Math | 3rd Read | 5th Math | 5th Read |
|----|-------|----------------|----------|----------|----------|----------|
| 53 | 8 | yes | 41 | 47 | 56 | 43 |
| 54 | 8 | yes | | | 64 | 65 |
| 55 | 8 | yes | 38 | 37 | 43 | 50 |
| 56 | 8 | yes | 50 | 66 | 70 | 74 |
| 57 | 8 | yes | | | 34 | 39 |
| 58 | 8 | yes | 40 | 24 | 52 | 57 |
| 59 | 8 | yes | 29 | 20 | | |
| 60 | 8 | yes | 30 | 25 | 54 | 43 |
| 61 | 8 | yes | 38 | 39 | 45 | 52 |
| 62 | 8 | yes | 39 | 34 | 55 | 54 |
| 63 | 8 | yes | 39 | 40 | 45 | 58 |
| 64 | 8 | yes | 62 | 61 | 73 | 65 |
| 65 | 8 | yes | 43 | 55 | 58 | 73 |
| 66 | 8 | yes | | | | |
| 67 | 8 | yes | 32 | 51 | | |