

# Florida Math Outcomes Analysis 2015/16

Grade Levels: 3, 4, 5  
ST Math Program: Gen-4  
Analysis Type: Three-Year  
Treatment-Years: 2013/14, 2014/15, 2015/16  
Baseline-Year: 2012/13  
Subgroup: All

**Jessica Guise**

**MIND** Research Institute

2017-09-13 RLL Version 1.0 (S.A.M.01.12.15) ©2016

## **Abstract**

This analysis covers all grades using ST Math in Florida in 2015/16. It identifies those grades with nominal or better implementation of the ST Math program, and matches them to randomly selected, similar math-performance, comparison grades. The nominal ST Math users are an aggregation of 109 grades, consisting of grades 3, 4, and 5 at 54 schools, with an average baseline of 57% in Satisfactory or Above proficiency levels (refer to Figures 2 and 3 to see how your schools compare to those analyzed in this report). They were matched to 109 similar, randomly selected control grades at 106 schools that never used ST Math. Grade-wise growth in math proficiency was evaluated (i.e. growth in same grade, same school, from 2012/13 to 2015/16) on the percentage proficient, scale scores, and Z-scores of the scale scores (see Section 3.1). Grades 3, 4, and 5 aggregated showed an ST Math effect of 6.96 points at the Satisfactory or Above levels, 4.22 points at the Proficient Level, 3.09 points at the Mastery Level, and Z-score of 0.37.

# Contents

<b>1</b>	<b>Introduction</b>	<b>5</b>
1.1	Background . . . . .	5
1.2	Program Description . . . . .	5
<b>2</b>	<b>Data Collection</b>	<b>6</b>
2.1	Proficiency Levels Definition . . . . .	6
2.2	Treatment Grades Pool and Selection . . . . .	6
2.3	Control Grades Pool and Selection . . . . .	7
<b>3</b>	<b>Data Analysis</b>	<b>8</b>
3.1	Z-scores . . . . .	8
3.2	Percentile Ranking . . . . .	8
3.3	Final Treatment and Control . . . . .	9
3.3.1	ST Math Grade-Aggregated Implementation ( $\geq 85\%$ Enrollment Grades Only) . . . . .	9
3.3.2	Filtering Treatment and Controls . . . . .	10
3.3.3	Match of Controls to Treatment . . . . .	11
3.4	Grade-Aggregated Analysis . . . . .	13
3.5	Grade-Level Analysis . . . . .	17
3.5.1	Grade Level Result Tables . . . . .	17
3.5.2	Grade-Level Analysis of Changes in Math Satisfactory or Above . . . . .	18
3.5.3	Grade-Level Analysis of Changes in FSA Math scale scores . . . . .	19
3.5.4	Grade-Level Analysis of Changes in FSA Z-scores of scale scores . . . . .	20
<b>4</b>	<b>Effect Size</b>	<b>21</b>
<b>5</b>	<b>Findings Summary</b>	<b>21</b>
<b>6</b>	<b>Confounders</b>	<b>21</b>
<b>7</b>	<b>Reference Tables Grouped By School Year</b>	<b>23</b>
<b>8</b>	<b>Lists of Schools</b>	<b>24</b>
8.1	Treatment Schools . . . . .	24
8.2	Control Schools . . . . .	25

## List of Figures

1	Histogram of ST Math Percent Progress for $\geq 85\%$ Enrollment Grades 2015/16	9
2	Baseline Year Density Plots Showing Math Scores Match between TRT and CTRL - 2012/13	11
3	Baseline Year Density Plot Showing Student Need Match between TRT and CTRL	12
4	Change at each Proficiency Level for Grade-Aggregated TRT and CTRL Datasets between 2012/13 and 2015/16	13
5	Changes in FSA Math scale scores and Z-scores (See Section 3.1) for Grade-Aggregated TRT and CTRL datasets between 2012/13 and 2015/16	14
6	Changes in Satisfactory or Above for Grade-Aggregated TRT and CTRL datasets between 2012/13 and 2015/16	15
7	Changes in Percentile Ranking for TRT and CTRL Datasets between 2012/13 and 2015/16	16
8	Changes in Percent of Students at Satisfactory or Above for TRT and CTRL Datasets between 2012/13 and 2015/16	18
9	Changes in Grade-Mean FSA Math scale score for TRT and CTRL Datasets between 2012/13 and 2015/16	19
10	Changes in Grade-Mean FSA Z-score (See Section 3.1) for TRT and CTRL Datasets between 2012/13 and 2015/16	20

## List of Tables

1	Proficiency Level Naming . . . . .	6
2	Descriptive Statistics of ST Math Percent Progress for $\geq 85$ percent Enrollment Grades . . . . .	9
3	Number of ST Math Grades with $\geq 85$ percent Enrollment and with $\geq 50$ percent progress . . . . .	9
4	Treatment Pool Filtering and Controls: Counts of Grades, Schools, and Students	10
5	Matching TRT and CTRL . . . . .	12
6	Yearly Math Proficiency and Counts for TRT and CTRL Grade-Aggregated Datasets . . . . .	13
7	Statistics for the Differential Changes in Math Scores Growth (TRT - CTRL) .	15
8	Grade 3 - Yearly Math Performance and Counts for TRT and CTRL Datasets	17
9	Grade 4 - Yearly Math Performance and Counts for TRT and CTRL Datasets	17
10	Grade 5 - Yearly Math Performance and Counts for TRT and CTRL Datasets	17
11	Statistics for the Differential Changes in Satisfactory or Above, (TRT - CTRL)	18
12	Statistics for the Differential Changes in FSA Math scale scores Growth, (TRT - CTRL) . . . . .	19
13	Statistics for the Differential Changes in FSA Z-scores (See Section 3.1) Growth, (TRT - CTRL) . . . . .	20
14	Cohen's d Effect Size . . . . .	21
15	TRT Grades Detail Sorted by Year . . . . .	23
16	CTRL Grades Detail Sorted by Year . . . . .	23
17	Treatment Schools (TRT Dataset) . . . . .	24
18	Matched Control Schools (CTRL Dataset) . . . . .	25
19	Matched Control Schools (CTRL Dataset) . . . . .	26

# 1 Introduction

## 1.1 Background

This is a quasi-experimental analysis at the grade-mean level. Entire grades represent the units of analysis, and outcome measures are the 3-year changes in grade-mean FSA Satisfactory or Above percentages. The treatment grades used the ST Math program for 3 years, beginning in the 2013/14 school year. The study hypothesis is treatment grades using ST Math will outperform similar matched control grades, using their “business as usual” conditions of instructional content and professional development. The control grades were selected to have similar demographic and math attributes to the treatment grades during the baseline year (2012/13), and did not use ST Math in 2013/14, 2014/15, and 2015/16. The treatment grades’ selection pool was all schools using ST Math in grades 3, 4, and 5 in Florida. The control grades’ pool was all schools not using ST Math in grades 3, 4, and 5 in Florida. This study method measures effectiveness of the ST Math program when nominally implemented.

## 1.2 Program Description

The ST Math program is a supplemental math program covering grade-level Florida math standards. The ST Math content consists of visual representations of math standards, concepts, and procedures, presented to students as “Puzzles” of virtual manipulatives, with which they interact to pose solutions. Each time the student poses a solution, the computer visually animates the Puzzle, diagram, or symbols to show why the posed solution correctly solves, or why it does not solve, the math problem (puzzle). The Puzzles are arranged into sequential groups, called “Levels”. To proceed to the next Level in sequence, the student needs to master his/her current Level. Mastering a Level requires solving 100% of the math problems, or Puzzles correctly. In this way, the program is self-paced. Students must correctly solve approximately 4-12 Puzzles, with only 1 failure and retry allowed, to proceed. Levels are sequenced together into Games and, again, the student must master each Game to get to the next Game in sequence. Games are sequenced into “Learning Objectives” (e.g. ‘Fractions Concepts’). The ST Math curriculum of approximately 20-25 Learning Objectives can be rearranged in a year-long, grade-level syllabus to match district math pacing through the school year.

The Puzzles typically start with concrete representations of the math, without abstract symbols, math vocabulary, or even English words. Gradually, through subsequent Levels or Games, abstractions are introduced. For example, a Puzzle might start with “n” green blocks on the screen, and then at a subsequent Level may represent the quantity with the numeral for “n” (no green blocks anymore). In this way, three things are accomplished: i) language proficiency prerequisites to engage with the program are minimal, ii) non-mathematical distractions (e.g. back-stories for word problems) are minimized or eliminated – thereby reducing load on working memory, and iii) the actual math in the problem can be represented clearly, simply, and unambiguously.

Besides the self-paced progress made by students in their one-to-one environment, the program is designed to be referenced by teachers during their regular math instruction. It is supplemental to core or basal math instruction and instructional materials. As the great majority of grade-level math standards are covered in the ST Math digital curriculum, completion of 100% of the entire ST Math curriculum (i.e. completing every Game) is required to cover all grade-level math standards.

Teachers receive initial training, either face to face or through self-guided online instruction. The training covers account startup, as well as math learning and growth mindset goals, the pedagogical

approach to learning in a visual experiential game, monitoring and intervention of the student 1:1 game play, and connecting of ST Math content to classroom content and pacing.

To achieve nominal progress through the program, there is a time-on-task requirement. While student progress rates through the program vary, MIND Research Institute has found that consistent application of 90 minutes per week throughout the school year is sufficient to get most students through at least half of the ST Math Learning Objectives. Students are recommended to use the program in school for at least two 45-minute sessions per week, or 90 minutes per week, over about 35 weeks. Analyses of ST Math usage have shown that consistently following this schedule throughout the school year is usually sufficient to achieve 50% or more Progress through ST Math content. Progress is a percentage of ST Math content coverage, and is defined as Levels completed by the student, divided by the total number of Levels in the curriculum. In addition, MIND’s historical analyses have shown that it is necessary to complete at least 50% of the program in order to expect significantly higher performance compared to non-users.

## 2 Data Collection

Since this analysis uses grades as the unit of analysis, and states publish grade-mean state standardized test scores, the data for student math outcomes is collected from each state education agency’s research files (retrieved from state websites). The school-level demographic data is also collected from the MDR (Market Data Retrieval, Shelton CT) database. The treatment students use ST Math student accounts served by MIND. Student ST Math usage data is aggregated to grade-level means by MIND.

### 2.1 Proficiency Levels Definition

The following (Table 1) is Florida’s proficiency level descriptions:

Proficiency Level	State Proficiency Level Name
L1	Inadequate
L2	Below Satisfactory
L3	Satisfactory
L4	Proficient
L5	Mastery

Table 1: Proficiency Level Naming

### 2.2 Treatment Grades Pool and Selection

The Treatment grades pool originated with all schools and grades using ST Math in Florida. From these schools, every grade that had used the ST Math program was identified. They comprise the Treatment grades pool for this evaluation of 3-year usage.

Because the analysis uses grade-mean data, such as grade-mean scale scores or grade-mean proficiency level percentages, it is necessary that the program also be a grade-wide treatment, with the great majority of students in each grade receiving treatment. Otherwise, the grade-means reported by the state of 100% of *tested* students would not be valid measures of a smaller fraction

of *treatment* students. MIND’s site implementation requirement is that an entire grade, including all teachers and all classes within that grade, use the ST Math program. We validate how closely this is the case for each individual treatment grade by comparing the number of ST Math student accounts at a grade level to the Florida’s reported enrollment at that grade level. We discard from the Treatment pool any grade with a ratio of ST Math student accounts to reported grade enrollment lower than 85%.

Furthermore, the outcomes measure is a summative year-end test, i.e. Florida’s standardized math assessment (FSA). The math assessment thus covers all the math standards for that entire grade level. Meanwhile, the ST Math program curriculum (arranged into Learning Objectives) is also aligned to Florida math standards. To infer that the ST Math content is having a valid effect on student outcomes on the summative assessment, we discard any grade with grade-mean of ST Math Progress for its students lower than 50% by year-end.

Progress is a percentage, and is defined as Levels completed by the student, divided by the total number of Levels in the grade-level curriculum. Note that student achievement of at least 50% progress in ST Math is accomplished primarily by teacher assignment of computer session time to students. With sufficient time on task, students make progress. The program helps them self-pace through providing real-time informative feedback for each puzzle.

### 2.3 Control Grades Pool and Selection

The control grades are randomly selected from a control pool of schools in Florida. Though they are randomly selected, they are also matched to be similar to the Treatment grades’ math attributes and demographics during the baseline 2012/13 year. The matched attributes include:

- scale score
- student percentages at each math proficiency level
- percentage of students receiving free or reduced lunch (using the demographic data from MDR).

To mitigate the risk of randomly picking a set of Control grades that generates an outlier for effect, a Monte Carlo approach is used to perform many random picks. The control pool’s size is large enough that there are many possible “picks” of closely matched control grades.

One hundred randomly matched picks are made and sets of matched control grades are generated. For each set, the quality of the match as well as the math growth of the potential control set is evaluated. Some picked sets have high average math growth, some have low average math growth. From the set of all picks, a median pick is chosen. This avoids either an unlikely overestimate, or underestimate, of the Control grades’ growth. When multiple median picks exist, the control set with the minimal math score differences in the baseline year is chosen.



### 3 Data Analysis

The set of all schools and grades using ST Math in Florida is evaluated for Enrollment percentage and Progress percentage parameters. A filtered Treatment set (TRT) of all ST Math grades with  $\geq 85\%$  Enrollment and  $\geq 50\%$  Progress is identified. State math assessment data is tabulated. A matching set of Control grades based on baseline year state math assessment is selected.

Changes in math performance, i.e. the difference in math performance of a grade from a baseline year to the final year, are evaluated and tabulated. Statistical tests of the significance of the difference in math performance changes between Treatment grades and Control grades are performed. Finally, a grade-by-grade disaggregation is performed.

#### 3.1 Z-scores

When states change their state assessment throughout the years, they also change the range of possible scale scores achieved on the exam. This makes it difficult to compare changes in grade mean scale scores across years with a different exam. To deal with this issue, a new Z-score is calculated. For each year being analyzed, by grade, a Z-score takes the difference of the grade mean scale score and the mean of all scale scores statewide for that year, and then divides it by the standard deviation of all scale scores statewide for that year. Here is a fictional example to illustrate the calculation of a Z-score for the 2015/16 exam:

$$\begin{aligned} &\text{School A, Grade 3, Mean scale score: } 300 \\ &\text{Average across all schools statewide, Grade 3: } 350 \\ &\text{Standard deviation across all schools statewide, Grade 3: } 30 \\ \text{Z-score} &= ((\text{School A, Grade 3, Mean scale score}) - (\text{Average across all schools, Grade 3})) / (\text{Standard} \\ &\quad \text{deviation across all schools, Grade 3}) \\ \text{Z-score} &= \frac{300 - 350}{30} = -1.67 \end{aligned}$$

The Z-score is calculated for every grade across all years being analyzed, using the full state data set of Florida schools for the averages and standard deviations. The use of Z-scores is a valid statistical method to normalize any dataset and to enable analysis across otherwise uncomparable exams. In this report, we will include both mean scale scores and their accompanying Z-scores.

#### 3.2 Percentile Ranking

These newly calculated z-scores can then be converted into a percentile ranking. Each percentile ranking shows the grade's performance relative to the others in that year and grade. For example, for a specific grade 3, a percentile ranking of 50 shows that this grade 3 performed at the average of all third grades in the state for that testing year.

### 3.3 Final Treatment and Control

#### 3.3.1 ST Math Grade-Aggregated Implementation ( $\geq 85\%$ Enrollment Grades Only)

**ST Math Percent Grade Mean Progress Distribution – 2015/16**

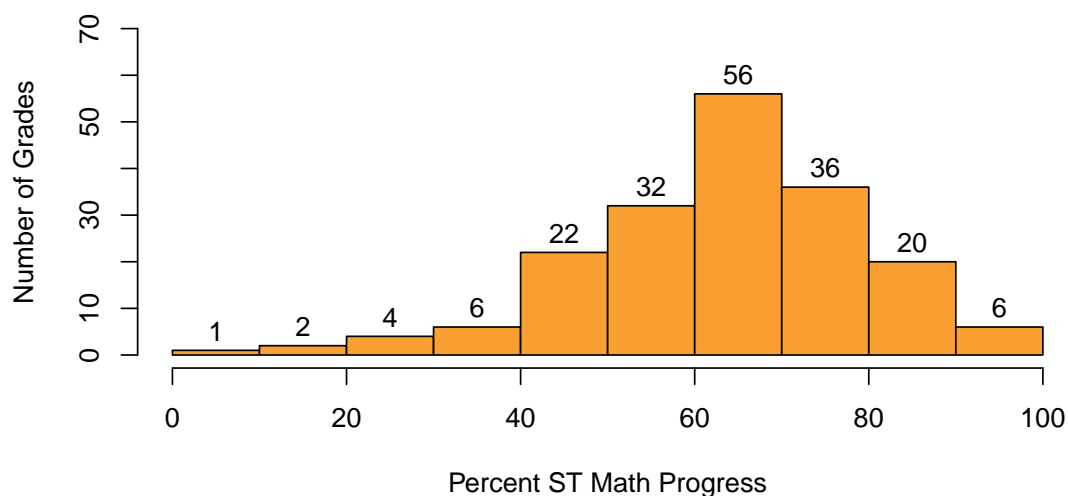


Figure 1: Histogram of ST Math Percent Progress for  $\geq 85\%$  Enrollment Grades 2015/16

For all ST Math grades with Enrollment  $\geq 85\%$ , Figure 1 shows the frequency distribution of grade-average Progress percentage through the program. Note that we will only be using grades with  $\geq 50\%$  Progress as the Treatment Group.

Table 2 provides descriptive statistics of the Progress distribution. Table 3 shows the number of remaining treatment grades after applying enrollment and progress filters.

	Min.	Max.	Average	S.D.
ST Math % Progress	8.5	96.1	63.0	15.9

Table 2: Descriptive Statistics of ST Math Percent Progress for  $\geq 85\%$  Enrollment Grades

Grades with $\geq 85\%$ Enrollment:	135
Grades with in addition $\geq 50\%$ Progress:	109

Table 3: Number of ST Math Grades with  $\geq 85\%$  Enrollment and with  $\geq 50\%$  percent progress

### 3.3.2 Filtering Treatment and Controls

Table 4 shows the total number of grades in the Treatment pool, the number of grades that exceeded the 85% Enrollment figure, and also the 50% Progress filter. Other rows in the table indicate counts of numbers of students (2015/16 from state testing count) and counts of number of schools represented. The number of matched Control (CTRL) grades, students, and schools is also shown.

	Grade 3	Grade 4	Grade 5	Total
ST Math Using Grades	63	61	61	185
ST Math Using Schools	63	61	61	64
ST Math Students	6191	5662	5517	17370
ST Math Grades (Enroll $\geq$ 85%)	31	43	61	135
TRT Grades (Enroll $\geq$ 85% & Prog $\geq$ 50%)	27	36	46	109
TRT Schools (Enroll $\geq$ 85% & Prog $\geq$ 50%)	27	36	46	54
TRT Students (Enroll $\geq$ 85% & Prog $\geq$ 50%)	2341	3126	4525	9992
CTRL Grades	28	36	45	109
CTRL Schools	28	36	45	106
CTRL Students	2840	4246	5286	12372

Table 4: Treatment Pool Filtering and Controls: Counts of Grades, Schools, and Students

### 3.3.3 Match of Controls to Treatment

Figure 2 shows the density plot of the baseline FSA Math scale scores (left plot) and baseline percent students at FSA Satisfactory or Above (right plot) for treatment grades overlayed on control grades, showing the closeness of the match obtained between Treatment and Control sets of grades in the baseline year, 2012/13.

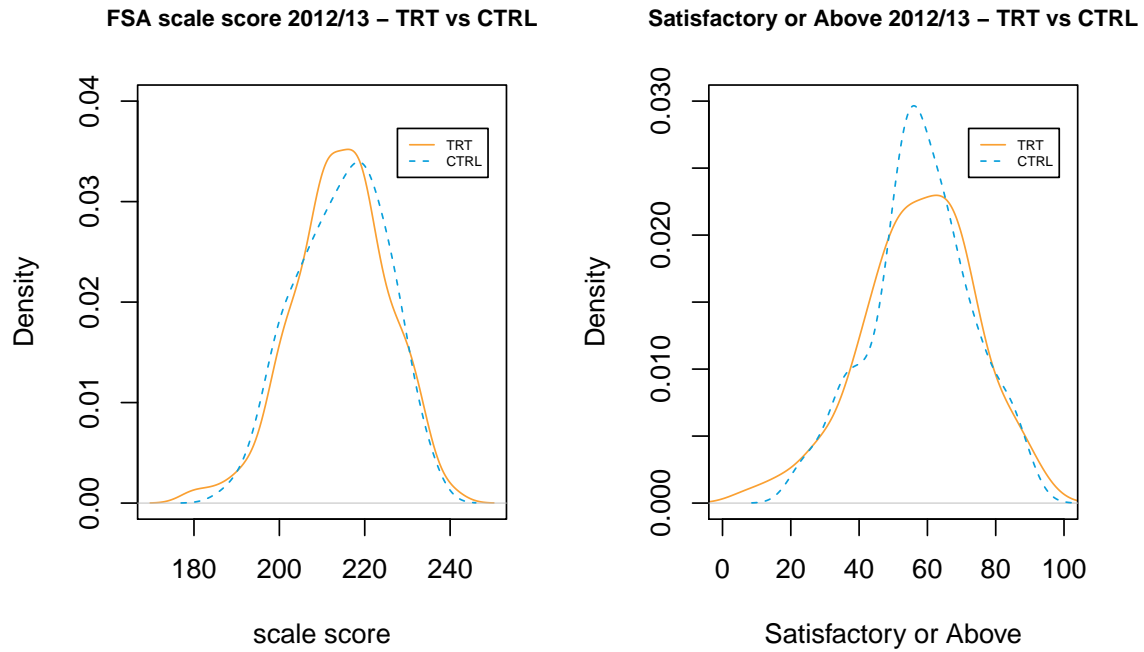


Figure 2: Baseline Year Density Plots Showing Math Scores Match between TRT and CTRL - 2012/13

Similarly, Figure 3 shows the density plot of the percentage of students needing free or reduced lunch for treatment grades overlayed on control grades, showing the closeness of the match obtained between Treatment and Control sets of grades.

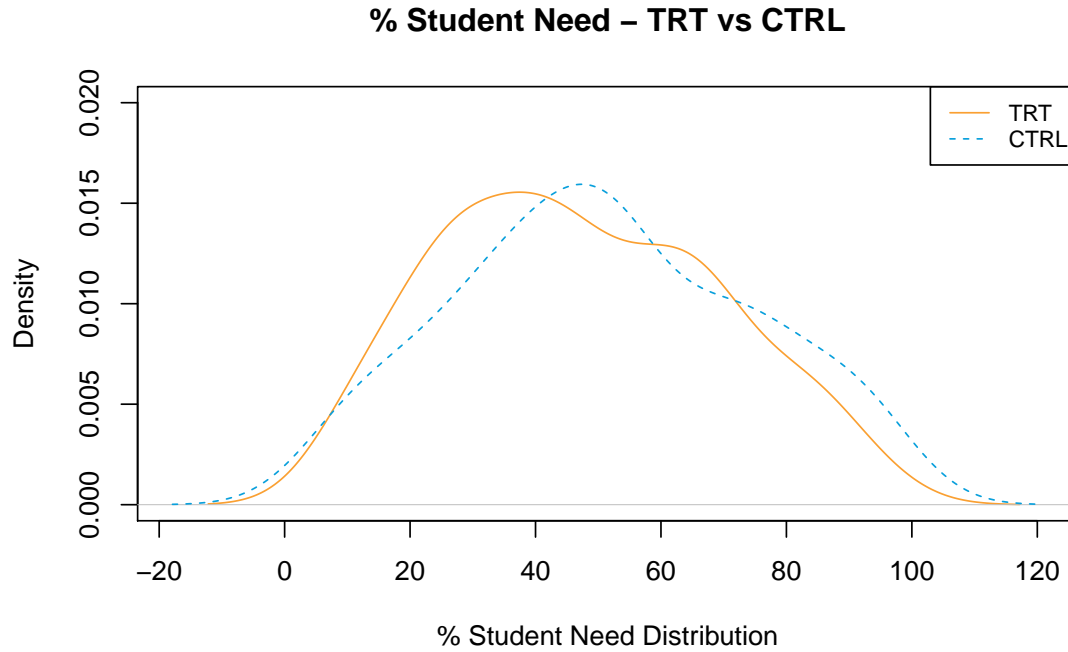


Figure 3: Baseline Year Density Plot Showing Student Need Match between TRT and CTRL

Table 5 shows the difference of the means of Treatment versus Control in the baseline year, with accompanying p-values, for percent Satisfactory or Above, for mean scale score, and for percent of students receiving free or reduced lunch. The large p-values show the differences between the Treatment and Control grades are not statistically significant.

	Mean(TRT)	SD(TRT)	Mean(CTRL)	SD(CTRL)	Estimate	P-Value
Satisfactory or Above - 2012/13	57.42	16.71	57.93	14.86	-0.50	0.81
Scale score - 2012/13	214.33	11.01	214.52	10.42	-0.19	0.89
Percent Free or Reduced Lunch	47.20	21.94	51.03	23.55	-3.83	0.22

Table 5: Matching TRT and CTRL

### 3.4 Grade-Aggregated Analysis

Table 6 shows for both Treatment (TRT) and Control (CTRL) aggregation across grades of scale scores, Z-scores, and proficiency level distributions. The far right column also shows the average ST Math Progress for the TRT set.

	# Grades	# Schools	# Students	Scale score	Z-score	Percentile	L1	L2	L3	L4	L5	Satisfactory or Above	ST Math Per Comp.
TRT.12.13	109	54	10265	214.3	0.11	53.07	17.28	25.33	29.40	17.87	10.15	57.42	-
TRT.13.14	109	54	10180	215.1	0.15	54.19	17.24	22.72	29.30	19.61	11.11	60.03	39.33
TRT.15.16	109	54	10067	319.0	0.57	66.43	16.01	16.87	27.02	24.93	15.28	67.23	68.91
TRT.Delta	-	-	-	104.7	0.46	13.36	-1.27	-8.46	-2.39	7.06	5.14	9.81	-
CTRL.12.13	109	106	12075	214.5	0.16	54.57	17.50	24.67	28.54	18.81	10.58	57.93	-
CTRL.13.14	109	106	12028	214.8	0.13	53.87	17.52	23.40	28.09	19.67	11.36	59.12	-
CTRL.15.16	109	106	12372	315.5	0.24	57.44	20.18	19.09	26.50	21.64	12.62	60.77	-
CTRL.Delta	-	-	-	101.0	0.08	2.87	2.68	-5.58	-2.04	2.83	2.05	2.84	-

Table 6: Yearly Math Proficiency and Counts for TRT and CTRL Grade-Aggregated Datasets

The following chart (Figure 4) shows the changes in percentage of students at each math proficiency level for the grade-aggregated Treatment and Control sets (TRT.delta and CTRL.delta).

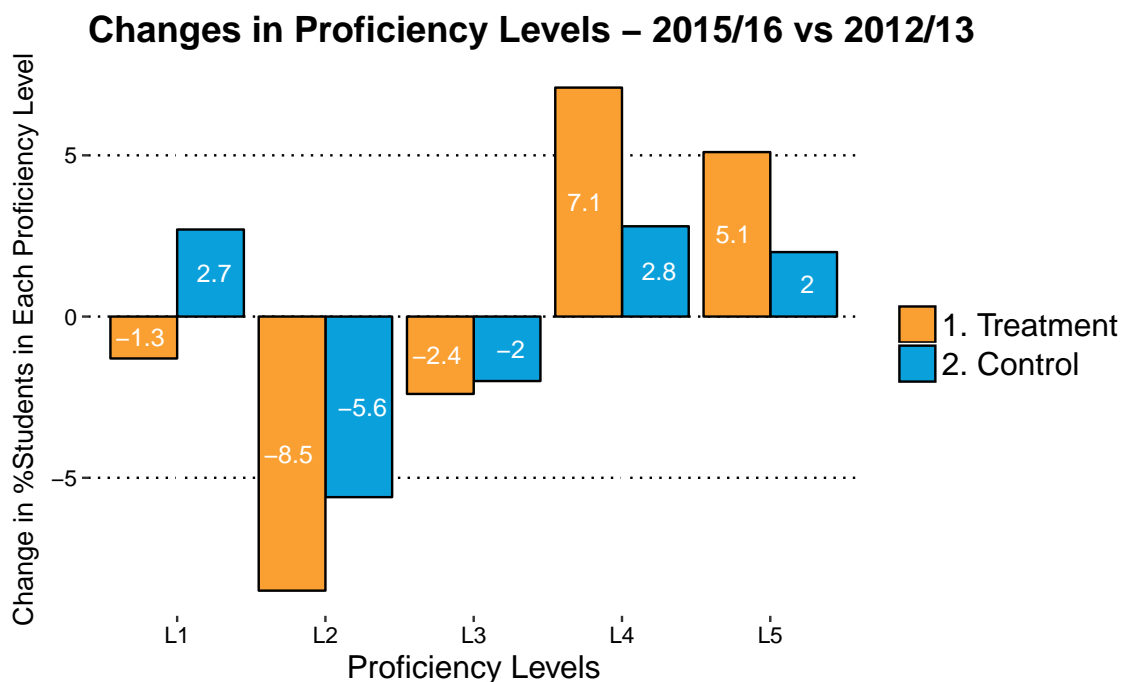


Figure 4: Change at each Proficiency Level for Grade-Aggregated TRT and CTRL Datasets between 2012/13 and 2015/16

Similarly, Figure 5 shows the changes in FSA Math scale scores and changes in Z-scores for the grade-aggregated Treatment and Control sets.

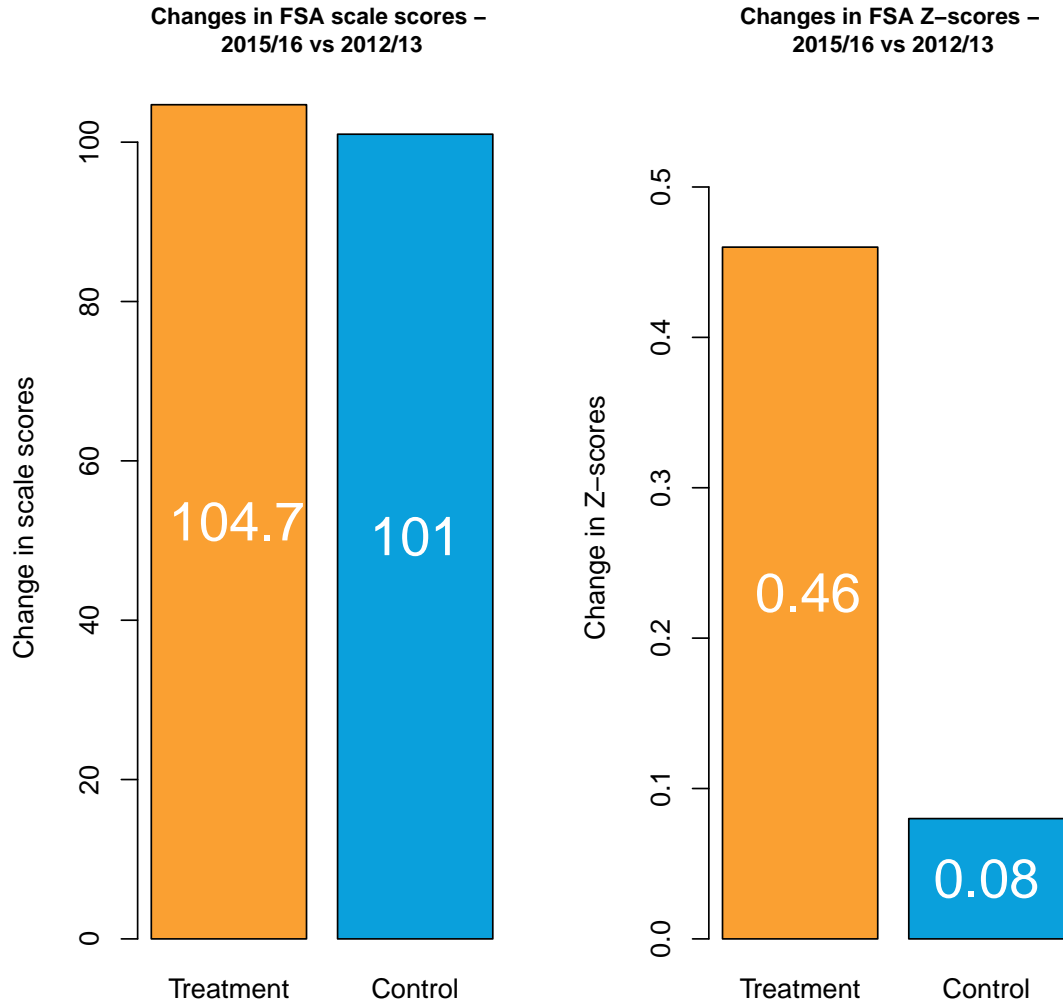


Figure 5: Changes in FSA Math scale scores and Z-scores (See Section 3.1) for Grade-Aggregated TRT and CTRL datasets between 2012/13 and 2015/16

Further, Figure 6 shows the changes in percent of students at FSA Satisfactory or Above for the grade-aggregated Treatment and Control sets.

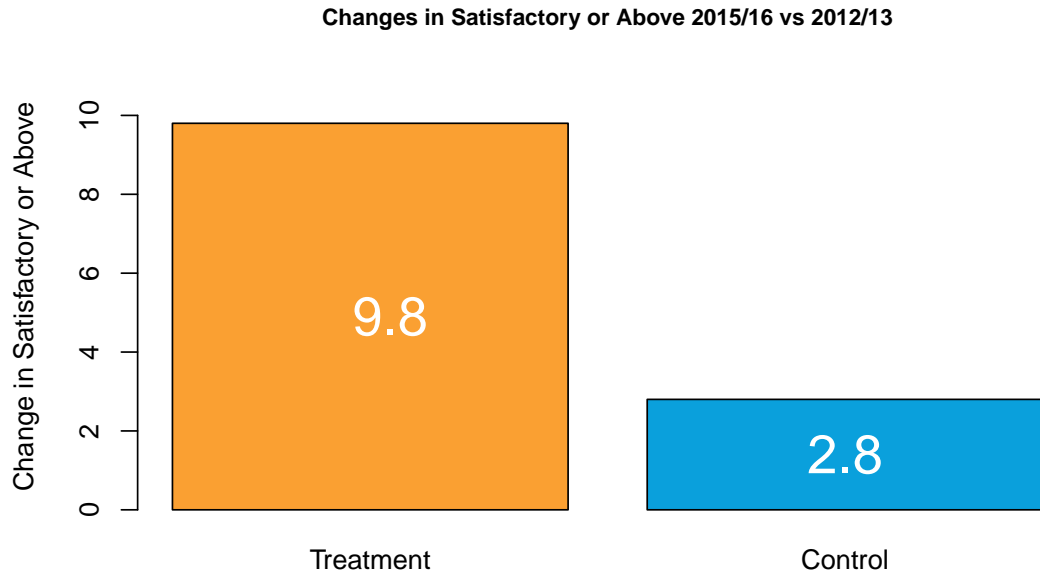


Figure 6: Changes in Satisfactory or Above for Grade-Aggregated TRT and CTRL datasets between 2012/13 and 2015/16

Table 7 shows the statistics for the *differences* in changes between TRT and CTRL (Treatment - Control) for these same FSA math proficiency and scale score changes as in the above figures. <sup>1</sup>

	Estimate	P-Value	Int.Low	Int.High
Satisfactory or Above	6.96	0.00*	3.67	10.26
scale score	3.68	0.00*	2.14	5.21
Z-score	0.37	0.00*	0.21	0.54
L1	-3.94	0.00*	-6.24	-1.65
L2	-2.88	0.01*	-5.07	-0.69
L3	-0.35	0.76	-2.56	1.86
L4	4.22	0.00*	2.01	6.43
L5	3.09	0.00*	1.27	4.92

Table 7: Statistics for the Differential Changes in Math Scores Growth (TRT - CTRL)

<sup>1</sup>\* statistically significant p<0.05



Finally, Figure 7 shows the changes in mean percentile ranking between TRT and CTRL.

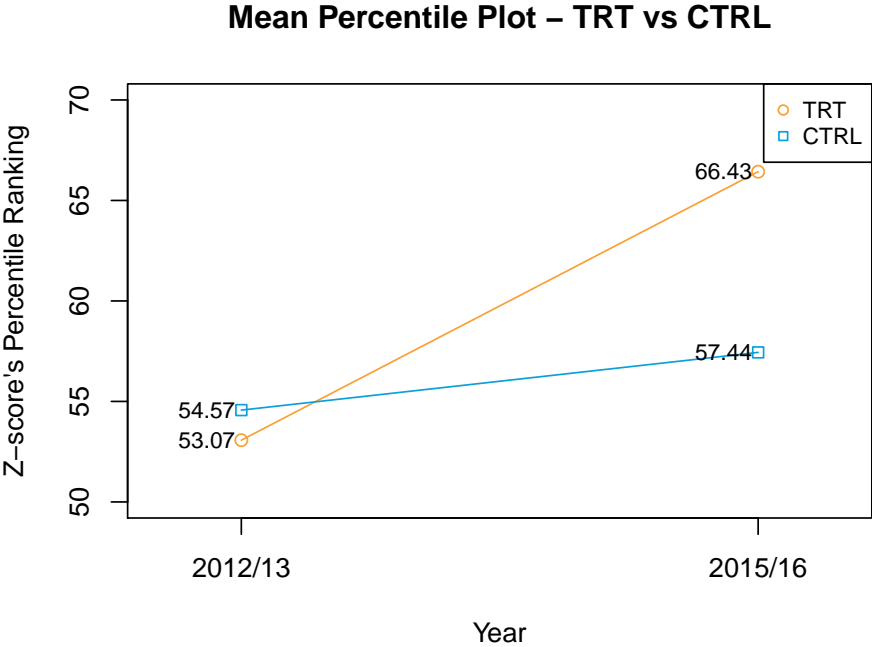


Figure 7: Changes in Percentile Ranking for TRT and CTRL Datasets between 2012/13 and 2015/16

### 3.5 Grade-Level Analysis

#### 3.5.1 Grade Level Result Tables

The following tables (Table 8, 9, and 10) present a disaggregation of results by grade level. The far right column in each table also shows the average ST Math Progress for the TRT set.

	# Grades	# Schools	# Students	Scale score	Z-score	Percentile	L1	L2	L3	L4	L5	Satisfactory or Above	ST Math Per Prog.
TRT.12.13	27	27	2553	201.4	0.08	53.70	15.89	27.93	31.56	14.81	9.89	56.26	-
TRT.13.14	27	27	2459	201.4	0.09	52.67	17.11	24.67	33.52	16.37	8.41	58.30	34.44
TRT.15.16	27	27	2508	306.2	0.61	68.22	12.67	16.63	28.07	28.81	14.00	70.89	70.62
TRT.Delta	-	-	-	104.8	0.53	14.52	-3.22	-11.30	-3.48	14.00	4.11	14.63	-
CTRL.12.13	28	28	2912	202.4	0.20	55.57	15.71	25.93	30.21	17.25	10.89	58.36	-
CTRL.13.14	28	28	2946	201.9	0.16	54.07	16.82	24.68	29.86	18.32	10.46	58.64	-
CTRL.15.16	28	28	2840	302.7	0.22	55.75	18.32	17.82	28.36	23.93	11.54	63.82	-
CTRL.Delta	-	-	-	100.2	0.02	0.18	2.61	-8.11	-1.86	6.68	0.64	5.46	-

Table 8: Grade 3 - Yearly Math Performance and Counts for TRT and CTRL Datasets

	# Grades	# Schools	# Students	Scale score	Z-score	Percentile	L1	L2	L3	L4	L5	Satisfactory or Above	ST Math Per Prog.
TRT.12.13	36	36	3384	214.8	0.03	50.53	15.69	24.00	29.94	20.61	9.81	60.36	-
TRT.13.14	36	36	3426	218.0	0.29	59.03	14.36	19.39	27.25	24.06	14.86	66.17	39.7
TRT.15.16	36	36	3305	319.5	0.66	70.42	15.72	13.92	28.56	24.78	17.08	70.42	69.85
TRT.Delta	-	-	-	104.7	0.63	19.89	0.03	-10.08	-1.39	4.17	7.28	10.06	-
CTRL.12.13	36	36	4046	215.6	0.11	53.00	17.03	22.31	28.92	20.64	11.39	60.94	-
CTRL.13.14	36	36	4040	216.6	0.13	54.19	15.19	21.39	28.47	22.42	12.72	63.61	-
CTRL.15.16	36	36	4246	316.6	0.37	62.17	19.03	17.97	27.06	21.92	14.08	63.06	-
CTRL.Delta	-	-	-	101.0	0.26	9.17	2.00	-4.33	-1.86	1.28	2.69	2.11	-

Table 9: Grade 4 - Yearly Math Performance and Counts for TRT and CTRL Datasets

	# Grades	# Schools	# Students	Scale score	Z-score	Percentile	L1	L2	L3	L4	L5	Satisfactory or Above	ST Math Per Prog.
TRT.12.13	46	46	4328	221.5	0.20	54.70	19.33	24.85	27.72	17.52	10.57	55.80	-
TRT.13.14	46	46	4295	221.0	0.08	51.30	19.57	24.17	28.43	18.04	9.76	56.24	41.91
TRT.15.16	46	46	4254	326.1	0.48	62.26	18.20	19.33	25.20	22.76	14.63	62.59	67.17
TRT.Delta	-	-	-	104.6	0.28	7.57	-1.13	-5.52	-2.52	5.24	4.07	6.78	-
CTRL.12.13	45	45	5117	221.2	0.16	55.20	19.00	25.78	27.20	18.31	9.73	55.24	-
CTRL.13.14	45	45	5042	221.4	0.13	53.49	19.82	24.22	26.69	18.31	10.82	55.82	-
CTRL.15.16	45	45	5286	322.7	0.14	54.71	22.27	20.78	24.91	20.00	12.13	57.04	-
CTRL.Delta	-	-	-	101.4	-0.02	-0.49	3.27	-5.00	-2.29	1.69	2.40	1.80	-

Table 10: Grade 5 - Yearly Math Performance and Counts for TRT and CTRL Datasets

### 3.5.2 Grade-Level Analysis of Changes in Math Satisfactory or Above

Figure 8 shows the difference in the growth of percentages of students at math Satisfactory or Above, for the TRT and CTRL datasets, disaggregated by grade:

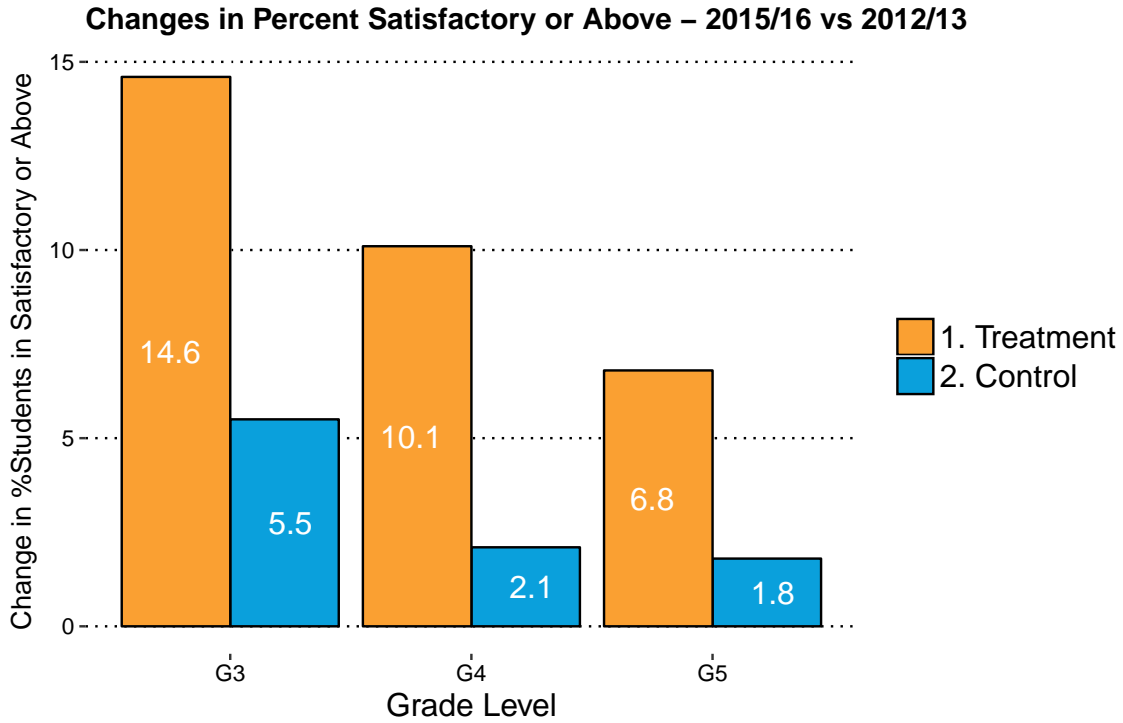


Figure 8: Changes in Percent of Students at Satisfactory or Above for TRT and CTRL Datasets between 2012/13 and 2015/16

Table 11 shows the statistics for the *differences* in changes between TRT and CTRL (Treatment - Control) for these same Satisfactory or Above math proficiency changes as shown in Figure 8.

	Estimate	P-Value	Int.Low	Int.High
Grade 3	9.17	0.01*	2.15	16.18
Grade 4	7.94	0.01*	2.30	13.58
Grade 5	4.98	0.05*	0.05	9.92

Table 11: Statistics for the Differential Changes in Satisfactory or Above, (TRT - CTRL)

### 3.5.3 Grade-Level Analysis of Changes in FSA Math scale scores

Figure 9 shows the changes in the grade-mean math scale scores of students for the TRT and CTRL datasets, disaggregated by grade:

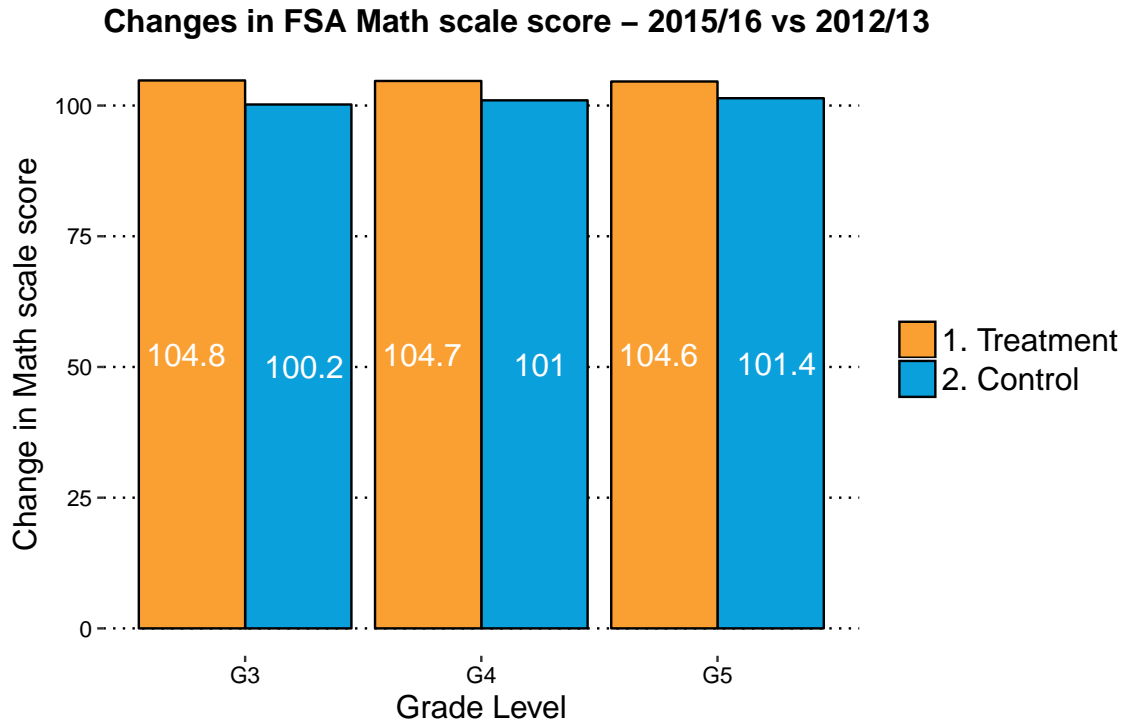


Figure 9: Changes in Grade-Mean FSA Math scale score for TRT and CTRL Datasets between 2012/13 and 2015/16

Table 12 shows the statistics for the differences between TRT and CTRL (Treatment - Control) for these same FSA math scale score changes as shown in Figure 9.

	Estimate	P-Value	Int.Low	Int.High
Grade 3	4.53	0.01*	1.24	7.81
Grade 4	3.64	0.01*	0.84	6.44
Grade 5	3.19	0.01*	0.92	5.46

Table 12: Statistics for the Differential Changes in FSA Math scale scores Growth, (TRT - CTRL)

### 3.5.4 Grade-Level Analysis of Changes in FSA Z-scores of scale scores

Figure 10 shows the changes in the grade-mean Z-scores of students for the TRT and CTRL datasets, disaggregated by grade:

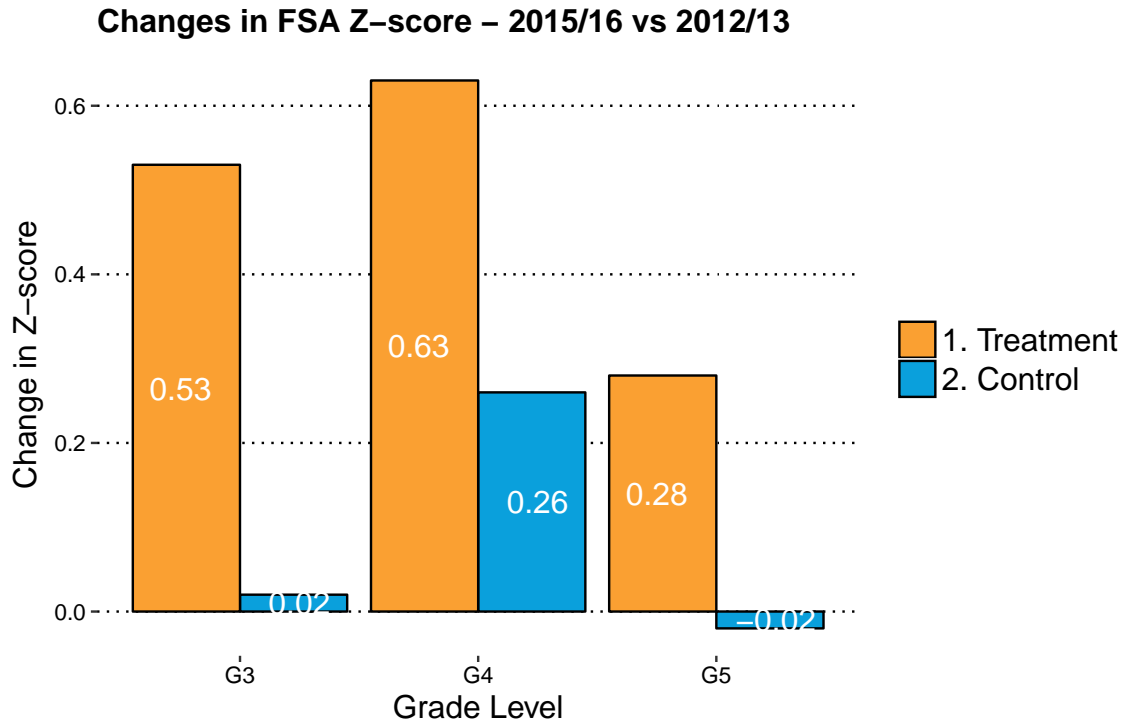


Figure 10: Changes in Grade-Mean FSA Z-score (See Section 3.1) for TRT and CTRL Datasets between 2012/13 and 2015/16

Table 13 shows the statistics for the differences between TRT and CTRL (Treatment - Control) for these same FSA Z-score changes as shown in Figure 10.

	Estimate	P-Value	Int.Low	Int.High
Grade 3	0.51	0.01*	0.14	0.87
Grade 4	0.38	0.02*	0.07	0.68
Grade 5	0.30	0.01*	0.07	0.53

Table 13: Statistics for the Differential Changes in FSA Z-scores (See Section 3.1) Growth, (TRT - CTRL)

## 4 Effect Size

The following table shows the effect sizes for Satisfactory or Above, FSA scale score, and accompanying Z-score.

	Scale score Effect Size	Z-score Effect Size	Satisfactory or Above Effect Size
Grade 3	0.66	0.64	0.66
Grade 4	0.49	0.43	0.54
Grade 5	0.44	0.33	0.32
All Grades	0.35	0.44	0.47

Table 14: Cohen’s d Effect Size

## 5 Findings Summary

Florida grades 3, 4, and 5 using ST Math for the year 2015/16 averaged 63% ST Math Progress. 150/185 grades (81%) averaged covering more than 50% of ST Math content. Statistically significant differences were found in this analysis for both grade-aggregated and individual grade levels. Looking at Table 7, statistically significant differences were found for grade-aggregated Z-score, with an estimate of 0.37 points favorable for the ST Math treatment set, as well as for grade-aggregated Satisfactory or Above proficiency levels, with a 6.96 point favorable differential for the ST Math treatment set. Further, in Table 7, grade-aggregated ST Math treatment set outperformed their matched controls at both the Proficient level and the Mastery level, with statistically significant differences of 4.22 and 3.09, respectively. Referring to Table 11, statistically significant differences were found for grades 3, 4 and 5 Satisfactory or Above proficiency levels, with estimates of 9.17, 7.94 and 4.98 respectively, in favor of the ST Math treatment set. Looking at Table 13, grades 3, 4 and 5 ST math treatment sets outperformed their matched controls for FSA Z-scores with statistically significant differences of 0.51, 0.38 and 0.3, respectively.

## 6 Confounders

Despite best efforts in minimizing confounders to the results of this analysis, there still remain a few input variables that could be significant in affecting differences of state test score outcomes between the Treatment and Control sets. One issue is the lack of randomization of grades chosen to receive the ST Math treatment. Instead of randomized selection, Treatment grades are self-selected. Self-selection can be an indication of districts or schools with a focus on math, an appetite for change, and with a spotlight on math training. Furthermore, not all grades using the ST Math program are chosen for analysis. Each grade must pass two specific filters to be considered for the Treatment set: the first being an enrollment filter of at least 85% of students in each grade using the program, and the second being a progress filter of at least 50% of the program completed on average by students in that grade. These filters might indicate relatively high-functioning schools with a team of relatively effective teachers in that grade, thus resulting in better instruction overall. A mitigation of this possible confounder is our selection of treatment groups on the grade level, rather than the teacher level, so there is no cherry picking of teachers: the full range of teachers in each grade is included. Moreover, the specific teachers may often be the same in the baseline year as in the current year,

so the Treatment growth is not due to teacher differences. Finally, a possible confounder lies in the “business as usual” conditions at the matched control grades chosen for each analysis. It’s unknown whether these control grades used other programs that could affect the comparison of the two sets of grades. The Monte Carlo Method is used to mitigate the possibility of control picks being favorable or unfavorable (see Section 2.3).

## 7 Reference Tables Grouped By School Year

The following tables show grade-level details, grouped by school year and for treatment (Table 15) and controls (Table 16) separately.

	# Grades	# Schools	# Students	Scale score	Z-score	Percentile	L1	L2	L3	L4	L5	Satisfactory or Above	ST Math Per Comp.
Grade 3 (12.13)	27	27	2553	201.4	0.08	53.70	15.89	27.93	31.56	14.81	9.89	56.26	-
Grade 4 (12.13)	36	36	3384	214.8	0.03	50.53	15.69	24.00	29.94	20.61	9.81	60.36	-
Grade 5 (12.13)	46	46	4328	221.5	0.20	54.70	19.33	24.85	27.72	17.52	10.57	55.80	-
All Grades (12.13)	109	54	10265	214.3	0.11	53.07	17.28	25.33	29.40	17.87	10.15	57.42	-
Grade 3 (13.14)	27	27	2459	201.4	0.09	52.67	17.11	24.67	33.52	16.37	8.41	58.30	34.44
Grade 4 (13.14)	36	36	3426	218.0	0.29	59.03	14.36	19.39	27.25	24.06	14.86	66.17	39.7
Grade 5 (13.14)	46	46	4295	221.0	0.08	51.30	19.57	24.17	28.43	18.04	9.76	56.24	41.91
All Grades (13.14)	109	54	10180	215.1	0.15	54.19	17.24	22.72	29.30	19.61	11.11	60.03	39.33
Grade 3 (15.16)	27	27	2508	306.2	0.61	68.22	12.67	16.63	28.07	28.81	14.00	70.89	70.62
Grade 4 (15.16)	36	36	3305	319.5	0.66	70.42	15.72	13.92	28.56	24.78	17.08	70.42	69.85
Grade 5 (15.16)	46	46	4254	326.1	0.48	62.26	18.20	19.33	25.20	22.76	14.63	62.59	67.17
All Grades (15.16)	109	54	10067	319.0	0.57	66.43	16.01	16.87	27.02	24.93	15.28	67.23	68.91

Table 15: TRT Grades Detail Sorted by Year

	# Grades	# Schools	# Students	Scale score	Z-score	Percentile	L1	L2	L3	L4	L5	Satisfactory or Above	ST Math Per Comp.
Grade 3 (12.13)	28	28	2912	202.4	0.20	55.57	15.71	25.93	30.21	17.25	10.89	58.36	-
Grade 4 (12.13)	36	36	4046	215.6	0.11	53.00	17.03	22.31	28.92	20.64	11.39	60.94	-
Grade 5 (12.13)	45	45	5117	221.2	0.16	55.20	19.00	25.78	27.20	18.31	9.73	55.24	-
All Grades (12.13)	109	106	12075	214.5	0.16	54.57	17.50	24.67	28.54	18.81	10.58	57.93	-
Grade 3 (13.14)	28	28	2946	201.9	0.16	54.07	16.82	24.68	29.86	18.32	10.46	58.64	-
Grade 4 (13.14)	36	36	4040	216.6	0.13	54.19	15.19	21.39	28.47	22.42	12.72	63.61	-
Grade 5 (13.14)	45	45	5042	221.4	0.13	53.49	19.82	24.22	26.69	18.31	10.82	55.82	-
All Grades (13.14)	109	106	12028	214.8	0.13	53.87	17.52	23.40	28.09	19.67	11.36	59.12	-
Grade 3 (15.16)	28	28	2840	302.7	0.22	55.75	18.32	17.82	28.36	23.93	11.54	63.82	-
Grade 4 (15.16)	36	36	4246	316.6	0.37	62.17	19.03	17.97	27.06	21.92	14.08	63.06	-
Grade 5 (15.16)	45	45	5286	322.7	0.14	54.71	22.27	20.78	24.91	20.00	12.13	57.04	-
All Grades (15.16)	109	106	12372	315.5	0.24	57.44	20.18	19.09	26.50	21.64	12.62	60.77	-

Table 16: CTRL Grades Detail Sorted by Year



## 8 Lists of Schools

### 8.1 Treatment Schools

The following table lists the treatment schools and grades (after 85% enrollment and 50% progress filtering) used in the analysis.

PID	ID	District	School Name	GRADE
11446281	BON2MT	LEE	BONITA SPRINGS PREP AND FITNESS ACADEMY	5
11127954	FOR2M7	LEE	FORT MYERS PREPARATORY AND FITNESS ACADEMY	3
10007090	RAY2MC	LEE	RAY V. POTTORF ELEMENTARY SCHOOL	3, 5
199443	ANO2LT	PINELLAS	ANONA ELEMENTARY SCHOOL	3, 4, 5
199455	AZA2LN	PINELLAS	AZALEA ELEMENTARY SCHOOL	3, 5
199481	BAU2LT	PINELLAS	BAUDER ELEMENTARY SCHOOL	3, 4, 5
199510	BAY2LM	PINELLAS	BAY VISTA FUNDAMENTAL ELEM.	3, 4, 5
199534	BEL2LS	PINELLAS	BELCHER ELEMENTARY SCHOOL	4, 5
199558	BLA2LM	PINELLAS	BLANTON ELEMENTARY SCHOOL	3, 4, 5
4757516	BRO2OC	PINELLAS	BROOKER CREEK ELEMENTARY SCHL	3, 4, 5
199649	CRO2LU	PINELLAS	CROSS BAYOU ELEMENTARY SCHOOL	4
2202072	CUR2OC	PINELLAS	CURLEW CREEK ELEMENTARY SCHOOL	4, 5
199651	CUR2OD	PINELLAS	CURTIS FUNDAMENTAL ELEMENTARY	3, 5
2854833	CYP2OC	PINELLAS	CYPRESS WOODS ELEMENTARY SCHL	3, 4, 5
199716	EIS2LR	PINELLAS	EISENHOWER ELEMENTARY SCHOOL	5
4290130	FOR2OB	PINELLAS	FOREST LAKES ELEMENTARY SCHOOL	3, 4
4290142	FRO2LS	PINELLAS	FRONTIER ELEMENTARY SCHOOL	5
199754	FUG2LT	PINELLAS	FUGUITT ELEMENTARY SCHOOL	4, 5
3337278	GAR2OD	PINELLAS	GARRISON-JONES ELEMENTARY SCHL	3, 4, 5
3399044	HIG2OC	PINELLAS	HIGHLAND LAKES ELEMENTARY SCHL	3, 4, 5
200078	JOH2LN	PINELLAS	JOHN M. SEXTON ELEMENTARY SCHL	3, 4, 5
3051759	LAK2OC	PINELLAS	LAKE ST. GEORGE ELEM. SCHOOL	4
199845	LAK2LN	PINELLAS	LAKEVIEW FUNDAMENTAL ELEM.	4, 5
199900	LEA2LN	PINELLAS	LEALMAN AVENUE ELEMENTARY SCHOOL	4, 5
2107410	LEI2LS	PINELLAS	LEILA DAVIS ELEMENTARY SCHOOL	4, 5
199924	LYN2LM	PINELLAS	LYNCH ELEMENTARY SCHOOL	3, 4, 5
199948	MAD2LM	PINELLAS	MADEIRA BEACH FUNDAMENTAL K-8	3, 4, 5
4022347	MAR2LU	PINELLAS	MARJORIE KINNAN RAWLINGS ELEM	5
4757528	MCM2LR	PINELLAS	MCMULLEN-BOOTH ELEMENTARY SCHL	5
200004	MOU2LN	PINELLAS	MOUNT VERNON ELEMENTARY SCHOOL	3, 4, 5
200016	NOR2LM	PINELLAS	NORTH SHORE ELEMENTARY SCHOOL	5
200066	NOR2LN	PINELLAS	NORTHWEST ELEMENTARY SCHOOL	4, 5
200092	OAK2LT	PINELLAS	OAKHURST ELEMENTARY SCHOOL	3, 4, 5
200107	OLD2OB	PINELLAS	OLDSMAR ELEMENTARY SCHOOL	3, 4, 5
200119	ORA2LT	PINELLAS	ORANGE GROVE ELEMENTARY SCHOOL	3, 4, 5
200169	PAS2LN	PINELLAS	PASADENA FUNDAMENTAL ELEM.	3, 4
200171	PER2LN	PINELLAS	PERKINS ELEMENTARY SCHOOL	4, 5
200195	PIN2LU	PINELLAS	PINELLAS CENTRAL ELEM. SCHOOL	5
200224	PLU2LS	PINELLAS	PLUMB ELEMENTARY SCHOOL	4, 5
200248	RID2LT	PINELLAS	RIDGECREST ELEMENTARY SCHOOL	4, 5
200274	SAF2OD	PINELLAS	SAFETY HARBOR ELEMENTARY SCHOOL	3, 4, 5
200303	SAN2OD	PINELLAS	SAN JOSE ELEMENTARY SCHOOL	4, 5
3399068	SAW2LM	PINELLAS	SAWGRASS LAKE ELEMENTARY SCHL	3
200597	SEV2LM	PINELLAS	SEVENTY-FOURTH ST. ELEMENTARY	4
200341	SHO2LM	PINELLAS	SHORE ACRES ELEMENTARY SCHOOL	5
200365	SKY2LS	PINELLAS	SKYCREST ELEMENTARY SCHOOL	5
3011890	SOU2LT	PINELLAS	SOUTHERN OAK ELEMENTARY SCHOOL	5
200420	STA2LT	PINELLAS	STARKEY ELEMENTARY SCHOOL	3, 4, 5
200432	SUN2OC	PINELLAS	SUNSET HILLS ELEMENTARY SCHOOL	3, 4, 5
2897029	SUT2OC	PINELLAS	SUTHERLAND ELEMENTARY SCHOOL	3, 5
200456	TAR2OC	PINELLAS	TARPON SPRINGS ELEMENTARY SCHOOL	5
200470	TAR2OD	PINELLAS	TARPON SPRINGS FUNDAMENTAL ELE	3, 4, 5
200547	WAL2LT	PINELLAS	WALSINGHAM ELEMENTARY SCHOOL	4
200559	WES2LN	PINELLAS	WESTGATE ELEMENTARY SCHOOL	5

Table 17: Treatment Schools (TRT Dataset)

## 8.2 Control Schools

The following tables list the control schools and grades (matched control grades to treatment grades) used in the analysis.

PID	District	School Name	GRADE
181252	ALACHUA	IDYLWILD ELEMENTARY SCHOOL	5
181317	ALACHUA	MARJORIE KINNAN RAWLINGS ELEM	3
4012548	BAY	TOMMY SMITH ELEMENTARY SCHOOL	4
4811954	BREVARD	IMAGINE SCHOOLS AT WEST MELBOURNE	5
182012	BREVARD	IMPERIAL ESTATES ELEM. SCHOOL	4
2191083	BREVARD	JOHN F. TURNER, SENIOR ELEMENTARY SCHOOL	4
4915653	BREVARD	ROBERT L. STEVENSON ELEMENTARY SCHOOL	3
10907189	BROWARD	BEN GAMLA CHARTER SCHOOL SOUTH BROWARD	5
2107903	BROWARD	GRIFFIN ELEMENTARY SCHOOL	3
5099410	BROWARD	MANATEE BAY ELEMENTARY SCHOOL	4
183341	BROWARD	ORIOLE ELEMENTARY SCHOOL	5
183767	BROWARD	PLANTATION PARK ELEMENTARY	5
3400289	BROWARD	QUIET WATERS ELEMENTARY SCHOOL	5
1546708	BROWARD	RAMBLEWOOD ELEMENTARY SCHOOL	3
5183528	BROWARD	SILVER SHORES ELEMENTARY SCHL	3
1340009	BROWARD	WESTCHESTER ELEMENTARY SCHOOL	3
4447955	CLAY	MCRAE ELEMENTARY SCHOOL	5, 3
11447209	CLAY	PLANTATION OAKS ELEMENTARY SCHOOL	5
4285202	CLAY	TYNES ELEMENTARY SCHOOL	3
185143	COLUMBIA	SUMMERS ELEMENTARY SCHOOL	5
11128271	DADE	AVENTURA WATERWAYS K-8 CENTER	5
186501	DADE	CORAL WAY K-8 CENTER	3
186941	DADE	FRANK CRAWFORD MARTIN K-8 CENTER	4
11453521	DADE	GATEWAY ENVIRONMENTAL K-8 LEARNING CENTER	5
187397	DADE	HOWARD DRIVE ELEMENTARY SCHOOL	4
4036269	DADE	IRVING & BEATRICE PESKOE K-8 CENTER	4
186226	DADE	MORNINGSIDE K-8 ACADEMY	4
187464	DADE	PALMETTO ELEMENTARY SCHOOL	5
4021288	DADE	PHYLLIS R. MILLER ELEM. SCHOOL	5
187593	DADE	WHISPERING PINES ELEM. SCHOOL	3
188717	DESOTO	NOCATEE ELEMENTARY SCHOOL	4
188834	DUVAL	ARLINGTON HEIGHTS ELEMENTARY SCHOOL	3
3401374	DUVAL	CARTER G. WOODSON ELEM. SCHOOL	5
2130089	DUVAL	CROWN POINT ELEMENTARY SCHOOL	4
11446231	DUVAL	GLOBAL OUTREACH CHARTER ACADEMY	4
189474	DUVAL	LORETTO ELEMENTARY SCHOOL	4
189486	DUVAL	LOUIS S. SHEFFIELD ELEMENTARY SCHOOL	5
10027260	DUVAL	NEW BERLIN ELEMENTARY SCHOOL	5
189709	DUVAL	PARKWOOD HEIGHTS ELEMENTARY SCHOOL	3
189890	DUVAL	SAN JOSE ELEMENTARY SCHOOL	5
189905	DUVAL	SAN MATEO ELEMENTARY SCHOOL	4
189967	DUVAL	SOUTHSIDE ESTATES ELEM. SCHOOL	4
4922632	ESCAMBIA	BLUE ANGELS ELEMENTARY SCHOOL	5
190801	ESCAMBIA	PINE MEADOW ELEMENTARY SCHOOL	3
3388473	GILCHRIST	TRENTON ELEMENTARY SCHOOL	5
4870912	HERNANDO	CHOCACHATTI ELEMENTARY SCHOOL	3
2180682	HILLSBOROUGH	CLAYWELL ELEMENTARY SCHOOL	4
4017275	HILLSBOROUGH	LITHIA SPRINGS ELEM. SCHOOL	5
2855722	HILLSBOROUGH	LOPEZ ELEMENTARY SCHOOL	4
192524	HILLSBOROUGH	MANGO ELEMENTARY SCHOOL	5
3252616	HILLSBOROUGH	MANISCALCO ELEMENTARY SCHOOL	4
5262289	HILLSBOROUGH	NELSON ELEMENTARY SCHOOL	5
4811411	HILLSBOROUGH	RAMPELLO K-8 MAGNET SCHOOL	4
192859	HILLSBOROUGH	SEFFNER ELEMENTARY SCHOOL	5
10902608	HILLSBOROUGH	SUMMERFIELD CROSSINGS ELEMENTARY SCHOOL	4

Table 18: Matched Control Schools (CTRL Dataset)

PID	District	School Name	GRADE
5092773	INDIAN RIVER	LIBERTY MAGNET SCHOOL	4
193592	JACKSON	RIVERSIDE ELEMENTARY SCHOOL	3
4916308	LAKE	ROUND LAKE ELEMENTARY SCHOOL	5
194132	LEE	BONITA SPRINGS ELEMENTARY SCHOOL	3
3396169	LEE	COLONIAL ELEMENTARY SCHOOL	4
194211	LEE	EDISON PARK CREATIVE AND EXPRESSIVE ARTS	3
11818438	LEE	GATEWAY CHARTER ELEMENTARY SCHOOL	4
3251337	LEON	BUCK LAKE ELEMENTARY SCHOOL	4
194558	LEON	CHAIRES ELEMENTARY SCHOOL	3
3008726	LEON	SPRINGWOOD ELEMENTARY SCHOOL	4
4011453	LEVY	WILLISTON ELEMENTARY SCHOOL	5
3050767	MANATEE	BRADEN RIVER ELEMENTARY SCHOOL	5
4915433	MANATEE	KINNAN ELEMENTARY SCHOOL	3
195203	MANATEE	MYAKKA CITY ELEMENTARY SCHOOL	3
11134294	MARTIN	CITRUS GROVE ELEMENTARY	4
4287858	MARTIN	FELIX A WILLIAMS ELEM SCHOOL	5
5070775	MONROE	BIG PINE ACADEMY	3
195904	MONROE	KEY LARGO SCHOOL	4
196154	OKALOOSA	BAKER SCHOOL	4
196221	OKALOOSA	DESTIN ELEMENTARY SCHOOL	3
3047801	OKEECHOBEE	EVERGLADES ELEMENTARY SCHOOL	5
4757279	ORANGE	LAKE WHITNEY ELEMENTARY	5
197304	ORANGE	PRINCETON ELEMENTARY	5
10974405	ORANGE	SUNSET PARK ELEMENTARY	4
11076800	ORANGE	WESTBROOKE ELEMENTARY	5, 4
2225933	OSCEOLA	HICKORY TREE ELEMENTARY SCHOOL	4
2126090	OSCEOLA	REEDY CREEK ELEMENTARY SCHOOL	5
198061	OSCEOLA	THACKER AVENUE ELEM FOR INTERNATIONAL STUDIES	5
4950562	PALM BEACH	BRIGHT FUTURES ACADEMY	3
5102316	PALM BEACH	CROSSPOINTE ELEMENTARY SCHOOL	3
5272806	PALM BEACH	EQUESTRIAN TRAILS ELEMENTARY	3
4755582	PALM BEACH	GOLDEN GROVE ELEMENTARY SCHOOL	5
4749090	PASCO	CHESTER W. TAYLOR, JR. ELEMENTARY SCHOOL	5
3328605	PASCO	DR. MARY GIELLA ELEMENTARY SCHOOL	5
2177128	PASCO	MOON LAKE ELEMENTARY SCHOOL	5
5346938	PINELLAS	PLATO ACADEMY CLEARWATER	5
11557749	PINELLAS	PLATO ACADEMY LARGO CHARTER SCHOOL	3
201230	POLK	CLEVELAND COURT ELEM. SCHOOL	5
203288	SARASOTA	EMMA E. BOOKER ELEMENTARY SCHOOL	3
203343	SARASOTA	FRUITVILLE ELEMENTARY SCHOOL	4
3333533	SARASOTA	TAYLOR RANCH ELEMENTARY SCHOOL	5
4944276	SEMINOLE	BENTLEY ELEMENTARY SCHOOL	4
203666	SEMINOLE	GENEVA ELEMENTARY SCHOOL	4
1830248	SEMINOLE	WEKIVA ELEMENTARY SCHOOL	4
11130444	ST. JOHNS	LIBERTY PINES ACADEMY	3, 5
10005274	ST. JOHNS	TIMBERLIN CREEK ELEMENTARY SCHOOL	5
4753962	VOLUSIA	PATHWAYS ELEMENTARY SCHOOL	5
3047019	WALTON	FREEPORT ELEMENTARY SCHOOL	4
204957	WALTON	MAUDE SAUNDERS ELEMENTARY SCHOOL	5
204971	WALTON	WEST DEFUNIAK ELEMENTARY SCHOOL	5
205030	WASHINGTON	KATE M. SMITH ELEMENTARY SCHOOL	4

Table 19: Matched Control Schools (CTRL Dataset)