THE UNIVERSITY OF MEMPHIS. | Center for Research in Educational Policy

Supplemental Educational Services in the State of Alabama

2010-2011

Student Achievement Analyses

Todd Zoblotsky

Haixia Qian

Bryan Winter

Kathryn E. Murphy

The University of Memphis

April 2012

Dreamers. Thinkers. Doers.

Table of Contents

Supplemental Educational Services in the State of Alabama
2010-2011 Student Achievement Analyses

Executive Summary

Introduction

Supplemental Educational Services (SES) is a component of Title I of the Elementary and Secondary Education Act (ESEA), as reauthorized by the *No Child Left Behind Act of 2001* (NCLB), that provides extra academic assistance for eligible children. The purpose of this study was to address the federal evaluation/monitoring requirement for the state of Alabama by determining the impact of provider services on student achievement outcomes.

Methodology

Students in grades 4-8 who received SES were compared to matched control students, who were similar to SES students in terms of demographics, but did not participate in SES, based on two years (2009-10 and 2010-11) of Alabama Reading and Mathematics Test (ARMT) scale scores. Statistical analyses were conducted on ARMT scale scores at both the state-level (i.e., all providers combined) and the individual provider-level. SES students had to have a minimum of 12 tutoring hours and have completed at least 50% of their contracted hours in order to be included in the analyses. Based on their prior-year (2009-10) achievement scale scores, SES and matched control students were divided into three blocks or groups (i.e., Lowest, Middle, and Highest) for the state-level and provider-level analyses in both Reading and Math. Analysis of Covariance (ANCOVA) was then used to assess the impact of SES Reading and Math providers on student achievement on the 2010-11 ARMT separately for each block, after controlling for prior-year achievement and applying the Benjamini-Hochberg correction for multiple comparisons.

The final state-level matched-samples for Reading ($N = 802$) and Math ($N = 831$) contained equal numbers of SES and control group students. For the provider-level analyses, only providers with 10 or more students available to analyze, after parameters for including students were applied, were initially evaluated. The final provider-level matched-samples for Reading ($N = 783$) and Math ($N = 813$) contained equal numbers of SES and control group students.

Separate descriptive (non-statistical) analyses of ARMT proficiency were conducted for students designated as receiving special education or English Language Learner (ELL) services, in addition to an analysis of proficiency rates for students who completed the Alabama High School Graduation Exam (AHSGE). The descriptive analyses looked at the effect of SES participation on the percentage of students scoring Proficient or Advanced in Reading or Math on the ARMT and AHSGE, and were conducted at both the state and individual provider-level. The AHSGE descriptive analyses included comparisons to a control group but did not take prior-year achievement into account.

Results

The results of the statistical and descriptive analyses of ARMT and AHSGE scores for SES participants in 2010-11 are outlined below. Statistical significance levels for providers were only reported for blocks in which a provider had at least 10 students available for analysis.

State-Level

- For the ARMT state-level analyses, after controlling for prior-year achievement and applying the Benjamini-Hochberg correction for multiple comparisons, there was only a statistically significant difference between SES and control students in average 2010-11 ARMT Reading scale scores in the highest scoring block, with SES students outperformed by control students.
- None of the differences in the remaining scoring blocks in either Reading or Math was statistically significant.

Provider-Level

- For the ARMT provider-level analyses, after controlling for prior-year achievement applying the Benjamini-Hochberg correction for multiple comparisons, there were no statistically significant differences in achievement for the majority of providers, meaning that a majority of SES providers served SES students who scored similarly to non-SES (control) students on the 2010-11 ARMT.
- Statistically significant differences were found for two Reading providers in the lowest scoring block. Of these two providers, one had a large positive adjusted effect size, meaning that the SES students scored statistically significantly higher than control students did. However, the other provider in the lowest scoring block had a large negative effect size, indicating that the adjusted mean scale score was statistically significantly lower for the SES students compared to controls.
- A statistically significant difference was found for only one Math provider: in the middle scoring block, with a large positive adjusted effect size, meaning that the SES students had a statistically significant higher adjusted mean scale score than the control students.

For the descriptive analyses of students designated as receiving special education or ELL services, and for the 11th grade AHSGE descriptive analyses, without taking hours attended into account:

- At the state level (i.e., all providers combined),
    - Approximately a quarter of students designated as receiving special education services who participated in SES tutoring in either Reading or Math scored Proficient or Advanced on the 2010-11 ARMT;
    - About 40% of students designated as receiving ELL services who participated in Reading tutoring scored Proficient or Advanced on the ARMT Reading test, while about half of students designated as receiving ELL services who participated in Math tutoring scored Proficient or Advanced on the ARMT Math test;
    - AHSGE outcomes slightly favored control students in both Reading and Math.
- At the provider level, the number and percentage of providers with at least 10 students available to analyze having at least 50% of students score Proficient or Advanced were as follows:
    - Only 2 of 3 (66%) providers serving students designated as receiving ELL services on the ARMT in Math.
    - All providers serving 11th grade students in both Reading ($N = 5$) and Math ($N = 6$) on the AHSGE.

For the descriptive analyses of students designated as receiving special education or ELL services, and for the 11th grade AHSGE descriptive analyses, for students who had a minimum of 12 hours of tutoring:

- At the state level,
    - Compared to those with any hours of attendance, a slightly larger percentage of students designated as receiving special education services or ELL services who attended SES tutoring scored Proficient or Advanced on both the ARMT Reading and Math tests. However, while higher, the differences were small.
- At the provider level, the number and percentage of providers with at least 10 students available to analyze having at least 50% of students score Proficient or Advanced were as follows:
    - Only 1 of 6 providers in Math (17%) serving students designated as receiving special education services on the ARMT in Math.
    - Only 2 of 3 (66%) providers serving students designated as receiving ELL services on the ARMT in Math.

Therefore, based on the statistical analyses, it appears that for the most part, students who attended SES services are scoring similarly to control students who did not attend SES tutoring. However, these results should be interpreted with caution. For ARMT statistical outcomes, small sample sizes, which reduces the ability (power) to detect statistical significance and the reliability of outcomes in general, was a limiting factor for many providers. Only about 12% of all students who participated in SES tutoring in the state of Alabama were able to be included in the statistical analyses (e.g., were in Grades 4-8 and had two years of test data available). Therefore, the results from the statistical analyses may not be representative of the achievement of the larger total population of students in the state of Alabama who participated in SES tutoring. More pervasive and substantive issues are the degree to which state assessments have adequate sensitivity to detect the contribution of only a limited number of hours of tutoring during an entire school year (the average number of hours attended for students in the state of Alabama was less than 21 hours). At one hour per week, that is approximately four weeks of tutoring out of an entire school year. Therefore, it is unsurprising that more statistically significant differences in achievement between SES and control students were not found.

**Supplemental Educational Services in the State of Alabama
2010-2011 Student Achievement Analysis**

Evaluation Report

Introduction

Supplemental Educational Services (SES) is a component of Title I of the Elementary and Secondary Education Act (ESEA), as reauthorized by the *No Child Left Behind Act of 2001* (NCLB), that provides extra academic assistance for eligible children. Specifically, students who are attending Title I schools that are in their second year or more of school improvement (i.e., have not made adequate yearly progress or "AYP" for three or more years), are in corrective action or are in restructuring status are eligible to receive these services. The purpose of this study was to address the federal evaluation/monitoring requirement for the state of Alabama by determining the impact of provider services on student achievement outcomes.

Methodology

Statistical Analyses

To accomplish this goal, statistical analyses were conducted using two years (2009-10 and 2010-11) of Alabama Reading and Mathematics Test (ARMT) scale scores provided by the Alabama State Department of Education (ALSDE). For these analyses, the student samples were restricted to grades 4-8, as these are the only grades with the necessary pre-program (i.e., prior-year) scores from 2009-10 available to adjust the 2010-11 outcomes. It is important to have a prior achievement score, in order to determine whether the matched SES and control students were similar in their abilities before receiving tutoring services. Without that information, any statistically significant differences between the achievement of SES and matched control students could not be directly attributed to the SES program, but could be the result of one group being different from the other based on demonstrated prior ability.

Analysis of Covariance (ANCOVA) was used to assess the impact of SES program attendance in general (state-level) as well as the impact of specific SES providers (provider-level) on 2010-11 ARMT Reading and/or Math scale scores, with students' prior year (2009-10) ARMT scale score used as the covariate. ANCOVA statistically equates (adjusts the means of) the groups in 2010-11 on the covariate, meaning that any differences in achievement in 2010-11 can be evaluated as if the groups had similar achievement in 2009-10. Consequently, any statistically significant differences in 2010-11 achievement between SES and control students

could be more confidently attributed to SES program effects rather than to differences in prior achievement.

In order to provide a more fair and accurate evaluation of the impact of SES tutoring on achievement, students included in the ARMT statistical analyses detailed in this report must have received a minimum of 12 hours of tutoring and attended at least 50% of their contracted hours. For the ARMT provider-level statistical analyses, only providers with 10 or more students available to analyze (prior to being separated into scoring blocks, as discussed below) were initially included, to increase the reliability of findings and the ability (power) to find statistically significant differences between SES and control groups when such differences existed. For the ARMT state-level statistical analyses, looking at the impact on Reading and Math test performance of all SES providers combined, all providers were included (even those with fewer than 10 students available to analyze).

The control groups used in the ARMT statistical analyses were selected from the statewide ARMT files, and were composed of students who were similar to SES students in terms of (1) grade level, (2) prior-year scale score, (3) free/reduced meal status, (4) ethnicity, (5) gender, (6) school district, and (7) school, but who did not participate in SES. One-way Analysis of Variance (ANOVA) was conducted on baseline (2009-10) test data in both Reading and Math to ensure the comparability of the SES and control groups on previous achievement. Given the inability to randomly assign students to schools and SES providers, the matched-samples comparison approach used in these analyses is one of the most rigorous alternatives for determining the effect of SES on student achievement (see Slavin (2008) and U.S. Department of Education (2011)). Appendix B provides detailed information on the SES and control group selection and matching process.

As a result, the final state-level SES sample used in the analyses included 802 students from 13 different providers across 26 schools in 16 districts for Reading and 831 students from 13 different providers across 26 schools in 16 districts for Math. The final provider-level SES samples used in the analyses included 783 students from 11 different providers across 26 schools in 16 districts for Reading and 813 students from 11 different providers across 26 schools in 16 districts for Math. Based on their prior-year (2009-10) ARMT scale scores, SES and matched control students were divided into three achievement blocks for the state-level and provider-level analyses as follows:

- **Lowest scoring block** for students with the lowest range of scale scores in 2009-10
- **Middle scoring block** for students whose scale score fell in the middle range of scale scores in 2009-10
- **Highest scoring block** for students who had the highest range of scale scores in 2009-10

Statistical significance levels for provider comparisons were only reported for blocks in which a provider had at least 10 students available for analysis. It should be noted that the homogeneity of variance assumption underlying ANOVA and the homogeneity of regression slopes assumption underlying ANCOVA were tested and satisfied for all comparisons.

To help interpret the findings, Hedges's g effect size, both unadjusted and adjusted for prior-year achievement, with a correction for small samples, is also provided as an indication of the magnitude of the difference in achievement between groups. The effect size indicates the number of standard deviations by which the SES mean differs from the control group mean. A positive effect size would indicate a higher SES mean, while a negative effect size would indicate a higher control group mean. Thus, an effect size of +0.50 would indicate a half of a standard deviation advantage for SES students' score, a highly substantial educational impact. Using guidelines proposed by Vernez and Zimmer (2007), positive or negative effect sizes of 0.04 or less were classified as very small, between 0.05 and 0.10 were classified as small, between 0.11 and 0.24 were classified as moderate, and 0.25 and greater were classified as large. This is also in keeping with guidelines from the What Works Clearinghouse, part of the research arm of the U.S. Department of Education, which considers an effect size of 0.25 as "substantively important" (U.S. Department of Education, 2011). However, given that SES tutoring is fairly limited in total hours per year; lower effect sizes might be expected.

It should also be noted that to account for multiple comparisons, all statistically significant findings for the analyses in the outcome domain (Academic Achievement) were corrected using the Benjamini-Hochberg method. Within the domain of Academic Achievement, there were eighteen outcomes (i.e., statistical comparisons) evaluated:
- State level test for Reading (pretest, posttest for the lowest scoring block, posttest for the middle scoring block, posttest for the highest scoring block),
- State level test for Math (pretest, posttest for the lowest scoring block, posttest for the middle scoring block, posttest for the highest scoring block),

- Provider level test for Reading (pretest, posttest for the lowest scoring block, posttest for the middle scoring block, posttest for the highest scoring block),

- Provider level test for Math (pretest, posttest for the lowest scoring block, posttest for the middle scoring block, posttest for the highest scoring block),

- State level SES students with at least 12 hours and 50% of attendance vs. SES students with less than 12 hours or 50% of attendance for Reading (i.e., SES students included vs. SES student excluded from the analyses),

- State level SES students with at least 12 hours and 50% of attendance vs. SES students with less than 12 hours or 50% of attendance for Math (i.e., SES students included vs. SES student excluded from the analyses).

As a result, all statistically significant p values were divided by 18. After adjusting the statistically significant outcomes ($N = 10$) for multiple comparisons, five comparisons remained statistically significant:

- State level SES students with at least 12 hours and 50% of attendance vs. SES students with less than 12 hours or 50% of attendance for Math,

- Reading posttest for Appleton Learning for the lowest scoring block,

- Reading posttest for Huntsville City Schools for the lowest scoring block,

- Math posttest for Learn-It Systems for the middle scoring block, and

- State level posttest for Reading for the highest scoring block.

Descriptive Analyses

It should be noted that students designated as receiving special education services and students designated as English Language Learners (ELL) were not included in any of the ARMT statistical analyses. Their exclusion was due to the difficulty in securing suitable matches. For example, students designated as receiving special education services vary widely due to the nature of their disability; therefore, without access to detailed information from student records, a student classified as having a mild learning disability could be matched with a student classified as severely learning disabled, potentially leading to false conclusions concerning the effectiveness of providers' services. Additionally, students designated as receiving ELL services have various degrees of fluency. Unless the specific level of fluency can be identified, there is a risk of matching SES and control students with great differences in fluency (e.g., non-fluent vs.

exited from the ELL program and is only being monitored) and potentially falsely concluding that the provider either benefits or does not benefit ELL students.

In addition to students designated as receiving special education and ELL services, students who took the Alabama High School Graduation Exam (AHSGE) were not included in the matched-samples statistical analyses. Unlike the ARMT, which is administered to students in grades 3-8, the AHSGE is only administered to 11th grade students; therefore, prior-year AHSGE achievement scores were not available to adjust the 2010-11 outcomes for prior-year achievement. Consequently, separate descriptive (non-statistical) analyses of 2010-11 ARMT and AHSGE test Performance Levels were conducted for these three groups of SES participants. As with the statistical analyses, the descriptive analyses were conducted separately by tutoring subject area (Reading or Math) at both the individual provider-level and the state-level (i.e., all providers combined).

For the descriptive analyses, the difference in the percentage of SES and control students scoring Below Proficient vs. Proficient or Advanced was compared for (1) students designated as receiving special education or ELL services on the ARMT and (2) for all 11th grade students on the AHSGE. The reader should interpret these descriptive results with caution; however, due to the fact that no statistical analyses were performed that would determine if differences between SES and control students were statistically significant (i.e., not likely due to chance). Additionally, matched controls were only utilized for the AHSGE analyses, not for students designated as receiving special education or ELL services; therefore, these descriptive outcomes cannot conclusively determine (i.e., determine beyond chance) whether or not providers were successful with these populations.

Results

The main findings from both the statistical and descriptive analyses are provided by subject below in more applied language. For more detailed information on the statistical and descriptive outcomes and tables of results, readers should see Appendices C, D, and E for the detailed findings and tables of results.

Reading (Grades 4-8)

- Based on initial analyses, there were no statistically significant differences in prior-year Reading achievement between SES and control students at either the state- or

provider-level (confirming the accuracy of the student-level matching for the statistical analyses). All effect sizes were approximately zero.

State-Level

- After controlling for prior-year achievement and applying the Benjamini-Hochberg correction for multiple comparisons, there was a statistically significant difference in average 2010-11 ARMT Reading scale scores between SES and control students, in the highest scoring block. A moderate negative adjusted effect size of -0.23 indicated that the 2010-11 average achievement score for SES students was significantly lower than controls.

- For the lowest and middle scoring blocks, no statistically significant differences were found between SES and control students in adjusted ARMT Reading scale scores. While not statistically significant, the small negative adjusted effect sizes indicated that the 2010-11 adjusted mean ARMT scale scores in these two blocks were slightly lower for SES students compared to controls.

- Without taking hours of attendance into account, 27% of 233 students designated as receiving special education services and 40.3% of 77 students designated as receiving ELL services who participated in SES tutoring scored Proficient or Advanced on the ARMT Reading test in 2010-11.

- After eliminating students with fewer than 12 hours of attendance, 28.4% of 190 students designated as receiving special education services and 40.9% of 66 students designated as receiving ELL services who participated in SES tutoring scored Proficient or Advanced on the ARMT Reading test in 2010-11.

- Of the 327 students in 11th grade who participated in SES and took the AHSGE, 74% scored Proficient or Advanced in Reading in 2010-11, which was slightly lower than that of control students (79.2%).

Provider-Level

- After controlling for prior-year achievement and applying the Benjamini-Hochberg correction for multiple comparisons, there were statistically significant differences in average 2010-11 ARMT Reading scale scores between SES and control students for two providers in the lowest scoring block:

- o Huntsville City Schools, where SES students significantly outperformed controls, with a large positive adjusted effect size (0.73), putting the SES group mean at the 77th percentile of the control group, and

- o Appleton Learning, where the adjusted mean scale score for SES students was significantly lower than their matched controls, with a large negative adjusted effect size of -0.41, putting the SES group mean at the 34th percentile of the control group.

- Of 11 Reading providers, 4 providers in the lowest scoring block, 6 in the middle scoring block, and 6 in the highest scoring block had less than ten students available to analyze.

- Although not statistically significant, 2 of 11 Reading providers (18%) with at least 10 students available in the lowest scoring block, 1 of 11 providers (9%) in the middle scoring block, and 1 of 11 providers (9%) in the highest scoring block had positive adjusted effect sizes, meaning that the SES provider's adjusted average scale score was higher than the control group average. However, only if the difference in means was statistically significant can we state with confidence that the adjusted effect size difference was most likely real and not due to chance.

For the descriptive analyses, without taking hours of attendance into account:

- Out of the six providers with at least 10 students designated as receiving special education services available to analyze, Appleton Learning had the highest percentage of students (28.6%) scoring Proficient or Advanced on the 2010-11 ARMT Reading test.

- Out of the three providers with at least 10 students designated as receiving ELL services available to analyze, Appleton Learning had the highest percentage of students (46.2%) scoring Proficient or Advanced on the 2010-11 ARMT Reading test.

- Out of the five providers with at least 10 students in 11th grade available to analyze, A+ Tutors for Scholars had the highest percentage of students (81.3%) scoring Proficient or Advanced in Reading on the AHSGE.

For the descriptive analyses, after dropping students with fewer than 12 hours of attendance:

- Out of the six providers with at least 10 students designated as receiving special education services available to analyze, Appleton Learning had the highest

percentage of students (31.7%) scoring Proficient or Advanced on the 2010-11 ARMT Reading test.

- Out of the three providers with at least 10 students designated as receiving ELL services available to analyze, Appleton Learning had the highest percentage of students (47.2%) scoring Proficient or Advanced on the 2010-11 ARMT Reading test.

Math (Grades 4-8)

- Based on initial analyses, there were no statistically significant differences in prior-year Math achievement between SES and control students at either the state- or provider-level (confirming the accuracy of the student-level matching for the statistical analyses). All effect sizes were approximately zero.

State-Level

- After controlling for prior-year achievement and applying the Benjamini-Hochberg correction for multiple comparisons, there were no statistically significant differences in average 2010-11 ARMT Math scale scores between SES and control students in any of the three scoring blocks.

- Without taking hours of attendance into account, 27.9% of 240 students designated as receiving and 51.3% of 80 students designated as receiving ELL services who participated in SES tutoring scored Proficient or Advanced on the ARMT Math test in 2010-11.

- After eliminating students with fewer than 12 hours of attendance, 30.1% of 196 students designated as receiving special education services and 52.9% of 68 students designated as receiving ELL services who participated in SES tutoring scored Proficient or Advanced on the ARMT Math test in 2010-11.

- Of the 362 students in 11th grade who participated in SES and took the AHSGE, 80.4% scored Proficient or Advanced in Math in 2010-11, which was slightly lower than that of control students (82.3%).

Provider-Level

- After controlling for prior-year achievement and applying the Benjamini-Hochberg correction for multiple comparisons, there was only one statistically significant

difference in average 2010-11 ARMT Math scale scores between SES and control students: For one provider in the middle scoring block, Learn-It Systems, SES students significantly outperformed controls, with a large positive adjusted effect size of (0.50), putting the SES group mean at the 69th percentile of the control group. This outcome is noteworthy considering that overall, SES students included in the Math analyses scored statistically significantly lower than SES students not included in the analyses scored. Therefore, it appears that Learn-It Systems was more effective in working with this lower performing group of SES students.

- Of the Math providers, 4 of 11 providers in the lowest scoring block, 6 of 11 in the middle scoring block and 5 of 10 in the highest scoring block had less than ten students available to analyze.

- Although not statistically significant, 4 of 11 Math providers (36.4%) with at least 10 students available in the lowest scoring block, 1 of 11 providers (9%) in the middle scoring block, and 1 of 10 providers (10%) in the highest scoring block had positive adjusted effect sizes, meaning that the SES adjusted group average scale score was higher than the control group average. However, only if the difference in means was statistically significant can we state with confidence that the adjusted effect size difference was most likely real and not due to chance.

For the descriptive analyses, without taking hours of attendance into account:

- Out of the six providers with at least 10 students designated as receiving special education services available to analyze, A+ Tutors for Scholars had the highest percentage of students (42.1%) scoring Proficient or Advanced on the 2010-11 ARMT Math test.

- Out of the three providers with at least 10 students designated as receiving ELL services available to analyze, Appleton Learning had the highest percentage of students (60%) scoring Proficient or Advanced on the 2010-11 ARMT Math test.

- Out of the six providers with at least 10 students available to analyze that tutored 11th grade students, A+ Tutors for Scholars had the highest percentage of students (83.9%) scoring Proficient or Advanced in Math on the AHSGE.

For the descriptive analyses, after dropping students with fewer than 12 hours of attendance:

- Out of the six providers with at least 10 students designated as receiving special education services available to analyze, Achievement Academy had the highest percentage of students (58.3%) scoring Proficient or Advanced on the 2010-11 ARMT Math test.

- Out of the three providers with at least 10 students designated as receiving ELL services available to analyze, Appleton Learning had the highest percentage of students (61.1%) scoring Proficient or Advanced on the 2010-11 ARMT Math test.

Summary and Conclusions

For the ARMT state-level analyses, after controlling for prior-year achievement and applying the Benjamini-Hochberg correction for multiple comparisons, there was only a statistically significant difference between SES and control students in average 2010-11 ARMT Reading scale scores in the highest scoring block, with SES students outperformed by control students. While not statistically significant, the remaining adjusted average 2010-11 Reading and Math ARMT scale scores of SES students at the state level were slightly lower than that of controls across all scoring blocks.

For the ARMT provider-level analyses, after controlling for prior-year achievement applying the Benjamini-Hochberg correction for multiple comparisons, there were no statistically significant differences in achievement for the majority of providers, meaning that a majority of SES providers served SES students who scored similarly to non-SES (control) students on the 2010-11 ARMT. However, statistically significant differences were found for two Reading providers in the lowest scoring block. Of these two providers, one had a large positive adjusted effect size, meaning that the SES students scored statistically significantly higher than control students. However, the other provider in the lowest scoring block had a large, negative effect size, indicating that the adjusted mean scale score was statistically significantly lower for the SES students compared to controls. Meanwhile, a statistically significant difference was found for only one Math provider: in the middle scoring block, with a large positive adjusted effect size, meaning that the SES students had a statistically significant higher adjusted mean scale score than the control students. It should be noted that after applying the Benjamini-Hochberg correction for multiple comparisons, there was a statistically significant difference in prior-year achievement in Math between SES students included and not included in

the analyses. The effect in Math was moderate and negative (-0.17), indicating that SES students who had 12 or more hours of Math tutoring and attended at least 50% of their contracted hours had slightly lower achievement in 2009-10. This placed them at the 43th percentile of the group of SES students who had less than 12 hours of tutoring in Math or did not attend at least 50% of their contracted hours. Consequently, the statistically significant and positive outcome for the provider in Math is noteworthy considering that overall, SES students included in the Math analyses scored statistically significantly lower than SES students not included in the analyses.

For the descriptive analyses of students designated as receiving special education or ELL services, and for the 11th grade AHSGE descriptive analyses, without taking hours attended into account:

- At the state level (i.e., all providers combined),
  - Approximately a quarter of students designated as receiving special education services who participated in SES tutoring in either Reading or Math scored Proficient or Advanced on the 2010-11 ARMT;
  - About 40% of students designated as receiving ELL services who participated in Reading tutoring scored Proficient or Advanced on the ARMT Reading test, while about half of students designated as receiving ELL services who participated in Math tutoring scored Proficient or Advanced on the ARMT Math test;
  - AHSGE outcomes slightly favored control students in both Reading and Math.
- At the provider level, for providers with at least 10 students available to analyze:
  - No provider serving students designated as receiving special education services had at least 50% of students score Proficient or Advanced on the ARMT in either Reading ($N = 6$) or Math ($N = 6$).
  - No provider serving students designated as receiving ELL services had at least 50% of students score Proficient or Advanced on the ARMT in Reading ($N = 3$), while 2 of 3 (66%) had at least 50% of students score Proficient or Advanced on the ARMT in Math.
  - All providers serving 11th grade students in both Reading ($N = 5$) and Math ($N = 6$) had at least 50% of students score Proficient or Advanced on the AHSGE.

For the descriptive analyses of students designated as receiving special education or ELL services, and for the 11th grade AHSGE descriptive analyses, for students who had a minimum of 12 hours of tutoring:

- At the state level,
  - Compared to those with any hours of attendance, a slightly larger percentage of students designated as receiving special education services or ELL services who attended SES tutoring scored Proficient or Advanced on both the ARMT Reading and Math tests. However, while higher, the differences were small.
- At the provider level, for providers with at least 10 students available to analyze,
  - No provider serving students designated as receiving special education services had at least 50% of students score Proficient or Advanced on the ARMT in Reading ($N = 6$), while only 1 of 6 providers in Math (17%) had at least 50% of students score Proficient or Advanced.
  - No provider serving students designated as receiving ELL services had at least 50% of students score Proficient or Advanced on the ARMT in Reading ($N = 3$), while 2 of 3 (66%) had at least 50% of students score Proficient or Advanced on the ARMT in Math.

Therefore, based on the statistical analyses, it appears that for the most part, students who attended SES services are scoring similarly to control students who did not attend SES tutoring. However, these results should be interpreted with caution. For ARMT statistical outcomes, small sample sizes, which reduces the ability (power) to detect statistical significance and the reliability of outcomes in general, was a limiting factor for many providers. When observing the total number of students analyzed by provider (*N* of each scoring block) in Reading and Math, less than half of providers in each scoring block had more than 20 students to analyze. In addition, only about 12% of all students who participated in SES tutoring in the state of Alabama were able to be included in the statistical analyses (e.g., were in Grades 4-8, had two years of test data available). Therefore, the results from the statistical analyses may not be representative of the achievement of the larger total population of students in the state of Alabama who participated in SES tutoring. More pervasive and substantive issues are the degree to which state assessments have adequate sensitivity to detect the contribution of only a limited number of hours of tutoring during an entire school year (the average number of hours attended for students

in the state of Alabama was less than 21 hours). At one hour per week, that is approximately four weeks of tutoring out of an entire school year. Therefore, it is unsurprising that more statistically significant differences in achievement between SES and control students were not found.

Interested readers can review the following appendices for more detailed information regarding SES provider services; sample selection and matching; statistical outcomes; and descriptive outcomes for students designated as receiving special education or ELL services, and AHSGE students.

- Appendix A: SES Provider Services
- Appendix B: Sample Selection and Matching
- Appendix C: Statistical Outcomes
- Appendix D: Descriptive Outcomes for Students Designated as Receiving Special Education and English Language Learner (ELL) Services
- Appendix E: Descriptive Outcomes for the Alabama High School Graduation Exam (AHSGE)

References

Slavin, R.E. (2008). Perspectives on evidence-based research in education, what works? Issues in synthesizing educational program evaluations. *Educational Researcher, 37(1),* 5-14.

U.S. Department of Education (2011). What Works Clearinghouse Procedures and Standards Handbook (Version 2.1). Washington, DC: Author. Retrieved April 18, 2012 from http://ies.ed.gov/ncee/wwc/pdf/reference_resources/wwc_procedures_v2_1_standards_handbook.pdf

Vernez, G. & Zimmer, R. (2007). *Interpreting the effects of Title I supplemental educational services.* Retrieved March 29, 2010 from http://www2.ed.gov/rschstat/eval/choice/implementation/achievementanalysis-sizes.pdf

Appendix A
SES Provider Services

Initial Sample File

There were 6,795 students (7,157 records) in Grades K-12 initially in the SES data file. Of these, 5,327 students (78.4%) (5,442 records) had valid student identification information, tutoring subject area, provider, district name, school name, hours attended, hours offered, and start date of service data. These 5,327 students received SES tutoring services from 16 providers across 57 schools in 27 districts. As shown in Table A-1 and Table A-2:

- Birmingham City District had the largest percentage of students (19.5%; $N = 1,058$) and the largest percentage of provider contracts (19.5%; $N = 1,061$). (See Table A-1).

- Appleton Learning had the largest percentage of tutoring contracts ($N = 1,823$, 33.5%), followed by All About Partners in Education ($N = 892$, 16.39%) and A to Z Tutoring ($N = 822$, 15.1%). It should be noted that student contracts are not unique. Students could have multiple contracts, if they received SES tutoring services in both Reading and Math from the same or multiple providers. When describing the types of services SES providers performed, each contract was treated as a unique record. (See Table A-2).

- JFK Tutoring was the smallest provider, serving only three students with three contracts, and was the only provider with fewer than 10 students served. (See Table A-2).

Table A-1: Initial Sample (Grades K-12)-Number of Students and Contracts Served by District and Provider

School District	Provider	N Students	N Provider Contracts	% Students	% Total Contracts
Anniston City	A to Z Tutoring	15	15		
	Appleton Learning	9	9		
	Total	**24**	**24**	**0.44**	**0.44**
Bibb County	A to Z Tutoring	7	7		
	Total	**7**	**7**	**0.13**	**0.13**
Birmingham City	A to Z Tutoring	166	166		
	A+ Tutors for Scholars	32	32		
	Achievement Academy	86	86		
	All About Partners in Education	264	265		
	Appleton Learning	132	132		
	Carter Reddy and Associates	53	54		
	Learn-It Systems	125	126		
	MTS Tutorial Service	41	41		
	Rocket Learning, LLC	51	51		
	Sylvan of Birmingham/Hoover	21	21		
	Sylvan of Birmingham/Roebuck	87	87		
	Total	**1058**	**1061**	**19.50**	**19.50**
Bullock County	A to Z Tutoring	2	2		
	A+ Tutors for Scholars	20	20		
	Achievement Academy	19	19		
	All About Partners in Education	6	6		

School District	Provider	N Students	N Provider Contracts	% Students	% Total Contracts
	Appleton Learning	35	35		
	Total	**82**	**82**	**1.51**	**1.51**
Butler County	A to Z Tutoring	64	64		
	Achievement Academy	124	124		
	Appleton Learning	11	11		
	Total	**199**	**199**	**3.67**	**3.66**
Chilton County	A to Z Tutoring	5	5		
	A+ Tutors for Scholars	84	84		
	MTS Tutorial Service	31	31		
	Total	**120**	**120**	**2.21**	**2.21**
Coosa County	A to Z Tutoring	13	13		
	All About Partners in Education	47	47		
	Total	**60**	**60**	**1.11**	**1.10**
Daleville City	A to Z Tutoring	11	12		
	Total	**11**	**12**	**0.20**	**0.22**
Dallas County	A to Z Tutoring	6	6		
	Achievement Academy	21	22		
	All About Partners in Education	109	112		
	Learn-It Systems	12	12		
	Rocket Learning, LLC	47	47		
	Total	**195**	**199**	**3.59**	**3.66**
DeKalb County	A to Z Tutoring	119	119		
	Appleton Learning	340	342		
	Total	**459**	**461**	**8.46**	**8.47**
Dothan City	A to Z Tutoring	94	94		
	Total	**94**	**94**	**1.73**	**1.73**
Escambia County	A to Z Tutoring	5	5		
	Appleton Learning	84	84		
	Total	**89**	**89**	**1.64**	**1.64**
Fairfield City	A to Z Tutoring	21	21		
	Appleton Learning	22	22		
	Sylvan of Birmingham/Hoover	2	2		
	Sylvan of Birmingham/Roebuck	1	1		
	Total	**46**	**46**	**0.85**	**0.85**
Fayette County	A to Z Tutoring	24	24		
	Total	**24**	**24**	**0.44**	**0.44**
Greene County	Achievement Academy	10	11		
	Appleton Learning	7	7		
	Total	**17**	**18**	**0.31**	**0.33**
Huntsville City	A to Z Tutoring	6	6		
	All About Partners in Education	8	8		
	Appleton Learning	331	332		
	Huntsville City Schools	68	68		
	Learn-It Systems	193	193		
	Total	**606**	**607**	**11.17**	**11.15**
Jackson County	A to Z Tutoring	22	22		
	Appleton Learning	56	56		
	Total	**78**	**78**	**1.44**	**1.43**
Limestone County	A to Z Tutoring	66	66		
	Appleton Learning	104	104		
	Total	**170**	**170**	**3.13**	**3.12**
Lowndes County	A to Z Tutoring	28	28		
	Achievement Academy	50	52		
	All About Partners in Education	14	14		
	Total	**92**	**94**	**1.70**	**1.73**
Midfield City	A to Z Tutoring	23	23		
	A+ Tutors for Scholars	48	48		
	Achievement Academy	31	31		

School District	Provider	N Students	N Provider Contracts	% Students	% Total Contracts
	All About Partners in Education	21	21		
	Appleton Learning	5	5		
	Learn-It Systems	19	19		
	Sylvan of Birmingham/Hoover	3	3		
	Sylvan of Birmingham/Roebuck	17	17		
	Total	**167**	**167**	**3.08**	**3.07**
Monroe County	Appleton Learning	133	133		
	Total	**133**	**133**	**2.45**	**2.44**
Montgomery County	A to Z Tutoring	97	97		
	Achievement Academy	74	74		
	All About Partners in Education	336	336		
	Appleton Learning	69	69		
	Carter Reddy and Associates	126	127		
	Learning Express Center	34	34		
	Total	**736**	**737**	**13.56**	**13.54**
Selma City	A to Z Tutoring	3	3		
	A+ Tutors for Scholars	45	45		
	Achievement Academy	52	52		
	All About Partners in Education	44	44		
	Total	**144**	**144**	**2.65**	**2.65**
Sumter County	A to Z Tutoring	7	7		
	All About Partners in Education	16	16		
	Appleton Learning	257	257		
	Total	**280**	**280**	**5.16**	**5.15**
Tallapoosa County	Carter Reddy and Associates	8	8		
	Total	**8**	**8**	**0.15**	**0.15**
Tarrant City	A to Z Tutoring	5	5		
	Achievement Academy	12	12		
	Appleton Learning	20	20		
	Sylvan of Birmingham/Roebuck	19	19		
	Total	**56**	**56**	**1.03**	**1.03**
Tuscaloosa City	A to Z Tutoring	12	12		
	All About Partners in Education	23	23		
	Appleton Learning	204	205		
	Capitol School	51	51		
	Carter Reddy and Associates	4	4		
	JFK Tutoring	3	3		
	Learn-It Systems	163	163		
	University of Alabama Heroes	11	11		
	Total	**471**	**472**	**8.68**	**8.67**
Statewide	**Total**	**5,426[a]**	**5,442**	**100.00[b]**	**100.00**

[a] The Statewide Total of 5,426 represents the total number of students participating with the provider, in the district indicated. Students receiving services from more than one provider were counted more than once. The total unique count of individual students is 5,327.
[b] The percentages in this column are based on the 5,426 total count of students.
Note: Column percentages may not add up to exactly 100% due to rounding.

Table A-2 presents the initial number of students and contracts by provider before report parameters were applied. Of 6,795 individual students (7,157 records), 458 (6.7%) received tutoring services in Reading only, 730 (10.7%) in Math only, and 4,238 (62.4%) in both Reading and Math.

Table A-2: Initial Sample (Grades K-12)-Number of Students and Contracts by Provider and Tutoring Subject

Provider	N Students Served			Total N	Total %	N Provider Contracts	% Contracts
	Reading	Math	Reading & Math				
A to Z Tutoring	25	116	680	821	15.13	822	15.10
A+ Tutors for Scholars	3	3	223	229	4.22	229	4.21
Achievement Academy	15	36	428	479	8.83	483	8.88
All About Partners in Education	220	226	442	888	16.37	892	16.39
Appleton Learning	156	174	1489	1819	33.52	1823	33.50
Capitol School	0	0	51	51	0.94	51	0.94
Carter Reddy and Associates	6	45	140	191	3.52	193	3.55
Huntsville City Schools	0	0	68	68	1.25	68	1.25
JFK Tutoring	0	0	3	3	0.06	3	0.06
Learn-It Systems	6	69	437	512	9.44	513	9.43
Learning Express Center	3	30	1	34	0.63	34	0.62
MTS Tutorial Service	0	1	71	72	1.33	72	1.32
Rocket Learning, LLC	15	14	69	98	1.81	98	1.80
Sylvan of Birmingham/Hoover	3	7	16	26	0.48	26	0.48
Sylvan of Birmingham/Roebuck	6	9	109	124	2.29	124	2.28
University of Alabama Heroes	0	0	11	11	0.20	11	0.20
Statewide Total	**458**	**730**	**4,238**	**5,426[a]**	**100.00**	**5,442**	**100.00**

[a] The actual number of unique students was 5,327. Students receiving services from more than one provider were counted more than once.
Note: Column percentages may not add up to exactly 100% due to rounding.

Table A-3 provides the average hours offered by provider and hours attended by students by subject area for students with valid data.

Based on data provided for students who received tutoring in Reading only:

- Rocket Learning, LLC had the highest attendance rate (100%), followed by Sylvan of Birmingham/Hoover (87.97%) and A+ Tutors for Scholars (82.62%).

- Learning Express Center had the highest average number of hours contracted (44.00), followed by Appleton Learning (40.35) and Achievement Academy (38.42).

For students who received tutoring in Math only:

- A+ Tutors for Scholars had the highest attendance rate (100%), followed by Rocket Learning, LLC (91.79%), and Learn-It Systems (89.83%).

- Learning Express Center had the highest average number of hours contracted (44.00), followed by Achievement Academy (36.48).

For students who received tutoring services in both Reading and Math:

- Learning Express Center had the highest attendance rate (100%), followed by Capitol School (84.15%).

- Capitol School had the highest average number of hours contracted (68.00), followed by Learning Express Center (44.00).

For the total group (all students who received tutoring combined):

- Capitol School had the highest attendance rate (84.15%), followed by A to Z Tutoring (81.17%).

- Capitol also had the highest average number of hours contracted (68.00), followed by Learning Express Center (44.00).

Table A-3: Initial Sample (Grades K-12)-Average Hours Attended by Provider and Tutoring Subject

Provider	Reading Only			Math Only			Both Reading and Math			Total Group		
	Hours Contracted	Hours Attended	Attendance Rate	Hours Contracted	Hours Attended	Attendance Rate	Hours Contracted	Hours Attended	Attendance Rate	Hours Contracted	Hours Attended	Attendance Rate
A to Z Tutoring	26.07	20.05	76.91	25.67	19.38	75.50	23.38	19.27	82.42	23.79	19.31	81.17
A+ Tutors for Scholars	33.08	27.33	82.62	27.24	27.24	100.00	26.10	18.27	70.00	26.20	18.51	70.65
Achievement Academy	38.42	18.88	49.14	36.48	18.11	49.64	36.00	19.85	55.14	36.11	19.69	54.53
All About Partners in Education	23.88	12.72	53.27	23.85	13.56	56.86	24.07	16.82	69.88	23.97	14.98	62.49
Appleton Learning	40.35	15.63	38.74	35.81	18.60	51.94	29.53	20.89	70.74	31.05	20.22	65.12
Capitol School	0.00	0.00	0.00	0.00	0.00	0.00	68.00	57.22	84.15	68.00	57.22	84.15
Carter Reddy and Associates	25.98	18.67	71.86	25.87	16.44	63.55	25.89	17.50	67.59	25.89	17.29	66.78
Huntsville City Schools	0.00	0.00	0.00	0.00	0.00	0.00	30.00	21.90	73.00	30.00	21.90	73.00
JFK Tutoring	0.00	0.00	0.00	0.00	0.00	0.00	25.00	18.33	73.32	25.00	18.33	73.32
Learn-It Systems	30.00	20.17	67.23	30.00	26.95	89.83	30.00	21.80	72.67	30.00	22.48	74.93
Learning Express Center	44.00	23.67	53.80	44.00	21.75	49.43	44.00	44.00	100.00	44.00	22.57	51.30
MTS Tutorial Service	0.00	0.00	0.00	22.00	10.00	45.45	35.86	17.95	50.06	35.67	17.84	50.01
Rocket Learning, LLC	24.05	24.05	100.00	24.13	22.15	91.79	24.45	18.27	74.72	24.34	19.71	80.98
Sylvan of Birmingham/Hoover	36.00	31.67	0.00	34.86	25.29	72.55	34.00	22.81	67.09	34.46	24.50	71.10
Sylvan of Birmingham/Roebuck	34.67	24.17	69.71	36.00	27.22	75.61	34.75	24.18	69.58	34.84	24.40	70.03
University of Alabama Heroes	0.00	0.00	0.00	0.00	0.00	0.00	43.00	28.18	65.53	43.00	28.18	65.53
Statewide[a]	**30.61**	**15.3**	**49.98**	**29.41**	**18.18**	**61.82**	**29.05**	**20.42**	**70.29**	**29.23**	**19.69**	**67.36**

[a] The Statewide figures are not the sum or average of the preceding rows, but are a separate calculation of state average hours.

Final SES Sample File

Once report parameters were applied, the final SES samples available for analyses included 863 students in Grades 4-8 (1,641 contracts) from 13 different providers across 26 schools in 16 districts. As shown in Table A-4 and Table A-5:

- Tuscaloosa City had the largest percentage of students (20.42%; $N = 177$) and the largest percentage of provider contracts (21.57%; $N = 354$). (See Table A-4).

- Appleton Learning had the largest percentage of tutoring contracts ($N = 584$, 35.59%), followed by Learn-It Systems ($N = 269$, 16.39%) and A to Z Tutoring ($N = 233$, 14.2%). It should be noted that student contracts are not unique. Students could have multiple contracts if they received SES tutoring services in both Reading and Math from the same or multiple providers. When describing the types of services SES providers performed, each contract was treated as a unique record. (See Table A-5).

- University of Alabama Heroes was the smallest provider, serving only 6 students with twelve contracts. (See Table A-5).

- MTS Tutorial Service and University of Alabama Heroes both had fewer than ten students served in Reading and Math, respectively. (See Table A-5).

Table A-4: Final Sample (Grades 4-8)-Number of Students and Contracts Served by District and Provider

District	Provider	N Students	N Provider Contracts	% Students	% Total Contracts
Birmingham City	A to Z Tutoring	24	46		
	A+ Tutors for Scholars	8	14		
	Achievement Academy	6	12		
	All About Partners in Education	2	3		
	Appleton Learning	5	10		
	Carter Reddy and Associates	10	20		
	Learn-It Systems	41	58		
	MTS Tutorial Service	5	10		
	Rocket Learning, LLC	4	8		
	Sylvan of Birmingham/Roebuck	8	15		
	Total	**113**	**196**	**13.03**	**11.94**
Bullock County	A to Z Tutoring	2	4		
	A+ Tutors for Scholars	3	4		
	Achievement Academy	11	21		
	All About Partners in Education	2	4		
	Appleton Learning	14	25		
	Total	**32**	**58**	**3.69**	**3.53**
Butler County	A to Z Tutoring	35	69		
	Achievement Academy	61	121		
	Appleton Learning	7	14		
	Total	**103**	**204**	**11.88**	**12.43**
Chilton County	A+ Tutors for Scholars	16	30		
	MTS Tutorial Service	4	7		
	Total	**20**	**37**	**2.31**	**2.25**
Coosa County	A to Z Tutoring	7	12		
	All About Partners in Education	32	63		
	Total	**39**	**75**	**4.50**	**4.57**
Dallas County	Achievement Academy	5	8		
	All About Partners in Education	12	18		
	Learn-It Systems	4	7		
	Rocket Learning, LLC	22	27		
	Total	**43**	**60**	**4.96**	**3.66**
DeKalb County	A to Z Tutoring	20	40		
	Appleton Learning	71	141		
	Total	**91**	**181**	**10.50**	**11.03**
Fayette County	A to Z Tutoring	6	12		
	Total	**6**	**12**	**0.69**	**0.73**

District	Provider	N Students	N Provider Contracts	% Students	% Total Contracts
Huntsville City	All About Partners in Education	1	2		
	Appleton Learning	21	41		
	Huntsville City Schools	20	40		
	Learn-It Systems	48	96		
	Total	**90**	**179**	**10.38**	**10.91**
Jackson County	A to Z Tutoring	11	22		
	Appleton Learning	24	44		
	Total	**35**	**66**	**4.04**	**4.02**
Limestone County	A to Z Tutoring	12	24		
	Appleton Learning	18	36		
	Total	**30**	**60**	**3.46**	**3.66**
Midfield City	A to Z Tutoring	1	2		
	Achievement Academy	12	24		
	All About Partners in Education	15	30		
	Appleton Learning	2	4		
	Learn-It Systems	9	18		
	Sylvan of Birmingham/Roebuck	6	12		
	Total	**45**	**90**	**5.19**	**5.48**
Monroe County	Appleton Learning	23	46		
	Total	**23**	**46**	**2.65**	**2.80**
Sumter County	A to Z Tutoring	1	2		
	Appleton Learning	17	17		
	Total	**18**	**19**	**2.08**	**1.16**
Tallapoosa County	Carter Reddy and Associates	2	4		
	Total	**2**	**4**	**0.23**	**0.24**
Tuscaloosa City	All About Partners in Education	12	24		
	Appleton Learning	103	206		
	Capitol School	11	22		
	Learn-It Systems	45	90		
	University of Alabama Heroes	6	12		
	Total	**177**	**354**	**20.42**	**21.57**
Statewide	**Total**	**867**[a]	**1,641**	**100.00**[b]	**100.00**

[a] The Statewide Total of 867 students is not a unique count in that students may have received multiple services from a provider or services from multiple providers. The unique count of students in the final sample is 863. [b] The percentages in this column are based on the 867 total count of students.

Note: Column percentages may not add up to exactly 100% due to rounding.

Table A-5: Final Sample (Grades 4-8) Number of Students and Contracts by Provider and Tutoring Subject

Provider	N Students Served					N Provider Contracts	% Contracts
	Reading	Math	Reading & Math	Total N	Total %		
A to Z Tutoring	2	2	115	119	13.73	233	14.20
A+ Tutors for Scholars	1	3	23	27	3.11	48	2.93
Achievement Academy	3	0	92	95	10.96	186	11.33
All About Partners in Education	6	1	69	76	8.77	144	8.78
Appleton Learning	5	18	282	305	35.18	584	35.59
Capitol School	0	0	11	11	1.27	22	1.34
Carter Reddy and Associates	0	0	12	12	1.38	24	1.46
Huntsville City Schools	0	0	20	20	2.31	40	2.44
Learn-It Systems	0	25	122	147	16.96	269	16.39
MTS Tutorial Service	0	0	9	9	1.04	17	1.04
Rocket Learning, LLC	10	7	9	26	3.00	35	2.13
Sylvan of Birmingham/Roebuck	0	1	13	14	1.61	27	1.65
University of Alabama Heroes	0	0	6	6	0.69	12	0.73
Statewide Total[a]	**27**	**57**	**783**	**867**[b]	**100.00**	**1,641**	**100.00**

[a] The Statewide Total is based on the sum of the preceding rows in the tables, and not a unique count of students.
[b] The actual number of unique students was 863. Students who received service from more than one provider were counted more than once.
Note: Column percentages may not add up to exactly 100% due to rounding.

Table A-6 provides the average hours offered by provider and hours attended by students by subject area for students with valid data.

Based on data provided for students who received tutoring in Reading only:

- A to Z Tutoring and Rocket Learning, LLC had the highest attendance rates (100%), followed by A+ Tutors for Scholars (99.76%).
- Appleton Learning had the highest average number of hours contracted (39.60), followed by Achievement Academy (37.45) and A+ Tutors for Scholars (33.08).

For students who received tutoring in Math only:

- Learn-It Systems had the highest attendance rate (101.2%), followed by A+ Tutors for Scholars (100%).
- Appleton Learning had the highest average number of hours contracted (38.94), followed by Sylvan of Birmingham/Roebuck (36.00).

For students who received tutoring services in both Reading and Math:

- A to Z Tutoring had the highest attendance rate (98.73%), followed by Appleton Learning (96.25%).
- Capitol School had the highest average number of hours contracted (68.00), followed by University of Alabama Heroes (43.00).

For the total group (all students who received tutoring combined):

- A to Z Tutoring had the highest attendance rate (98.39%), followed by Rocket Learning, LLC (96.28%).
- Capitol School had the highest average number of hours contracted (68.00), followed by University of Alabama Heroes (43.00).

Table A-6: Final Sample (Grades 4-8) Average Hours Attended by Provider and Tutoring Subject

Provider	Reading Only			Math Only			Both Reading and Math			Total Group		
	Hours Contracted	Hours Attended	Attendance Rate	Hours Contracted	Hours Attended	Attendance Rate	Hours Contracted	Hours Attended	Attendance Rate	Hours Contracted	Hours Attended	Attendance Rate
A to Z Tutoring	20.00	20.00	100.00	26.00	16.63	63.96	23.58	23.28	98.73	23.57	23.19	98.39
A+ Tutors for Scholars	33.08	33.00	99.76	27.24	27.24	100.00	25.23	22.52	89.26	25.52	23.03	90.24
Achievement Academy	37.45	21.33	56.96	0.00	0.00	0.00	36.51	31.89	87.35	36.53	31.72	86.83
All About Partners in Education	24.05	22.34	92.89	24.61	24.00	97.52	22.56	21.33	94.55	22.64	21.39	94.48
Appleton Learning	39.60	28.55	72.10	38.94	24.78	63.64	30.10	28.97	96.25	30.46	28.84	94.68
Capitol School	0.00	0.00	0.00	0.00	0.00	0.00	68.00	64.18	94.38	68.00	64.18	94.38
Carter Reddy and Associates	0.00	0.00	0.00	0.00	0.00	0.00	25.69	21.51	83.73	25.69	21.51	83.73
Huntsville City Schools	0.00	0.00	0.00	0.00	0.00	0.00	30.00	27.45	91.50	30.00	27.45	91.50
Learn-It Systems	0.00	0.00	0.00	30.00	30.36	101.20	30.00	25.85	86.17	30.00	26.27	87.57
MTS Tutorial Service	0.00	0.00	0.00	0.00	0.00	0.00	36.12	23.18	64.17	36.12	23.18	64.17
Rocket Learning, LLC	24.05	24.05	100.00	24.05	22.47	93.43	24.30	23.16	95.31	24.18	23.28	96.28
Sylvan of Birmingham/Roebuck	0.00	0.00	0.00	36.00	32.00	88.89	32.30	28.31	87.65	32.44	28.44	87.67
University of Alabama Heroes	0.00	0.00	0.00	0.00	0.00	0.00	43.00	32.67	75.98	43.00	32.67	75.98
Statewide[a]	**28.45**	**24.23**	**85.17**	**31.82**	**26.90**	**84.54**	**29.68**	**27.36**	**92.18**	**29.73**	**27.30**	**91.83**

[a] The Statewide figures are not the sum or average of the preceding rows, but are a separate calculation of state average hours.

Appendix B
Sample Selection and Matching

In order to give a more fair and accurate evaluation of the impact of SES tutoring on achievement, students in the ARMT statistical analyses detailed in this report had to meet the following criteria:

- As ARMT results are only available for grades 3-8, only students in grades 4-8 in 2010-11 were included, because students needed two years of data for the statistical analysis (i.e. results from grades 3-7 in 2009-10)

- Only students who had ARMT test scores for both 2009-10 and 2010-11 were included.

- Only students who received a minimum of 12 hours of tutoring and attended at least 50% of their contracted hours were included. In order to more reliably judge the impact of provider services, students should have attended tutoring for a basic minimum amount of time.

- Students receiving special education services or designated as ELL were not included. Students identified as receiving special education services vary widely due to the nature of their disability. Likewise, ELL students vary in their levels of fluency. There is a risk of matching SES and control students with great differences in fluency or varying levels of disability and falsely concluding that the provider either benefits or does not benefit these students.

- Only students who did not repeat the same grade in both 2009-10 and 2010-11 were analyzed. Similar to the reasoning for not including students receiving special education services or students designated as ELL in the statistical analyses, students who repeated a grade may have particular needs that are beyond the scope of what an SES provider can reasonably address.

- Students who began SES tutoring after the ARMT test date, March 27, 2011 were not included.

- Only students who attended the same school for the entire 2010-11 school year were included. Changing schools is a disruptive experience, due to a lack of continuity in the school environment, and including them could potentially falsely attribute negative test outcomes to a provider in such a case.

For the ARMT provider-level statistical analyses, the following criteria were applied:

- Only providers with 10 or more students available to analyze (prior to being separated into scoring blocks) were initially included, in order to increase the reliability of findings and the ability (power) to find significant differences between SES and control groups where such differences existed.
    - For each of the three individual scoring blocks, only providers with 10 or more students available to analyze were included in the statistical analyses.
- Students who were served by more than one provider in a subject were not counted in any individual provider analysis due to confounding of services. In other words, it would not be possible to attribute to multiple providers the particular amount of influence each had on one student's test scores.

For the ARMT state-level statistical analyses, looking at the impact on Reading and Math test performance of all SES providers combined:

- All providers were included (even those with fewer than 10 students to analyze).
- Students who attended the same school but had different providers were included. For these students with multiple records, their hours of service were combined to determine if the minimum 12 hours and 50% attendance requirements were met.

When conducting the analyses, ARMT results were examined separately by subject tutored. The Reading analyses included the ARMT Reading scores of those students contracted for services in Reading only, as well as the ARMT Reading scores of those students contracted for services in both Reading and Math. Similarly, the Math analyses included the ARMT Math scores of those students contracted for services in Math only, and the ARMT Math scores of students contracted for services in both Reading and Math.

SES Sample Selection

Table B-1 details the steps taken in constructing the student samples for both Reading and Math. There were initially 6,795 students (7,157 records) in the SES data file. After dropping students not in grades 4-8, 2,072 students (30.5%) (2,159 records) remained. For the state-level analysis, the hours of service were combined across records for those who attended different providers at the same schools. After following the reporting guidelines, a total of 802

students were available for Reading while a total of 831 students were available for Math at the state-level matching. For the provider-level analysis, students who attended different providers and providers with less than 10 students remaining were not included. After following the reporting guidelines, a total of 783 students receiving Reading services and 813 students receiving Math services were available for the provider-level matching.

Table B-1 : SES Student File Selection Process

Part I: Initial File		
	Number of Students	Number of Records
Initial File	6,795	7,157
Exclude those not in grades 4-8 in 2010-11	-4,723	-4,998
Final	2,072	2,159
Part II: Split the File by Subject Area				

	Reading		Math	
	Number of Students	Number of Records	Number of Students	Number of Records
Initial file	1,916	1,993	1,983	2,064
Exclude those who did not attend the same school for the entire 2010-11 school year	-217	-221	-232	-236
Exclude those identified as special education	-280	-290	-286	-298
Exclude those identified as LEP	-72	-77	-73	-78
Exclude those missing ARMT test data for 2010-11	-36	-36	-20	-20
Exclude those missing ARMT test data for 2009-10	-55	-55	-63	-63
Exclude those missing valid data for start date of service and hours of service	-183	-225	-191	-235
Exclude those receiving service after the test date	-9	-9	-9	-9
Exclude those with same IDs but inconsistent student names across the SES and test files	0	-1	0	-2
Final	1,064	1,079	1,109	1,123

Part III: Creation of State-Level SES Sample		
	Reading	Math
Combine the hours of service for those who had different providers at the same school	Number of Students	Number of Students
Initial file	1,064	1,109
Exclude those who did not meet the minimum 12 hours and 50% of attendance requirements	-245	-259
Exclude those repeating grade for both 2009-10 and 2010-11	-6	-9
Exclude those with inconsistent grade levels across SES and test data files.	-11	-10
State-Level SES Sample	**802**	**831**

Part IV: Creation of Provider-Level SES Sample		
	Reading	Math
	Number of Students	Number of Students
Initial file	802	831
Exclude those with different providers within the same school	-4	-4
Exclude those providers with less than 10 students remaining	-15	-14
Provider-Level SES Sample	**783**	**813**

Control Group Selection

Table B-2 illustrates the steps taken to obtain the control groups by subject area prior to matching. There were initially 399,413 records in the 2010-11 test data file and 397,696 records in the 2009-10 ARMT data file. After excluding records with missing students IDs and students who had multiple records, 399,159 and 397,576 records remained in the 2010-11 and 2009-10 test files, respectively. The final control groups used for matching to SES students included 225,510 control students in Reading and 225,083 control students in Math.

Table B-2: Control Group Matching File

Part I: Initial Test Data Files	2009-10 Test Data File	2010-11 Test Data File
	Number of Records	
Initial file	397,696	399,413
Exclude those with missing IDs	0	-142
Exclude those having duplicate records	-120	-112
	397,576	399,159
Final file after merging 2009-10 and 2010-11 test data files	517,070	
Part II: Merged 2009-10 and 2010-11 Test Data Files		
	Number of Students	
Initial file	517,070	
Exclude those not in grades 4-8 in 2010-11	-224,762	
Exclude those who did not attend the same school for the entire 2010-11 school year	-17,442	
Exclude those identified as special education	-28,353	
Exclude those identified as LEP	-4,201	
Exclude those missing grade level data for 2009-10 or 2010-11	-7,854	
Exclude those repeating grade or those whose grade level did not match test level	-2,266	
Final	232,192	
Part III: Split by Subject Area		
	Reading	Math
	Number of Students	
Initial file	232,192	232,192
Exclude those missing ARMT test data for 2010-11	-1,207	-1,508
Exclude those missing ARMT test data for 2009-10	-4,112	-4,236
Exclude students identified in the SES data file	-1,363	-1,365
Final	**225,510**	**225,083**

SES and Control Group Matching

After the final groups of SES and control students were obtained, SES students were matched with comparable control students who did not receive SES tutoring, based on the following criteria:

1. Prior-year scale score in Reading (+/-5) or Math (+/-5);
2. 2010-11 grade level;
3. Free/reduced priced meal status: (a), 2 levels (free/reduced meal, full pay) or (b) 3 levels (free meal, reduced meal, and full pay);
4. School;
5. District;
6. Ethnicity; and
7. Gender.

The first three criteria, with meal status having two levels, were required to be satisfied for all matching. Matching on school, district, ethnicity, and gender were desirable, but not required, criteria. The best matches were those satisfying all seven criteria, (including meal status at three levels (i.e., exact matches)). In cases where best matches could not be obtained, the desirable

criteria were dropped, as follows, from the least important to the most important so that the matched-sample sizes were kept as large as possible:

1. meal status with three levels only;
2. gender only;
3. gender and meal status with three levels;
4. ethnicity only;
5. race and meal status with three levels;
6. gender and ethnicity;
7. gender, ethnicity and meal status with three levels;
8. school only;
9. school and meal status with three levels;
10. school and gender;
11. school, gender and meal status with three levels;
12. school and ethnicity;
13. school, ethnicity and meal status with three levels;
14. school, gender, and ethnicity;
15. school, gender, ethnicity, and meal status with three levels; and
16. district only.

Table B-3 illustrates the discrepancies on matching criteria for the state sample in Reading and Math.

Table B-3: SES and Control Group Matches

Matching Criteria	Reading		Math	
	Number of Pairs	Percentage of Pairs	Number of Pairs	Percentage of Pairs
Exact match	360	44.9	404	48.6
Different meal status (3 levels)	34	4.2	37	4.5
Different gender	97	12.1	83	10.0
Different gender and meal status (3 levels)	15	1.9	13	1.6
Different ethnicity	31	3.9	24	2.9
Different ethnicity and meal status (3 levels)	5	0.6	6	0.7
Different gender and ethnicity	13	1.6	16	1.9
Different gender, ethnicity and meal status (3 levels)	1	0.1	1	0.1
Different school within same district	198	24.7	203	24.4
Different school and meal status (3 levels)	6	0.7	11	1.3
Different school and gender	10	1.2	8	1.0
Different school, gender and meal status (3 levels)	1	0.1	1	0.1
Different school and ethnicity	8	1.0	4	0.5
Different school, ethnicity and meal status (3 levels)	0	0.0	0	0.0
Different school, gender and ethnicity	1	0.1	3	0.4
Different school, gender, ethnicity and meal status (3 levels)	1	0.1	0	0.0
Different district	21	2.6	17	2.0
Total for State-Level Sample	**802**	**100.0**	**831**	**100.0**
Exclude students with different providers within the same school	-4		-4	
Exclude providers with less than 10 students remaining	-15		-14	
Total for Provider-Level Sample	**783**		**813**	

State-Level Matching

For the state-level matching in Reading, of the 802 SES students available for matching 802 students (100%), from 13 different providers across 26 schools in 16 districts were matched with controls. Of these 802 pairs, 360 (45%) had best matches that satisfied all criteria. For the state-level matching in Math, of the 831 SES students available for matching, 831 (100%) students from 13 different providers across 26 schools in 16 districts, were matched with controls. Of these 831 pairs, 404 (49%) had best matches that satisfied all criteria.

Provider-Level Matching

For the provider-level matching, 802 students were in Reading and 831 students were in Math from the state-level samples. Students with different providers within the same school and those providers with less than 10 students remaining from the state-level matched-samples were excluded. Following this exclusion, 783 students, from 11 different providers across 26 schools

in 16 districts, for Reading and 813 students, from 11 different providers across 26 schools in 16 districts, for Math remained for the provider-level analyses.

A breakdown of the demographic characteristics of the SES and control students in the final state-level samples by content area is presented in Table B-4. Overall, for both the SES and control group samples in both subjects, the following could be said:

- The percentage of females is slightly higher than that of males.
- The percentage of elementary school students (4th and 5th graders) is slightly higher than that of middle school students (6th, 7th, and 8th graders).
- About three-quarters are African-American and one-fifth are white.
- A super majority (about 90%) of students are eligible for free or reduced meals.

Table B-4: SES and Control Group Characteristics for the Final State-Level Samples

Demographic Characteristic	Reading		Math	
	SES	Control	SES	Control
Female	54.86	52.49	54.63	54.03
Male	45.14	47.51	45.37	45.97
Asian	0.00	0.12	0.00	0.12
African-American	74.94	73.69	75.69	74.85
Hispanic	3.62	3.87	3.27	3.13
American Indian	2.37	0.75	2.29	1.32
Multi-Racial	0.12	0.12	0.36	0.12
White	18.95	21.45	18.29	20.46
Eligible for Free/Reduced Meal	90.27	90.27	90.49	90.49
4th Grade	21.70	21.70	20.22	20.22
5th Grade	30.55	30.55	31.65	31.65
6th Grade	18.33	18.33	18.17	18.17
7th Grade	14.84	14.84	14.56	14.56
8th Grade	14.59	14.59	15.40	15.40

Appendix C

Statistical Outcomes

For unadjusted means (i.e., not controlling for prior-year achievement), Hedges's g effect size was computed as the mean difference of achievement scale scores (SES − control) divided by the pooled within-group standard deviation. For adjusted means (i.e. adjusted for prior-year achievement), the adjusted effect size was computed as the mean difference of adjusted achievement scale scores ($SES_{adjusted}$ − $control_{adjusted}$) divided by the pooled within-group standard deviation. For both, the resulting Hedges's g was multiplied by a correction term for small samples to get an unbiased estimate of the effect size (g^*).

According to commonly accepted benchmarks (Cohen, 1988), positive or negative effect sizes of 0.20 are thought small, those that are at plus or minus 0.50 are regarded as moderate, and those that are equal to or surpass 0.80 are considered large. More recently, statisticians have argued that an effect size should be interpreted in light of what is typically observed in the literature in similar studies. Therefore, using guidelines proposed by Vernez and Zimmer (2007), effect sizes of 0.04 or less were classified as very small, between 0.05 and 0.10 were classified as small, between 0.11 and 0.24 were classified as moderate, and 0.25 and greater classified as large.

To help put the effect sizes into context, they were also converted to average percentile standing scores, which range from 1 to 99 and tell the average percentile standing of the average SES student relative to the average control student. For example, a g^* of 0.0 indicates that the mean (i.e., average) of the SES group is at the 50th percentile of the control group. A g^* of 0.10 would indicate that the mean of the SES group is at the 54th percentile of the control group, while a g^* of -0.10 would indicate that the mean of the SES group is at the 46th percentile of the control group.

Prior to the matched-samples analyses, an ANOVA was performed to determine if there was a statistically significant difference in prior-year (2009-10) performance between (1) SES students who were included in the analyses (i.e., had 12 or more hours of tutoring and attended at least 50 percent of their contracted hours) and (2) SES students who were not included in the analyses (i.e., either had less than 12 hours of tutoring or attended less than 50% of their contracted hours, regardless of the number of hours attended). If differences in prior-year achievement between the two SES groups were statistically significant, then differences in the outcomes between SES students included and controls may not generalize to the total SES

population. In other words, if there were a statistically significant difference between SES students included and not included in the analyses, any subsequent differences between SES students included in the analyses and controls could be related to the type of SES student included (i.e., based on the SES student's prior-year achievement) vs. the impact of attending a SES program.

As can be seen in Table C-1, after applying the Benjamini-Hochberg correction for multiple comparisons, there was a statistically significant difference in prior-year achievement in Math between SES students included and not included in the analyses. The effect in Math was moderate and negative (-0.17), indicating that SES students who had 12 or more hours of Math tutoring and attended at least 50% of their contracted hours had slightly lower achievement in 2009-10, putting them at the 43th percentile of the group of SES students who had less than 12 hours of tutoring in Math or did not attend at least 50% of their contracted hours. While not statistically significant, in Reading, there was a moderate negative effect (-0.17), indicating that SES students included in the analyses of Reading outcomes had slightly lower 2009-10 achievement scores compared to SES students not included, placing them at the 43th percentile of the group of SES students not included in the Reading analyses. It appears, therefore, that students with lower achievement in the prior year are attending more hours of SES and completing a higher percentage of their contracted hours.

Table C-1: ANOVA Outcomes – SES Students with ≥ 12 Hrs of Tutoring who Attended ≥ 50% of Contracted Hrs Compared with SES Students with Either < 12 Hrs of Tutoring or < 50%of Contracted Hrs Attended by Subject

Subject	At least 12 hours of Service and at least 50% of Contracted Hours Attended			Less than 12 hours of Service or less than 50% of Contracted Hours Attended			F	p	Effect Size ($g*$)	Average Percentile Standing
	N	M	SD	N	M	SD				
Reading	802	627.71	33.89	240	633.34	32.21	5.21	0.023	-0.17	43
Math	831	628.01	35.34	253	634.13	34.33	5.89	0.015*	-0.17	43
*Statistically significant at α=0.05 after Benjamini-Hochberg correction for multiple comparisons										

As two years of data (2009-10 and 2010-11) were used, statistical analyses were performed to test the relationship between the prior-year (pre-) and current scores, in order to ensure the data met one of the requirements for using ANCOVA. Correlations between the 2009-10 and 2010-11 ARMT scale scores, 0.78 for Reading and 0.67 for Math, indicate a strong linear relationship between the covariates and the outcome variables. As shown by the ANOVA results in Table C-2 and Table C-3 for both Reading and Math, there was no statistically significant difference between SES and control students on prior year (2009-10) achievement,

confirming the quality of the matching process. Effect sizes ($g*$) were near zero, and Average Percentile Standings were close to 50.

Table C-2: Reading Pre-Score ANOVA

Provider	*N*	SES		Control		*F*	*p*	Effect Size ($g*$)	Average Percentile Standing
		M	SD	M	SD				
A to Z Tutoring	113	634.50	29.40	634.14	29.38	0.01	0.928	0.01	50
A+ Tutors for Scholars	23	631.22	30.20	631.26	30.65	0.00	0.996	0.00	50
Achievement Academy	94	626.93	30.00	626.99	29.98	0.00	0.988	0.00	50
All About Partners in Education	74	623.39	33.45	623.38	33.44	0.00	0.998	0.00	50
Appleton Learning	283	634.12	34.90	634.12	34.53	0.00	1.000	0.00	50
Capitol School	11	614.73	39.09	613.91	38.78	0.00	0.961	0.02	51
Carter Reddy and Associates	12	618.50	30.93	617.42	30.97	0.01	0.932	0.03	51
Huntsville City Schools	20	597.15	29.32	597.85	29.07	0.01	0.940	-0.02	49
Learn-It Systems	122	623.57	34.63	623.64	34.67	0.00	0.987	0.00	50
Rocket Learning, LLC	19	603.16	21.76	603.89	21.96	0.01	0.918	-0.03	49
Sylvan of Birmingham/Roebuck	12	622.08	35.09	621.42	34.58	0.00	0.963	0.02	51
Statewide	**802**	**627.71**	**33.89**	**627.70**	**33.68**	**0.00**	**0.995**	**0.00**	**50**

Table C-3: Math Pre-Score ANOVA

Provider	*N*	SES		Control		*F*	*p*	Effect Size ($g*$)	Average Percentile Standing
		M	SD	M	SD				
A to Z Tutoring	114	629.84	32.58	630.26	32.29	0.01	0.922	-0.01	49
A+ Tutors for Scholars	25	619.84	30.53	619.44	30.91	0.00	0.964	0.01	51
Achievement Academy	90	629.94	35.36	630.24	34.87	0.00	0.954	-0.01	50
All About Partners in Education	70	623.01	26.01	623.67	25.83	0.02	0.881	-0.03	49
Appleton Learning	295	633.88	37.36	633.84	37.37	0.00	0.990	0.00	50
Capitol School	11	624.64	29.96	625.55	29.38	0.01	0.943	-0.03	49
Carter Reddy and Associates	12	615.08	39.70	615.83	39.52	0.00	0.963	-0.02	49
Huntsville City Schools	20	600.05	31.20	600.35	30.15	0.00	0.976	-0.01	50
Learn-It Systems	147	627.19	36.38	627.12	36.26	0.00	0.986	0.00	50
Rocket Learning, LLC	16	606.25	23.75	606.00	22.66	0.00	0.976	0.01	50
Sylvan of Birmingham/Roebuck	13	626.54	24.99	627.15	24.49	0.00	0.950	-0.02	49
Statewide	**831**	**628.01**	**35.34**	**628.16**	**35.18**	**0.01**	**0.930**	0.00	50

Alabama Reading and Mathematics Test (ARMT): Reading Results

Based on their prior-year (2009-10) ARMT scale scores, SES and matched control students included in the analyses were divided into three achievement blocks for the state-level and provider-level analyses in Reading as follows:

- **Lowest scoring block** for students with the lowest range of scale scores in 2009-10 (scale score below 612).

- **Middle scoring block** for students whose scores fell in the middle range of scale scores in 2009-10 (scale score from 612 to 642).

- **Highest scoring block** for students with the highest range of scale scores in 2009-10 (scale score above 642).

As a result, 802 pairs available for the state level analysis in Reading were divided into 266, 271, and 265 pairs for the lowest, middle, and highest scoring blocks respectively. Of 783

pairs available at the provider level, 256, 265, and 262 pairs fell into the lowest, middle, and highest blocks, respectively. Statistical analyses were only conducted for the state (i.e., all providers combined) and for individual providers that had at least 10 students available. Consequently, significance levels for providers were reported only for blocks where a provider had at least 10 students available for analysis. The Hedges's *g* effect sizes were reported for all available providers in each block, regardless of the number of students available for that provider. A positive adjusted effect size indicates that SES adjusted group mean was higher than the control group adjusted mean. However, only if the difference in means was statistically significant can we state with confidence that the adjusted effect size difference was most likely real and not due to chance.

State-Level

- After controlling for prior-year achievement, for the lowest and middle scoring blocks no statistically significant differences were found between SES students and controls (see Table C-4 and C-5).

- While not statistically significant, the small adjusted effect sizes (Hedges's *g**) for the lowest scoring block ($g = -0.09$) and for the middle scoring block ($g = -0.07$) indicated that the 2010-11 adjusted mean scale scores were slightly lower for SES students in these two blocks compared to controls, putting SES students at the 46th and 47th percentile of the control groups for the lowest and middle scoring blocks, respectively.

- For the highest scoring block, after controlling for prior-year achievement and applying the Benjamini-Hochberg correction to control for multiple comparisons, ANCOVA revealed a statistically significant difference in 2010-11 adjusted mean scale scores between the SES and control groups (see Table C-6). The moderate adjusted effect size of -0.23 indicated that the average 2010-11 achievement score was significantly lower for SES students, putting them at the 41st percentile of the control group.

Provider-Level

Lowest Scoring Block

- Table C-7As shown in Table C-4 and C-7, of 11 Reading providers in the lowest scoring block, 4 providers had less than 10 students available: A+ Tutors for Scholar, Capitol School, Carter Reddy and Associates, and Sylvan of Birmingham/Roebuck. The adjusted effect sizes for these providers ranged from -0.40 to 0.56.

- After applying the Benjamini-Hochberg correction for multiple comparisons, the ANCOVA revealed statistically significant differences in 2010-11 adjusted mean scale scores between the SES and control group for two of seven Reading providers with at least 10 students available to be analyzed: Huntsville City Schools and Appleton Learning.

  - For Huntsville City Schools, SES students significantly outperformed controls, with a large positive adjusted effect size (0.73), putting the SES group mean at the 77th percentile of the control group.

  - For Appleton Learning, the adjusted mean scale score for SES students was significantly lower than their matched controls, with a large negative adjusted effect size of -0.41, putting the SES group mean at the 34th percentile of the control group.

- After controlling for prior-year achievement, no statistically significant differences in 2010-11 achievement scores between SES and control students were found for five Reading providers: A to Z Tutoring, Achievement Academy, All About Partners in Education, Learn-It Systems, and Rocket Learning, LLC. Although not statistically significant, Rocket Learning,, LLC had a moderate positive adjusted effect size (0.22), Learn-It Systems had a small positive adjusted effect size (0.08), and three other providers had negative adjusted effect sizes ranging from -0.07 to -0.21.

Table C-4: Reading ANCOVA Outcomes by Provider - Lowest Scoring Block

Provider	N	SES			Control			F	p	Effect Size (g)	Adj. Effect Size ($g*$)	Average Percentile Standing
		M	SD	Adj. M	M	SD	Adj. M					
A to Z Tutoring	29	616.79	18.58	616.67	617.97	23.70	618.08	0.08	0.782	-0.05	-0.07	47
A+ Tutors for Scholars	6	620.83	18.13	620.63	632.50	35.42	632.71	NA	NA	-0.38	-0.40	35
Achievement Academy	30	618.43	21.96	618.38	623.30	25.24	623.35	0.70	0.405	-0.20	-0.21	42
All About Partners in Education	29	615.93	21.29	615.95	619.48	19.32	619.46	0.46	0.500	-0.17	-0.17	43
Appleton Learning	73	613.14	21.17	613.24	622.45	22.96	622.35	7.27	.008*	-0.42	-0.41	34
Capitol School	7	608.29	21.58	608.01	615.57	26.51	615.85	NA	NA	-0.28	-0.30	38
Carter Reddy and Associates	6	617.50	20.89	617.29	598.33	38.50	598.54	NA	NA	0.57	0.56	71
Huntsville City Schools	13	625.69	21.80	626.18	608.08	27.20	607.59	7.23	0.013*	0.69	0.73	77
Learn-It Systems	47	611.87	21.12	611.90	610.32	21.30	610.29	0.19	0.665	0.07	0.08	53
Rocket Learning, LLC	11	609.27	26.79	609.98	604.91	23.64	604.20	0.53	0.477	0.17	0.22	59
Sylvan of Birmingham/Roebuck	5	611.20	29.58	610.92	613.20	27.96	613.49	NA	NA	-0.06	-0.08	47
Statewide	266	614.72	21.33	614.79	617.00	24.47	616.94	1.44	0.231	-0.10	-0.09	46

*Statistically significant at α=0.05 after Benjamini-Hochberg correction for multiple comparisons

Middle Scoring Block

- As shown in Table C-5 and Table C-7, of 11 Reading providers in the middle scoring block, 6 providers had less than 10 students available: A+ Tutors for Scholar, Capitol School, Carter Reddy and Associates, Huntsville City Schools, Rocket Learning, LLC, and Sylvan of Birmingham/Roebuck. The adjusted effect size was not available for Capitol School because only one student was available in each group, meaning no standard deviation was available. The adjusted effect sizes for the other five providers ranged from -1.28 to 0.14.

- After applying the Benjamini-Hochberg correction for multiple comparisons, the ANCOVA revealed no statistically significant differences in 2010-11 adjusted mean scale scores between the SES and control group for any of the five Reading providers with at least 10 students available to be analyzed.

- While not statistically significant, A to Z Tutoring (0.53) and Achievement Academy (0.05) had positive adjusted effect sizes, while All About Partners in Education, Appleton Learning, and Learn-It Systems had negative adjusted effect sizes, ranging from -0.27 to -0.21.

Table C-5: Reading ANCOVA Outcomes by Provider - Middle Scoring Block

Provider	N	SES			Control			F	p	Effect Size (g)	Adj. Effect Size (g*)	Average Percentile Standing
		M	SD	Adj. M	M	SD	Adj. M					
A to Z Tutoring	42	644.24	17.38	644.06	634.21	18.90	634.39	6.67	0.012	0.55	0.53	70
A+ Tutors for Scholars	9	628.33	17.94	628.27	634.44	25.79	634.51	NA	NA	-0.26	-0.27	39
Achievement Academy	38	643.24	22.23	643.41	642.39	22.56	642.22	0.06	0.804	0.04	0.05	52
All About Partners in Education	21	644.19	16.09	644.14	649.19	20.96	649.24	0.83	0.368	-0.26	-0.27	39
Appleton Learning	95	641.18	18.40	641.26	645.26	19.35	645.18	2.29	0.132	-0.22	-0.21	42
Capitol School	1	665.00	NA	NA	679.00	NA	NA	NA	NA	NA	NA	NA
Carter Reddy and Associates	4	626.00	20.17	626.00	621.50	35.86	621.50	NA	NA	0.13	0.13	55
Huntsville City Schools	6	648.67	19.80	648.04	644.17	23.13	644.79	NA	NA	0.19	0.14	56
Learn-It Systems	38	636.00	19.48	635.92	640.74	22.44	640.81	1.36	0.248	-0.22	-0.23	41
Rocket Learning, LLC	7	631.43	30.05	632.76	637.43	42.69	636.09	NA	NA	-0.15	-0.08	47
Sylvan of Birmingham/Roebuck	4	649.75	5.25	649.70	660.75	9.32	660.80	NA	NA	-1.26	-1.28	10
Statewide	271	640.86	19.32	640.86	642.38	21.93	642.38	0.84	0.359	-0.07	-0.07	47

*Statistically significant at α=0.05 after Benjamini-Hochberg correction for multiple comparisons

Highest Scoring Block

- As shown in Table C-6 and Table C-7, of 11 Reading providers in the highest scoring block, 6 providers had less than 10 students available: A+ Tutors for Scholar, Capitol School, Carter Reddy and Associates, Huntsville City Schools, Rocket Learning, LLC, and Sylvan of Birmingham/Roebuck. As they both had only one student in each group, the adjusted effect sizes were not available for Huntsville City Schools and Rocket Learning, LLC as the standard deviation was not available. The adjusted effect sizes for the four available providers ranged from -0.59 to 1.30.

- After applying the Benjamini-Hochberg correction for multiple comparisons, the ANCOVA revealed no statistically significant differences in 2010-11 adjusted mean scale scores between the SES and control group for any of the five Reading providers with at least 10 students available to be analyzed. Although not statistically significant, Learn-It Systems had a small, positive adjusted effect size of 0.10; Appleton Learning had a moderate negative adjusted effect size (-0.18); and A to Z Tutoring (-0.50), Achievement Academy (-0.47), and All About Partners in Education (-0.52) had large negative adjusted effect sizes.

Table C-6: Reading ANCOVA Outcomes by Provider - Highest Scoring Block

Provider	N	SES			Control			F	p	Effect Size (g)	Adj. Effect Size (g*)	Average Percentile Standing
		M	SD	Adj. M	M	SD	Adj. M					
A to Z Tutoring	42	664.10	20.34	664.01	674.74	22.60	674.83	7.65	0.007	-0.49	-0.50	31
A+ Tutors for Scholars	8	665.25	24.36	665.48	677.00	22.47	676.77	NA	NA	-0.47	-0.46	32
Achievement Academy	26	663.92	22.77	663.90	673.69	18.05	673.71	3.56	0.065	-0.47	-0.47	32
All About Partners in Education	24	669.08	17.46	669.10	679.50	21.58	679.49	4.32	0.044	-0.52	-0.52	30
Appleton Learning	115	671.71	23.66	671.56	675.54	22.92	675.69	2.80	0.096	-0.16	-0.18	43
Capitol School	3	692.00	20.81	693.97	666.33	15.04	664.37	NA	NA	1.13	1.30	90
Carter Reddy and Associates	2	675.50	33.23	674.97	650.00	1.41	650.53	NA	NA	0.62	0.59	72
Huntsville City Schools	1	652.00	NA	NA	646.00	NA	NA	NA	NA	NA	NA	NA
Learn-It Systems	37	669.78	19.95	669.87	667.73	22.46	667.64	0.27	0.602	0.10	0.10	54
Rocket Learning, LLC	1	670.00	NA	NA	665.00	NA	NA	NA	NA	NA	NA	NA
Sylvan of Birmingham/Roebuck	3	638.33	27.06	638.58	659.00	27.50	658.75	NA	NA	-0.61	-0.59	28
Statewide	265	668.85	22.20	668.76	673.76	22.20	673.84	9.56	0.002*	-0.22	-0.23	41

*Statistically significant at α=0.05 after Benjamini-Hochberg correction for multiple comparisons

Table C-7: Reading Relative Effect Sizes (Hedges's g*) by Provider and Scoring Block

Provider	Lowest Scoring Block	Middle Scoring Block	Highest Scoring Block
A to Z Tutoring	small (-0.07)	large (0.53)	large (-0.5)
A+ Tutors for Scholars	large (-0.4)	large (-0.27)	large (-0.46)
Achievement Academy	moderate (-0.21)	small (0.05)	large (-0.47)
All About Partners in Education	moderate (-0.17)	large (-0.27)	large (-0.52)
Appleton Learning	large (-0.41)	moderate (-0.21)	moderate (-0.18)
Capitol School	large (-0.3)	NA	large (1.3)
Carter Reddy and Associates	large (0.56)	moderate (0.13)	large (0.59)
Huntsville City Schools	large (0.73)	moderate (0.14)	NA
Learn-It Systems	small (0.08)	moderate (-0.23)	small (0.1)
Rocket Learning, LLC	moderate (0.22)	small (-0.08)	NA
Sylvan of Birmingham/Roebuck	small (-0.08)	large (-1.28)	large (-0.59)
Statewide	small (-0.09)	small (-0.07)	moderate (-0.23)

Red=Negative Effect Size, Green=Positive Effect Size

Alabama Reading and Mathematics Test (ARMT) in Math Results

Based on their prior-year (2009-10) achievement ARMT scale scores, SES and matched control students included in the analyses were divided into three blocks for the state-level and provider-level analyses in Math as follows:

- **Lowest scoring block** for students with the lowest range of scale scores in 2009-10 (scale score below 614).

- **Middle scoring block** for students whose scores fell in the middle range of scale scores in 2009-10 (scale score of 614 to 640).

- **Highest scoring block** for students with the highest range of scale scores in 2009-10 (scale score above 640).

As a result, 831 pairs available for the state level analysis in Math were divided into 281, 278, and 272 pairs for the lowest, middle, and highest scoring blocks respectively. Of 813 pairs available at the provider level, 271, 272 and 270 fell into the lowest, middle and highest blocks respectively. Statistical analyses were only conducted for the state (i.e., all providers combined) and for individual providers that had at least 10 students available. Consequently, significance levels for providers were reported only for blocks where a provider had at least 10 students available for analysis. The Hedges's *g* effect sizes were reported for all available providers in each block, regardless of the number of students available for that provider. A positive adjusted effect size indicates that SES adjusted group mean was higher than the control group adjusted mean. However, only if the difference in means was statistically significant can we state with confidence that the adjusted effect size difference was most likely real and not due to chance.

State-Level

- For all three scoring blocks, no statistically significant differences between SES students and controls were found (see Table C-8, Table C-9, and Table C-10)after controlling for prior-year achievement and applying the Benjamini-Hochberg correction for multiple comparisons.

- While not statistically significant, the small adjusted effect sizes (Hedges's *g**) for the lowest ($g = -0.06$) and middle ($g = -0.07$) scoring blocks, and the moderate adjusted effect size for the highest scoring block ($g = -0.16$) indicated that the 2010-11 adjusted mean scale scores were slightly lower for SES students in these three blocks compared to controls, putting SES students at the 48th, 47th, and 44th percentile of the control groups respectively.

Provider-Level

Lowest Scoring Block

- As shown in Table C-8 and Table C-11, of 11 Math providers in the lowest scoring block, 4 providers had less than 10 students available: Capitol School, Carter Reddy and Associates, Rocket Learning, LLC and Sylvan of Birmingham/Roebuck. The adjusted effect sizes for these providers ranged from -0.46 to 0.50.

- After controlling for prior-year achievement, there were no statistically significant differences between SES and control students in 2010-11 adjusted achievement scores for

any of the seven Math providers with at least 10 students available to be analyzed: A to Z Tutoring, A+ Tutors for Scholar, All About Partners in Education, Appleton Learning, Achievement Academy, Huntsville City Schools, and Learn-It Systems. Although not statistically significant, the first four providers had very small to small positive adjusted effect size ranging from 0.03 to 0.11. The last three had negative adjusted effect sizes ranging from -0.45 to -0.03.

Table C-8: Math ANCOVA Outcomes by Provider - Lowest Scoring Block

| Provider | N | SES | | | Control | | | F | p | Effect Size (g) | Adj. Effect Size (g*) | Average Percentile Standing |
		M	SD	Adj. M	M	SD	Adj. M					
A to Z Tutoring	34	626.44	30.43	626.71	626.09	29.29	625.82	0.02	0.891	0.01	0.03	51
A+ Tutors for Scholars	10	630.40	20.27	630.04	628.30	18.01	628.66	0.03	0.873	0.10	0.07	53
Achievement Academy	31	636.65	30.31	636.72	648.61	21.33	648.54	3.14	0.082	-0.45	-0.45	33
All About Partners in Education	22	620.82	21.57	621.03	618.64	26.71	618.43	0.13	0.716	0.09	0.11	54
Appleton Learning	85	629.96	27.51	629.99	628.79	29.21	628.77	0.09	0.763	0.04	0.04	52
Capitol School	4	617.50	21.02	618.40	618.25	23.27	617.35	NA	NA	-0.03	0.04	52
Carter Reddy and Associates	5	609.00	42.23	610.13	628.20	21.30	627.07	NA	NA	-0.52	-0.46	32
Huntsville City Schools	15	623.13	25.50	623.15	629.53	26.78	629.52	0.43	0.518	-0.24	-0.24	41
Learn-It Systems	52	623.69	27.19	623.69	624.40	24.65	624.40	0.02	0.888	-0.03	-0.03	49
Rocket Learning, LLC	9	630.11	25.35	630.52	629.11	25.79	628.70	NA	NA	0.04	0.07	53
Sylvan of Birmingham/Roebuck	4	635.50	4.20	635.16	622.75	29.23	623.09	NA	NA	0.53	0.50	69
Statewide	281	626.98	27.35	627.08	628.77	27.05	628.67	0.54	0.464	-0.07	-0.06	48

Middle Scoring Block

- As shown in Table C-9 and Table C-11, of 11 Math providers in the middle scoring block, 6 providers had less than 10 students available: A+ Tutors for Scholar, Capitol School, Carter Reddy and Associates, Huntsville City Schools, Rocket Learning, LLC and Sylvan of Birmingham/Roebuck. The adjusted effect sizes for these providers ranged from -1.30 to 0.62.

- After applying the Benjamini-Hochberg correction for multiple comparisons, the ANCOVA revealed a statistically significant difference in 2010-11 adjusted mean scale scores between the SES and control group for one of the five Math providers with at least 10 students available to be analyzed: Learn-It Systems. SES students significantly outperformed controls, with a large positive adjusted effect size (0.50), putting the SES group mean at the 69th percentile of the control group. This outcome is noteworthy considering that overall, SES students included in the Math analyses scored statistically significantly lower than SES students not included in the analyses. Therefore, it appears

that Learn-It Systems was more effective in working with this lower performing group of SES students.

- There were no statistically significant differences in adjusted 2010-11 achievement scores between SES and control students for the four remaining Math providers with at least 10 students available to be analyzed: All About Partners in Education, A to Z Tutoring, Achievement Academy, and Appleton Learning. Although not statistically significant, All About Partners in Education had a moderate positive adjusted effect size of 0.22. The latter three had negative adjusted effect sizes ranging from -0.33 to -0.25.

Table C-9: Math ANCOVA Outcomes by Provider - Middle Scoring Block

| Provider | N | SES | | | Control | | | F | p | Effect Size (g) | Adj. Effect Size (g*) | Average Percentile Standing |
		M	SD	Adj. M	M	SD	Adj. M					
A to Z Tutoring	38	654.76	23.27	654.86	663.21	26.64	663.11	2.04	0.157	-0.33	-0.33	37
A+ Tutors for Scholars	7	637.00	22.56	636.97	653.57	23.82	653.61	NA	NA	-0.67	-0.67	25
Achievement Academy	30	649.43	25.61	649.49	656.40	27.49	656.35	1.22	0.274	-0.26	-0.25	40
All About Partners in Education	31	648.84	15.76	649.00	644.52	25.32	644.35	0.77	0.385	0.20	0.22	59
Appleton Learning	95	650.25	24.77	650.23	656.35	19.30	656.37	3.81	0.052	-0.27	-0.28	39
Capitol School	5	664.40	29.49	665.09	674.20	32.78	673.51	NA	NA	-0.28	-0.24	40
Carter Reddy and Associates	5	641.20	25.86	641.20	621.60	31.26	621.60	NA	NA	0.62	0.62	73
Huntsville City Schools	3	648.67	22.14	648.67	644.33	23.86	644.33	NA	NA	0.15	0.15	56
Learn-It Systems	45	655.44	34.14	655.48	640.73	23.51	640.70	5.82	0.018*	0.50	0.50	69
Rocket Learning, LLC	7	636.00	15.85	636.66	665.00	23.44	664.34	NA	NA	-1.36	-1.30	10
Sylvan of Birmingham/Roebuck	6	652.50	41.59	653.58	637.67	30.20	636.58	NA	NA	0.38	0.43	67
Statewide	278	650.72	26.00	650.80	652.59	25.26	652.51	0.65	0.419	-0.07	-0.07	47
*Statistically significant at α=0.05 after Benjamini-Hochberg correction for multiple comparisons.												

Highest Scoring Block

- As shown in Table C-10 and Table C-11, of 10 Math providers in the highest scoring block, 5 providers had less than 10 students available: A+ Tutors for Scholars, Capitol School, Carter Reddy and Associates, Huntsville City Schools, and Sylvan of Birmingham/Roebuck. The adjusted effect sizes for these providers ranged from -0.65 to 0.13.

- There were no statistically significant differences in adjusted 2010-11 achievement scores between SES and control students for any of the five Math providers with at least 10 students available to be analyzed: Achievement Academy, A to Z Tutoring, All About Partners in Education, Appleton Learning, and Learn-It Systems. Although not statistically significant, Achievement Academy had a very small positive adjusted effect

size (0.04), while the remaining four had negative adjusted effect sizes ranging from -0.44 to -0.13.

Table C-10: Math ANCOVA Outcomes by Provider - Highest Scoring Block

| Provider | N | SES | | | Control | | | F | p | Effect Size (g) | Adj. Effect Size (g*) | Average Percentile Standing |
		M	SD	Adj. M	M	SD	Adj. M					
A to Z Tutoring	42	677.10	33.76	677.04	681.19	30.52	681.25	0.37	0.545	-0.13	-0.13	45
A+ Tutors for Scholars	8	648.75	25.34	648.40	646.38	24.52	646.72	NA	NA	0.09	0.06	53
Achievement Academy	29	682.52	30.68	682.52	681.34	30.41	681.34	0.03	0.873	0.04	0.04	52
All About Partners in Education	17	662.41	23.99	662.56	674.18	26.36	674.03	2.13	0.155	-0.46	-0.44	33
Appleton Learning	115	683.35	29.76	683.32	687.78	26.21	687.81	2.28	0.132	-0.16	-0.16	44
Capitol School	2	689.00	16.97	689.00	689.00	16.97	689.00	NA	NA	0.00	0.00	50
Carter Reddy and Associates	2	712.00	15.56	712.00	703.00	55.15	703.00	NA	NA	0.13	0.13	55
Huntsville City Schools	2	640.50	20.51	640.63	646.50	28.99	646.37	NA	NA	-0.14	-0.13	45
Learn-It Systems	50	666.44	24.21	666.38	672.66	29.97	672.72	1.55	0.216	-0.23	-0.23	41
Sylvan of Birmingham/Roebuck	3	664.00	43.49	663.50	690.00	18.68	690.50	NA	NA	-0.62	-0.65	26
Statewide	272	676.68	30.32	676.64	681.29	29.27	681.33	4.35	0.038	-0.15	-0.16	44

*Statistically significant at α=0.05 after Benjamini-Hochberg correction for multiple comparisons

Table C-11: Math Relative Effect Sizes (Hedges's g*) by Provider and Scoring Block

Provider	Lowest Scoring Block	Middle Scoring Block	Highest Scoring Block
A to Z Tutoring	very small (0.03)	large (-0.33)	moderate (-0.13)
A+ Tutors for Scholars	small (0.07)	large (-0.67)	small (0.06)
Achievement Academy	large (-0.45)	large (-0.25)	very small (0.04)
All About Partners in Education	moderate (0.11)	moderate (0.22)	large (-0.44)
Appleton Learning	very small (0.04)	large (-0.28)	moderate (-0.16)
Capitol School	very small (0.04)	moderate (-0.24)	Zero
Carter Reddy and Associates	large (-0.46)	large (0.62)	moderate (0.13)
Huntsville City Schools	moderate (-0.24)	moderate (0.15)	moderate (-0.13)
Learn-It Systems	very small (-0.03)	large (0.50)	moderate (-0.23)
Rocket Learning, LLC	small (0.07)	large (-1.3)	NA
Sylvan of Birmingham/Roebuck	large (0.50)	large (0.43)	large (-0.65)
Statewide	small (-0.06)	small (-0.07)	moderate (-0.16)

Red=Negative Effect Size, Green=Positive Effect Size

Table C-12 presents a summary of the provider-level analysis findings for each of the three scoring blocks in both Reading and Math.

Table C-12: Summary of Provider-Level Analysis Findings

Provider	Reading			Math		
	Lowest Scoring Block	Middle Scoring Block	Highest Scoring Block	Lowest Scoring Block	Middle Scoring Block	Highest Scoring Block
A to Z Tutoring	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
A+ Tutors for Scholars	Grey	Grey	Grey	Yellow	Grey	Grey
Achievement Academy	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
All About Partners in Education	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Appleton Learning	Red	Yellow	Yellow	Yellow	Yellow	Yellow
Capitol School	Grey	Grey	Grey	Grey	Grey	Grey
Carter Reddy and Associates	Grey	Grey	Grey	Grey	Grey	Grey
Huntsville City Schools	Green	Grey	Grey	Yellow	Grey	Grey
JFK Tutoring	Blue	Blue	Blue	Blue	Blue	Blue
Learn-It Systems	Yellow	Yellow	Yellow	Yellow	Green	Yellow
Learning Express Center	Blue	Blue	Blue	Blue	Blue	Blue
MTS Tutorial Service	Blue	Blue	Blue	Blue	Blue	Blue
Rocket Learning, LLC	Yellow	Grey	Grey	Grey	Grey	Blue
Sylvan of Birmingham/Hoover	Blue	Blue	Blue	Blue	Blue	Blue
Sylvan of Birmingham/Roebuck	Grey	Grey	Grey	Grey	Grey	Grey
University of Alabama Heroes	Blue	Blue	Blue	Blue	Blue	Blue
Statewide	Yellow	Yellow	Red	Yellow	Yellow	Yellow
Green=SES statistically significantly higher after applying the Benjamini-Hochberg correction for multiple comparisons						
Yellow=No statistically significant difference						
Red=SES statistically significantly lower after applying the Benjamini-Hochberg correction for multiple comparisons						
Grey=Not able to test due to sample size less than 10						
Blue=No sample available after dropping students who did not meet the sample criteria						
NA=Did not offer tutoring service.						

Appendix D

**Descriptive Outcomes for Students Designated as Receiving Special Education
and English Language Learner (ELL) Services**

Since students identified as receiving special education and English Language Learner (ELL) services were not included in the provider- or state-level ANCOVA analyses, a descriptive summary of 2010-11 ARMT test results and SES services provided to these populations included in the SES student data file was performed. Performance Levels in Reading and Math on the ARMT ranged from a score of 1 to a score of 4, (e.g., 1 = "Not Proficient," 2 = "Partially Proficient," 3 = "Proficient," and 4 = "Advanced"). For the following outcomes, Performance Levels 1 and 2 were combined to equal "Below Proficient" while Levels 3 and 4 were combined to equal "Proficient or Advanced." The reader should interpret these results with caution, however, because no matched controls or comparisons for statistical significance were performed for these students. Therefore, these results do not conclusively determine whether or not providers were successful with these populations. Additionally, this descriptive examination of the achievement of special education students and ELL students is based on their performance on the ARMT test, not an alternative assessment. Therefore, ARMT outcomes may not be the most accurate determinant of these students' academic ability. Please see Tables D-1 through D-4 for the number of SES students designated as receiving special education services or designated as ELL by provider and proficiency level in Reading and Math respectively.

Students Receiving Special Education

Reading

Of 6,795 SES students, 487 (7.2%) were designated as receiving special education services. Of these, 233 students (47.8%) who were in grades 4-8 received Reading services no later than the ARMT test date, had 2010-11 ARMT Reading performance level data available, attended the same school for the entire 2010-11 school year, and had valid hours attended data. Only those students who met all these criteria were included in the state-level descriptive analysis (i.e., all providers combined). Of these 233 students, 1 was excluded from the provider-level descriptive analysis because this student received services from two different providers. Thus, 232 students were available for the provider-level descriptive analysis in Reading. Table D-1 presents the results in Reading for students identified as receiving special education services.

Reading, Any Hours Attended

Without taking hours of attendance into account, for the state-level analysis, 27% (*N* = 63) of all students identified as receiving special education services scored Proficient or Advanced in Reading. For the provider-level analysis, Appleton Learning had the largest number of special education students (*N* = 77) across all 13 providers who served this population, followed by A to Z Tutoring (*N* = 41). Out of the six providers with at least 10 students available to analyze, Appleton Learning had the highest percentage of students (28.6%) scoring Proficient or Advanced.

Reading, More than 12 Hours Attended

After excluding 43 students with less than 12 hours of attendance, 190 and 189 students identified as receiving special education services were available for the state- and provider-level analyses, respectively. At the state level, 28.4% (*N* = 54) of all students designated as receiving special education services scored Proficient or Advanced in Reading. At the provider level, Appleton Learning served the largest number of special education students (*N* = 60), followed by A to Z Tutoring (*N* = 38). Out of the six providers with at least 10 students available to analyze, Appleton Learning had the highest percentage of students (31.7%) scoring Proficient or Advanced.

Table D-1: Reading Proficiency Performance for Special Education Students

Provider	Any Hours Attended					≥ 12 Hours Attended				
	N Below Proficient	% Below Proficient	N Proficient or Advanced	% Proficient or Advanced	Total N	N Below Proficient	% Below Proficient	N Proficient or Advanced	% Proficient or Advanced	Total N
A to Z Tutoring	33	80.5	8	19.5	41	31	81.6	7	18.4	38
A+ Tutors for Scholars	11	55.0	9	45.0	20	9	52.9	8	47.1	17
Achievement Academy	13	72.2	5	27.8	18	7	63.6	4	36.4	11
All About Partners in Education	17	73.9	6	26.1	23	15	71.4	6	28.6	21
Appleton Learning	55	71.4	22	28.6	77	41	68.3	19	31.7	60
Capitol School	3	75.0	1	25.0	4	2	100.0	0	0.0	2
Carter Reddy and Associate	1	50.0	1	50.0	2	0	0.0	1	100.0	1
Huntsville City Schools	4	100.0	0	0.0	4	4	100.0	0	0.0	4
Learn-It Systems	18	72.0	7	28.0	25	14	73.7	5	26.3	19
MTS Tutorial Service	7	77.8	2	22.2	9	6	75.0	2	25.0	8
Rocket Learning, LLC	0	0.0	1	100.0	1	0	0.0	1	100.0	1
Sylvan of Birmingham/Hoover	0	0.0	1	100.0	1	0	0.0	1	100.0	1
Sylvan of Birmingham/Roebuck	7	100.0	0	0.0	7	6	100.0	0	0.0	6
Statewide	170	73.0	63	27.0	233[a]	136	71.6	54	28.4	190[b]

[a] Of these 233 students, 1 was excluded from the provider-level descriptive analysis as this student received services from two different providers.

[b] Of these 190 students, 1 was excluded from the provider-level descriptive analysis as this student received services from two different providers.

Math

Of 6,795 SES students, 487 SES students (7.2%) were designated as receiving special education services. Of these, 240 students (49.3%) who were in grades 4-8, received Math services no later than the ARMT test date, had 2010-11 ARMT Math performance level data available, attended the same school for the entire 2010-11 school year, and had valid hours attended data were included in the state-level descriptive analysis. Of these 240 students, 2 were excluded from the provider-level descriptive analysis because they each received services from two different providers. Thus, 238 students were available for the provider-level descriptive analysis in Math. Table D-2 presents the results for students identified as receiving special education services who received tutoring in Math.

Math, Any Hours Attended

Without taking hours of attendance into account, for the state-level analysis, 27.9% ($N =$ 67) of all students designated as receiving special education services scored Proficient or Advanced in Math. For the provider-level analysis, Appleton Learning served the largest number of special education students ($N = 77$) across all 13 providers who served this population, followed by A to Z Tutoring ($N = 42$). Out of the six providers with at least 10 students available to analyze, A+ Tutors for Scholars had the highest percentage of students (42.1%) scoring Proficient or Advanced.

Math, More than 12 Hours Attended

After excluding 44 students with less than 12 hours of attendance at the state level and 43 students at the provider level, 196 and 195 special education students were available for the state- and provider-level analyses. At the state level, 30.1% ($N = 59$) of all special education students scored Proficient or Advanced in Math. At the provider level, Appleton Learning served the largest number of special education students ($N = 60$), followed by A to Z Tutoring ($N = 38$). Out of the six providers with at least 10 students available to analyze, Achievement Academy had the highest percentage of students (58.3%) scoring Proficient or Advanced.

Table D-2: Math Proficiency Performance for Special Education Students

Provider	Any Hours Attended					≥ 12 Hours Attended				
	N Below Proficient	% Below Proficient	N Proficient or Advanced	% Proficient or Advanced	Total N	N Below Proficient	% Below Proficient	N Proficient or Advanced	% Proficient or Advanced	Total N
A to Z Tutoring	33	78.6	9	21.4	42	31	81.6	7	18.4	38
A+ Tutors for Scholars	11	57.9	8	42.1	19	9	56.3	7	43.8	16
Achievement Academy	12	63.2	7	36.8	19	5	41.7	7	58.3	12
All About Partners in Education	16	72.7	6	27.3	22	16	72.7	6	27.3	22
Appleton Learning	51	66.2	26	33.8	77	38	63.3	22	36.7	60
Capitol School	3	75.0	1	25.0	4	2	100.0	0	0.0	2
Carter Reddy and Associate	2	100.0	0	0.0	2	1	100.0	0	0.0	1
Huntsville City Schools	4	100.0	0	0.0	4	4	100.0	0	0.0	4
Learn-It Systems	25	80.7	6	19.4	31	18	75.0	6	25.0	24
MTS Tutorial Service	7	77.8	2	22.2	9	6	75.0	2	25.0	8
Rocket Learning, LLC	1	50.0	1	50.0	2	1	50.0	1	50.0	2
Sylvan of Birmingham/Hoover	1	100.0	0	0.0	1	1	100.0	0	0.0	1
Sylvan of Birmingham/Roebuck	6	100.0	0	0.0	6	5	100.0	0	0.0	5
Statewide	173	72.1	67	27.9	240[a]	137	69.9	59	30.1	196[b]

[a] Of these 240 students, 2 were excluded from the provider-level descriptive analysis as these students received services from two different providers.

[b] Of these 195 students, 1 was excluded from the provider-level descriptive analysis as this student received services from two different providers.

Students Designated as English Language Learners (ELL)

Reading

Of 6,795 SES students, 127 (18.7%) were designated as receiving ELL services. Of these, 77 students (60.6%) who were in grades 4-8 received Reading service no later than the ARMT test date, had 2010-11 ARMT Reading performance level data available, attended the same school for the entire 2010-11 school year, and had valid hours attended data. Only those students who met all these criteria were included in the state-level descriptive analysis. Of these 77 students, 1 was excluded from the provider-level descriptive analysis because this student received services from two different providers. Thus, 76 students were available for the provider-level descriptive analysis in Reading. Table D-3 presents the results for ELL students who received services in Reading.

Reading, Any Hours Attended

Without taking hours of attendance into account, for the state-level analysis, 40.3% ($N = 31$) of all students designated as receiving ELL services scored Proficient or Advanced in Reading. For the provider-level analysis, Appleton Learning served the largest number of ELL students ($N = 39$), across all 6 providers who served this population, followed by Learn-It Systems ($N = 15$). Out of the three providers with at least 10 students available to analyze, Appleton Learning had the highest percentage of students (46.2%) scoring Proficient or Advanced.

Reading, More than 12 Hours Attended

After excluding 11 students with less than 12 hours of attendance, 66 and 65 ELL students were available for the state- and provider-level analysis, respectively. At the state level, 40.9% (*N* = 27) of all students designated as receiving ELL services scored Proficient or Advanced in Reading. At the provider level, Appleton Learning served the largest number of ELL students (*N* = 36) across all six providers. Out of the three providers with at least 10 students available to analyze, Appleton Learning had the highest percentage of students (47.2%) scoring Proficient or Advanced.

Table D-3: Reading Proficiency Performance for English Language Learner Students

	Any Hours Attended					≥ 12 Hours Attended				
Provider	**N Below Proficient**	**% Below Proficient**	**N Proficient or Advanced**	**% Proficient or Advanced**	**Total N**	**N Below Proficient**	**% Below Proficient**	**N Proficient or Advanced**	**% Proficient or Advanced**	**Total N**
A to Z Tutoring	9	64.3	5	35.7	14	7	70.0	3	30.0	10
A+ Tutors for Scholars	4	100.0	0	0.0	4	4	100.0	0	0.0	4
Achievement Academy	0	0.0	2	100.0	2	0	0.0	2	100.0	2
Appleton Learning	21	53.9	18	46.2	39	19	52.8	17	47.2	36
Learn-It Systems	12	80.0	3	20.0	15	9	81.8	2	18.2	11
MTS Tutorial Service	0	0.0	2	100.0	2	0	0.0	2	100.0	2
Statewide	46	59.7	31	40.3	77[a]	39	59.1	27	40.9	66[b]

[a] Of these 77 students, 1 was excluded from the provider-level descriptive analysis as this student received services from two different providers.

[b] Of these 66 students, 1 was excluded from the provider-level descriptive analysis as this student received services from two different providers

Math

Of 6,795 SES students, 127 (1.9%) were designated as receiving ELL services. Of these, 80 students (63%) who were in grades 4-8 received Math services no later than the ARMT test date, had 2010-11 ARMT Math performance level data available, attended the same school for the entire 2010-11 school year, and had valid hours attended data. Only those students who met all these criteria were included in the state-level descriptive analysis. Of these 80 students, 1 was excluded from the provider-level descriptive analysis because this student received services from two different providers. Thus, 79 students were available for the provider-level descriptive analysis in Math. Table D-4 presents the results for ELL students who received services in Math.

Math, Any Hours Attended

Without taking hours of attendance into account, for the state-level analysis, 51.3% (*N* = 41) of all students designated as receiving ELL services scored Proficient or Advanced in Math. For the provider-level analysis, Appleton Learning served the largest number of ELL students (*N* = 40), across all 6 providers who served this population, followed by Learn-It Systems (*N* = 17). Out of the three providers with at least 10 students available to analyze, Appleton Learning had the highest percentage of students (60%) scoring Proficient or Advanced.

Math, More than 12 Hours Attended

After excluding 12 students with less than 12 hours of attendance, 68 and 67 ELL students were available for the state- and provider-level analysis, respectively. At the state level, 52.9% ($N = 36$) of students designated as receiving ELL services scored Proficient or Advanced in Math. At the provider level, Appleton Learning served the largest number of ELL students ($N = 36$) across all six providers. Out of the three providers with at least 10 students available to analyze, Appleton Learning had the highest percentage of students (61.1%) scoring Proficient or Advanced.

Table D-4: Math Proficiency Performance for English Language Learner Students

Provider	Any Hours Attended					≥ 12 Hours Attended				
	N Below Proficient	% Below Proficient	N Proficient or Advanced	% Proficient or Advanced	Total N	N Below Proficient	% Below Proficient	N Proficient or Advanced	% Proficient or Advanced	Total N
A to Z Tutoring	6	40.0	9	60.0	15	5	45.5	6	54.6	11
A+ Tutors for Scholars	2	50.0	2	50.0	4	2	50.0	2	50.0	4
Achievement Academy	0	0.0	1	100.0	1	0	0.0	1	100.0	1
Appleton Learning	16	40.0	24	60.0	40	14	38.9	22	61.1	36
Learn-It Systems	15	88.2	2	11.8	17	11	84.6	2	15.4	13
MTS Tutorial Service	0	0.0	2	100.0	2	0	0.0	2	100.0	2
Statewide	39	48.8	41	51.3	80[a]	32	47.1	36	52.9	68[b]

[a] Of these 80 students, 1 was excluded from the provider-level descriptive analysis as this student received services from two different providers.

[b] Of these 68 students, 1 was excluded from the provider-level descriptive analysis as this student received services from two different providers.

Descriptive Outcomes for the Alabama High School Graduation Exam (AHSGE)

The following section describes the matched-pairs descriptive analyses that were conducted for 11th grade students who participated in SES and took the 2010-11 Alabama High School Graduation Exam (AHSGE). Unlike the ARMT, which is administered to students in grades 3-8, the AHSGE is only administered to 11th grade students; therefore, prior-year AHSGE achievement scores were not available to adjust outcomes for prior achievement. However, AHSGE results for 11th grade students who participated in SES during the 2010-11 school year were compared to a matched control group of 11th grade students who were eligible for SES, yet did not participate. The reader should interpret these results with caution; however, due to the fact that differences between SES students and controls were not compared for statistical significance. Therefore, these results do not conclusively determine whether or not providers were successful with this population.

There were 517,070 students in the combined 2009-10 and 2010-11 test data file. Of these, 50,084 (10%) were in grade 11. After excluding 830 SES students identified in the SES data file, 1,894 students who did not attend the same school for the entire 2010-11 school year, 4,428 special education students, and 368 students designated as receiving ELL services[1], 42,564 students remained. Furthermore, 242 students who were missing 2010-11AHSGE Reading proficiency level data and 243 students who were missing 2010-11AHSGE Math proficiency level data were removed. As a result, 42,322 and 42,321 students were obtained as control groups for matching for Reading and Math, respectively.

Of 6,795 students in the SES file, 880 students (13%) were in 11th grade. Of these, 713 and 779 students received Reading and Math services, respectively. Furthermore, the following students were dropped:

- Students who did not attend the same school for the entire 2010-11 school year,
- Special education students,
- Students designated as receiving ELL services,
- Students who were missing AHSGE proficiency level data,

---

[1] Students identified as receiving special education services vary widely due to the nature of their disability. Likewise, students identified as receiving ELL services vary in their levels of fluency. There is a risk of matching SES and control students with varying levels of disability or great differences in fluency, and thus potentially falsely concluding that the provider either benefits or does not benefit students.

- Students who were missing a start date of service data or received service after the test date, and

- Students who had invalid hours of service.

Consequently, 358 students receiving Reading service and 393 students receiving Math service remained for matching. As a result, 327 11th grade students who received Reading services were matched with comparable control students not receiving SES tutoring, and 362 11th grade students who received Math services were matched with controls based on the following five criteria:

1. Free/reduced priced meal status,
2. School,
3. District,
4. Ethnicity, and
5. Gender.

Reading

Table E-1 presents student proficiency levels for Reading by provider. Across the ten Reading providers, Appleton Learning served the largest number of 11th grade students ($N = 123$), followed by All About Partners in Education ($N = 68$). Out of the five providers with at least 10 students available to analyze, A+ Tutors for Scholars had the highest percentage of students (81.3%) scoring Proficient or Advanced. There were 242 students (74%) at the state-level who scored at the Proficient or Advanced level in Reading. As Table E-2 shows, the percentage of students scoring Proficient or Advanced for the SES group (74%; $N = 242$) was lower than the control group (79.2%; $N = 259$).

Table E- 1: 11th Grade Students Reading Proficiency Levels by Provider

Provider	N Below Proficient	% Below Proficient	N Proficient or Advanced	% Proficient or Advanced	Total N
A to Z Tutoring	12	21.4	44	78.6	56
A+ Tutors for Scholars	6	18.8	26	81.3	32
Achievement Academy	9	31.0	20	69.0	29
All About Partners in Education	21	30.9	47	69.1	68
Appleton Learning	33	26.8	90	73.2	123
Carter Reddy and Associate	2	28.6	5	71.4	7
Learning Express Center	0	0.0	1	100.0	1
Rocket Learning, LLC	1	33.3	2	66.7	3
Sylvan of Birmingham/Hoover	0	0.0	1	100.0	1
Sylvan of Birmingham/Roebuck	1	14.3	6	85.7	7
Statewide	85	26.0	242	74.0	327

Table E- 2: 11th Grade Students Reading Proficiency Levels by Group

Group	N Below Proficient	% Below Proficient	N Proficient or Advanced	% Proficient or Advanced	Total N
SES Students	85	26.0	242	74.0	327
Control Students	68	20.8	259	79.2	327

Math

Table E-3 presents student proficiency levels for Math by provider. Across the ten Math providers, Appleton Learning served the largest number of 11th grade students ($N = 123$), followed by All About Partners in Education ($N = 83$). Out of the six providers with at least 10 students available to analyze, A+ Tutors for Scholars had the highest percentage of students (83.9%) scoring Proficient or Advanced. There were 291 students (80.4%) at the state-level who scored Proficient or Advanced in Math. However, as Table E-4 shows, there was a slightly higher percentage of students who scored Proficient or Advanced in Math for the control group (82.3%; $N = 298$) compared to the SES group (80.4%; $N = 291$).

Table E- 3: 11th Grade Students Math Proficiency Levels by Provider

Provider	N Below Proficient	% Below Proficient	N Proficient or Advanced	% Proficient or Advanced	Total N
A to Z Tutoring	13	19.7	53	80.3	66
A+ Tutors for Scholars	5	16.1	26	83.9	31
Achievement Academy	7	21.9	25	78.1	32
All About Partners in Education	18	21.7	65	78.3	83
Appleton Learning	23	18.7	100	81.3	123
Carter Reddy and Associate	3	27.3	8	72.7	11
Learning Express Center	1	25.0	3	75.0	4
Rocket Learning, LLC	1	33.3	2	66.7	3
Sylvan of Birmingham/Hoover	0	0.0	1	100.0	1
Sylvan of Birmingham/Roebuck	0	0.0	8	100.0	8
Statewide	71	19.6	291	80.4	362

Table E-4: 11th Grade Students Math Proficiency Levels by Group

Group	N Below Proficient	% Below Proficient	N Proficient or Advanced	% Proficient or Advanced	Total N
SES Students	71	19.6	291	80.4	362
Control Students	64	17.7	298	82.3	362