The 2007 Supplemental Educational Services Program:

Year 4 Summative Evaluation

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Executive Summary

As part of No Child Left Behind, low-income students who attend schools that have been identified as "in need of improvement" for three consecutive years are eligible to receive free math and reading tutoring services known as Supplemental Educational Services (SES). To evaluate the impact of the 2006-2007 SES program within the Chicago Public Schools (CPS), achievement gains from the 2006 to the 2007 ISAT, of SES participants in grades four through eight were compared to other low-income students attending the same schools that did not receive SES. In addition, the impact of specific SES program providers was tested by comparing the achievement gains of students in each program to non-participating eligible students. As an additional component, the impact of the district provided SES program (AIM High) was compared to the group of students tutored by other private providers. Finally, the relative cost-effectiveness of the different SES providers was assessed.

Findings

- Students in the SES program demonstrated a significantly greater gain in both reading and math achievement compared to other low-income students attending the same schools that did not receive SES tutoring. After accounting for differences due to demographic characteristics and prior achievement, SES participants demonstrated a 5% greater reading gain and a 13.2% greater math gain than would be expected had they not participated. These results are in contrast to those found in the CPS evaluation of the 2005-2006 SES program, where SES participants were found to gain more in reading than math.

- The number of tutoring hours students received related to the size of participant math achievement gains but not reading. Students receiving 30 to 40 hours of tutoring demonstrated 6.3% greater math gains than expected had they not received SES tutoring, while students receiving more than 70 hours gained 23.3%.

- Although the SES program was found to positively impact students in general, certain groups of students demonstrated a greater benefit from SES participation:

    - Students with disabilities averaged 11.7% greater than expected reading and 16.6% greater math gains while students without disabilities averaged 3.8% greater reading and 12.2% greater math gains.

    - 6th and 7th grade SES participants received the greatest benefit from SES on their math achievement, while 4th grade participants received the least. 6th grade students averaged 16.0% greater math gains than was expected had they not received SES tutoring and 7th grade students averaged 17.8% greater math gains, while 4th grade students averaged 8.8% greater math gains.

    - Male students demonstrated a greater benefit from SES on their math achievement than did female students. Males SES participants averaged 16.8% greater gains than expected, while female participants averaged 10.0% greater gains in math.

- Among the SES providers, students in the A+ Tutoring Service, Ltd., CS&C Inc.-Julex Learning, One-to-One Learning Center, Socratic Learning, Unparalleled Solutions, Inc., Catapult, Huntington Learning, and AIM High (CPS) programs all demonstrated significantly greater reading achievement gains than students eligible for SES that did not participate. The gain demonstrated by students in the Socratic Learning program was the largest at 50.2% greater than expected had they not received SES.

- Students in the A+ Tutoring Service, Ltd., Unparalleled Solutions, Inc., The Princeton Review, Inc., Progressive Learning, Inc., School Service Systems, Catapult, and AIM High (CPS) programs all demonstrated significantly greater math achievement gains than students eligible for SES that did not participate. The benefits demonstrated by students in the A+ Tutoring Service, Ltd program was the largest at 37.6% greater than expected.

- No providers demonstrated significantly lower math achievement gains than was predicted had their students not received tutoring.

- Students tutored by the least expensive provider, AIM High, demonstrated reading achievement gains comparable to students tutored by other, more expensive private tutoring programs. Further, AIM High students demonstrated significantly greater math achievement gains (16.7%) than did the group of students tutored by the other SES providers taken collectively (11.0%).

- Although, there is a large difference in costs between providers, with the AIM High program costing $489 per student and the other providers averaging $1,716 per student, program cost did not correlate with student achievement gains.

- AIM High was one of only four providers, along with A+ Tutoring Service, Ltd., Unparalleled Solutions, Inc., and Catapult, that demonstrated a significant impact on both the reading and math achievement gains of students.

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The 2007 Supplemental Educational Services Program:
Year 4 Summative Evaluation

This report presents a summative evaluation of year four (2006-2007) in the implementation of the SES tutoring program in the Chicago Public Schools. As part of No Child Left Behind, low-income students who attend schools that have been identified as "in need of improvement" for three consecutive years are eligible to receive free math and reading tutoring services known as Supplemental Educational Services (SES). These tutoring services are offered by private providers and the school district, all of whom are pre-approved by the Illinois State Board of Education. SES services may include academic assistance in math and reading such as tutoring, remediation, and other educational interventions.

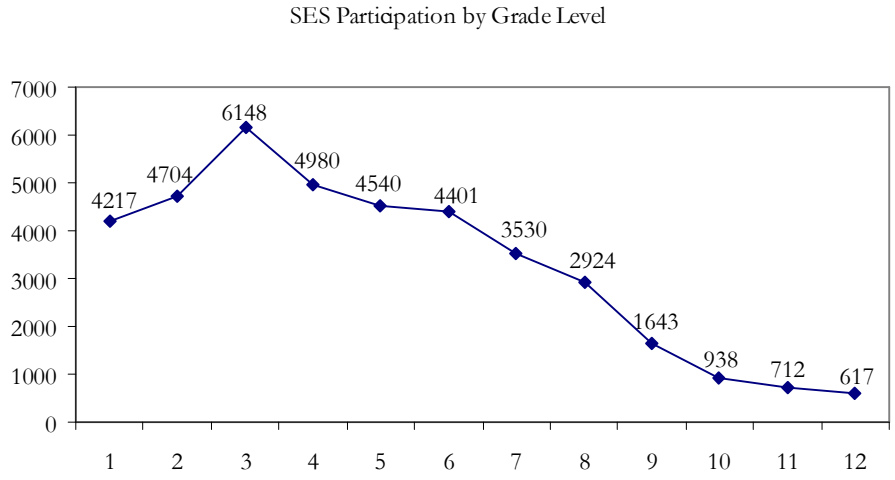
In this report, characteristics of SES participants and providers are examined along with the impact of the overall program on the achievement of elementary school students, the impact of each SES provider on the achievement of elementary school students, and the impact of providers relative to their costs. Finally, the impact of the district SES program (AIM High) is compared to non-district programs.

Characteristics of SES participants

During the 2006-2007 school year, approximately 230,644[1] CPS students were eligible for SES. 50,204[2] students initially registered to receive tutoring in the fall. Of these, 44,223 (19.2%) students enrolled in the SES program. During fall semester, additional students were identified as interested in receiving SES. In the spring, these students were given the opportunity to sign up for the CPS SES program, AIM High. An additional 3,948 students registered for the tutoring services in the late winter and 2,118 students eventually enrolled.[3]

Program attendance data were available for 39,354 students across 295 schools.[4] SES participants represented all grade levels, but were most represented in elementary school, and especially third grade, with over 6,000 students participating (Figure 1).

Figure 1



[1] Data valid as of September, 2006.
[2] Data valid as of October, 2006.
[3] Students that enrolled in the spring to receive AIM High are not included in the analyses found within this report.
[4] SES participation was tracked in the online STARS data system, with providers tracking their own student attendance. It is apparent that the attendance of some students were not tracked in the system.

Participants were nearly equally divided between males (19,361) and females (19,978). The racial breakdown of SES participants was different than the general CPS elementary school population; SES participants were more likely to be black and less likely to be white, Hispanic, or Asian (Table 1).

Table 1: Racial breakdown of SES participants compared to the general student body

	SES Participants		CPS Students	
White	411	1.0%	45,881	9.7%
Black	27,424	69.7%	227,058	47.9%
Native American	23	0.1%	829	0.2%
Asian	259	0.7%	16,865	3.6%
Hispanic	11,222	28.5%	183,824	38.7%

As a group, participating students were in need of tutoring services; The SES program provided tutoring to 4,937 students with disabilities, 3,358 students in a bilingual program, and 6,798 previously in the bilingual program. Also, SES participants represented a lower achieving group of students than other low-income students that attended SES schools. The baseline Illinois Standards Achievement Test (ISAT) reading performance levels of 57.7% of SES participants placed them in the below or warning categories, while the performance of 52.2% of eligible students placed them in these categories (Figure 2). In math, 50.2% of SES participants were in the below or warning achievement categories, compared to 45.5% of eligible non-participants (Figure 3).

Figure 2

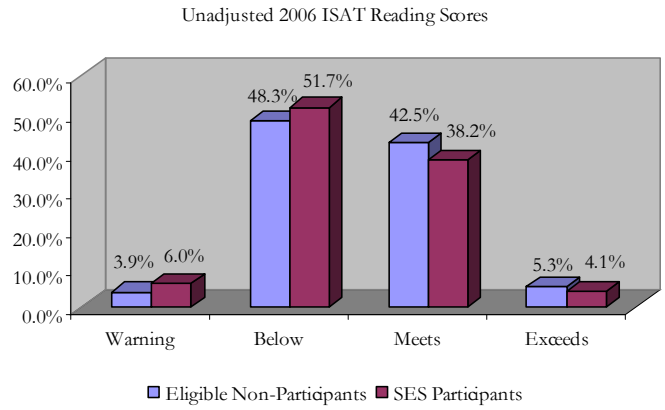
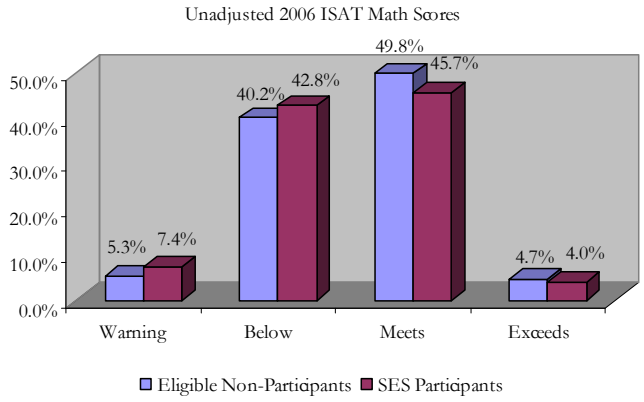


Figure 3



Characteristics of SES Providers

SES programs were selected by the Illinois State Board of Education (ISBE) through an RFP process. In the 2006-2007 academic year, 45 programs were selected to offer tutoring services to Chicago students. All but six providers offered tutoring in both math and reading. Most providers offered tutoring onsite, within the school, while four providers also offered online programs, and 11 programs offered offsite tutoring. The number of hours of tutoring providers were approved to offer students ranged from 30 to 80. Most providers offered tutoring to both students with disabilities and English as a Second Language (ESL) students. The A.I.M. High program offered by CPS was the most widely utilized program, with over 14,000 enrolling to receive tutoring. A.I.M High was also by far the least expensive program, costing anywhere from 27% to 40% as much per student as others. Table 3 summarizes the characteristics of the different provider programs and Table 4 summarizes program participation.

Table 2: Descriptive Information of SES Providers

	Grade Levels	Tutoring hours	Cost /Student	Tutoring Areas	Offsite	Online	Onsite	Special Ed	ESL
A.I.M. High - CPS	1-12	80	489	Reading and Math			x	x	x
A+ Tutoring Service, LTD	1-8	60	1761	Reading and Math			x	x	x
Achieve 3000	3-12	60	1740	Reading		x		x	x
African American Images Talent Center	1-12	50	1464	Reading and Math					
Alternative Unlimited	1-12	35	1761-1833	Reading and Math	x		x	x	x
ASPIRA	6-12	80	1761-1833	Reading and Math	x		x		x
ATS Educational Consulting Services	1-8	45	1800	Reading and Math		x		x	x
Brain Hurricane, LLC	1-8	40	1761	Reading and Math			x	x	x
Brainfuse	3-12	44-46	1761-1833	Reading and Math		x	x	x	x
Brilliance Academy	1-12	50	1761	Reading and Math			x		x
Cambridge Educational Services	1-12	40	1761	Reading and Math			x		
Catapult	3-12	32	1833	Reading and Math		x		x	x
Center of Higher Development	1-3	30	1761	Reading and Math			x		
Champions	1-8	60	1761-1833	Reading and Math	x		x	x	x
CHASI	1-8	50	1761	Reading and Math			x	x	x
Chess Academy LLC	1-8	60	1428	Math			x	x	x
Chi Tutorsz	1-12	60	1761	Reading and Math			x		x
City Year	1-5	45	1669	Reading			x		
Club Z! In-Home Tutoring Services	1-12	35	1750	Reading and Math			x	x	x
CS&C, Inc.-Julex Learning	1-8	60	1520	Reading and Math			x		x
Education Station, A Sylvan Partnership	1-12	60	1761	Reading and Math			x	x	x
Educational Specialties	2-12	44	1761	Reading and Math			x		
Erie Neighborhood House	1-6	50	1699	Reading	x			x	x
Failure Free Reading	1-12	40	1761	Reading			x	x	x
Huntington Learning	1-12	40	1728-1800	Reading and Math	x		x	x	
KnowledgePoints	1-12	60	1761-1833	Reading and Math	x		x	x	
Kumon	1-12	48	1237	Reading and Math	x				
Literacy for All	1-8	51	1562	Reading and Math			x	x	x
Marilyn G. Rabb Foundation dba MGRF	1-12	60	1528	Reading and Math			x		x
Newton Learning	1-8	60	1761	Reading and Math			x	x	x
Non-Public Educational Services	1-8	50	1678	Reading and Math			x		x
One-to-One Learning Center	1-12	80	1620	Reading and Math			x	x	x
Orion's Mind	1-8	40	1761	Reading and Math			x		x
Platform Learning, Inc.	1-8	30	1761	Reading and Math			x	x	x
PODER (Central States SER)	3-8	60	1761-1833	Reading and Math	x		x	x	x
Progressive Learning	3-8	40	1761	Reading and Math			x	x	x
Reading in Motion	1, 3	60	1761	Reading			x		x
School Service Systems	1-12	60	1753	Reading and Math			x	x	x
Smart Kids, Inc.	1-8	60	1723	Reading and Math	x			x	x
Socratic Learning	3-12	50	1761-1833	Reading and Math				x	x
Spectra Services	1-8	50	1761	Reading and Math			x		x
The Princeton Review, Inc.	1-12	60	1707	Reading and Math			x	x	x
Train up a Child - Homework Mastery	1-12	60	1761-1833	Reading and Math	x		x	x	
Unparalleled Solutions, Inc.	1-12	80	1596	Reading and Math			x	x	x
Wicker Park Learning Center	1-12	60	1728-1800	Reading and Math	x		x	x	x

Table 3: SES Registration, Enrollment, and Attendance

Provider	Registered	Enrolled
A.I.M. High - CPS	16,648	14,760
A+ Tutoring Service, LTD	945	925
Achieve 3000	91	31
African American Images Talent Center	209	184
Alternative Unlimited	166	84
ASPIRA	194	101
ATS Educational Consulting Services	46	45
Brain Hurricane, LLC	389	372
Brainfuse	993	782
Brilliance Academy	1,572	1,548
Cambridge Educational Services	959	861
Catapult (online)	2,426	1,465
Center of Higher Development	83	83
Champions	1,687	1,510
CHASI	71	70
Chess Academy LLC	179	177
Chi Tutorsz	21	18
City Year	18	11
Club Z! In-Home Tutoring Services	2,052	1,959
CS&C, Inc.-Julex Learning	375	327
Education Station, A Sylvan Partnership	3,610	3,293
Educational Specialties	289	265
Erie Neighborhood House	20	17
Failure Free Reading	416	405
Huntington Learning	953	495
KnowledgePoints	129	82
Kumon	56	37
Literacy for All	129	126
Marilyn G. Rabb Foundation dba MGRF	44	10
Newton Learning	4,103	3,966
Non-Public Educational Services	55	55
One-to-One Learning Center	296	256
Orion's Mind	183	146
Platform Learning, Inc.	1,740	1,724
PODER (Central States SER)	93	83
Progressive Learning	1,899	1,830
Reading in Motion	90	90
School Service Systems	793	748
Smart Kids, Inc.	47	10
Socratic Learning	1,360	1,228
Spectra Services	144	136
The Princeton Review, Inc.	3,614	2,952
Train up a Child- Homework Mastery	123	91
Unparalleled Solutions, Inc.	824	805
Wicker Park Learning Center	70	60
Total	50,204	44,223

The Impact of SES on the Achievement Gains of Students in Elementary School

The outcomes used to determine the impact of the SES program were ISAT reading and math achievement gains. Statistical modeling procedures were used to compare the achievement gains on the ISAT of SES participants to those of students eligible to receive SES tutoring that did not participate. Differences in the demographic characteristics and prior achievement levels of SES participants and non-participants were accounted for through statistical modeling procedures, to isolate the unique impact of the SES program on reading and math achievement.

The population of students used to evaluate the impact of the SES program included students in grades four through eight[5], who were not English Language Learners (ELL)[6], and were eligible for SES services (low-income students in poor performing schools). Only students that received 30 or more hours of SES tutoring were included in the analyses as SES participants.[7] Appendices A and B summarize the sample included in these analyses.

Two basic general linear models were developed using the SAS 9.1 statistical software package: one predicting 2007 ISAT Reading Scale scores and one predicting 2007 ISAT Math Scale scores. Each model included the impacts of race, gender, IEP status, grade level, baseline achievement scale scores, baseline achievement performance levels[8], and the interaction terms of race and gender, grade level and baseline achievement scale scores, grade level and baseline achievement performance levels, and grade level and IEP status. The inclusion of these interaction terms accounts for differences in the impact of prior achievement and IEP across grade levels and race across genders. These general models were then applied to the five analyses outlined below.

1. To test the overall impact of SES on reading and math achievement, SES participation was added to the models as a categorical variable, thereby allowing for a test of the unique impact of SES on student achievement gains. The achievement gains of students that received at least 30 hours of SES tutoring were compared to students eligible for SES that did not participate (See Appendices E and F for the results of these analyses).

2. To determine if subgroups of students received more of a benefit from participating in SES, the interaction terms of SES participation with gender, race, grade, baseline achievement performance levels, and disability status were added to the statistical models developed in step one (See Appendix G for the results).

3. To compare the impact of different SES providers to the population of students that were eligible for SES but did not receive services, SES participation was removed from the models in Step 1 and SES program provider was added (See Appendices H and I for the results of these analyses).

4. To compare the impact of the AIM High (CPS) tutoring program to non-district tutoring programs, the SES program provider variable was recoded so that all providers except AIM High were grouped together. Only SES participants were included in these analyses (See Appendix J for the results).

5. To demonstrate the size of the impact of the overall SES program, for subgroups of participants, and for different providers, two statistical models were built with the group of students that were eligible

[5] The ISAT is only administered to students in grades three through eight so achievement gains can only be calculated for students in grades four through eight.
[6] ELL students do not take the ISAT so are not included in these analyses.
[7] To ensure that students received an adequate number of tutoring hours to demonstrate an effect of SES, only SES participants that received at least 30 hours of tutoring were included in the analyses. Thirty hours was chosen as the cutoff since it was the fewest number of hours that providers were approved to offer students.
[8] Appendix M contains a breakdown of scale scores and corresponding performance levels broken down by grade.

for SES that did not receive tutoring, one predicting reading and one predicting math achievement. The resulting model parameter estimates (Appendices K and L) were used to establish a baseline for the expected achievement gains of students that did not receive SES. These parameters were then applied to SES participants, to compare the actual achievement of SES participants to their predicted achievement had they not received SES. Predicted ISAT gains were then calculated by subtracting 2006 ISAT scale scores from predicted 2007 scores. The size of the impact of SES is represented by the ratio of actual gains to predicted ISAT gains for each group of interest by using the equation:

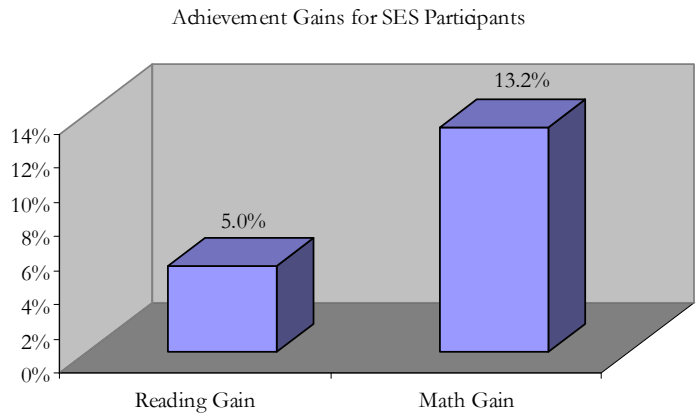
$$\textit{SES achievement gain size} = \frac{\bar{x}\textit{(2007 actual scale score – 2006 actual scale score)}}{\bar{x}\textit{(2007 predicted scale score – 2006 scale score)}}$$

Appendices C and D present the resulting achievement data used to calculate gains and z-scores (effect sizes) of the SES program for different subgroups.

The Overall Impact of SES on Reading and Math Achievement

After accounting for students' demographic and prior achievement, SES participants demonstrated significantly greater gains in reading and math achievement than was expected had they not received SES tutoring ($p < .001$). For reading, SES participants were predicted to gain 10.2 reading scale score points, while their actual gain averaged 10.7 ($\sigma = 15.9$). This difference of 0.5 scale score points represents 5.0% greater reading achievement gains for SES participants than expected had they not received SES tutoring (Figure 4). For math achievement, SES participants were predicted to gain 13.6 math scale points, while their actual gains averaged 15.4 ($\sigma = 14.5$) points. This difference of 1.8 math scale score points represents 13.2% greater math achievement gains for SES participants than would be expected had they not received tutoring. Finally, although SES participants demonstrated significantly greater reading and math achievement gains, the size of the effect of the program on reading achievement was very small, with the difference of 0.5 reading scale score points only representing 0.03 standard deviations better performance. However, the difference of 1.8 math scale score points, representing 0.12 standard deviations better performance than expected, indicates that the SES program had a moderately sized impact on student math achievement.[9]

Figure 4



[9] In this report, effect sizes less than .10 are considered small, between .10 and .20 are considered moderate, and above .20 are considered large. Most traditional classification schemas of effect sizes, such as Cohen (1988), would not classify the effect sizes presented in this report as significant. However, traditional effect size classification schemas are acontextual such that by applying them to measure achievement gains, entire school districts would typically be classified as having a small impact on student achievement. See "Bloom, H., Hill, C., Black, A., & Lipsey, M. (2006). *Effect Sizes in Education Research: What They Are, What They Mean, and Why They're Important.*" for a more involved discussion of the use of effect sizes in educational contexts.

The Impact of SES in Relation to the Number of Tutoring Hours Received

Students who received more SES tutoring typically demonstrated the greatest benefit. Students who received greater than 70 hours of tutoring demonstrated the largest difference between expected and actual math and reading achievement gains. SES students receiving greater than 70 hours of tutoring were predicted to gain 10.3 scale points in reading and 13.4 scale points in math. The actual gain for SES participants was 11.3 (σ = 16.3) scale points in reading and 16.5 (σ = 15.3) points in math. Thus, the 1.0 point difference in reading indicates that SES participants tutored for greater than 70 hours gained 9.4% more in reading than expected (Figure 5), and the 3.1 math scale point difference indicates they gained 23.3% more in math than expected (Figure 6). For students receiving more than 70 hours of tutoring, the size of the effect was small for reading and large for math, with the difference of 1.0 reading scale points representing 0.06 standard deviations and the difference of 3.1 math scale points representing 0.20 standard deviations. Finally, although there appears to be a direct relationship between the amount of SES tutoring received and student math achievement gains, in reading the relationship is less clear, with students receiving between 40 and 50 hours of tutoring demonstrating about the same sized achievement gain as would be expected had they not received SES tutoring..

Figure 5

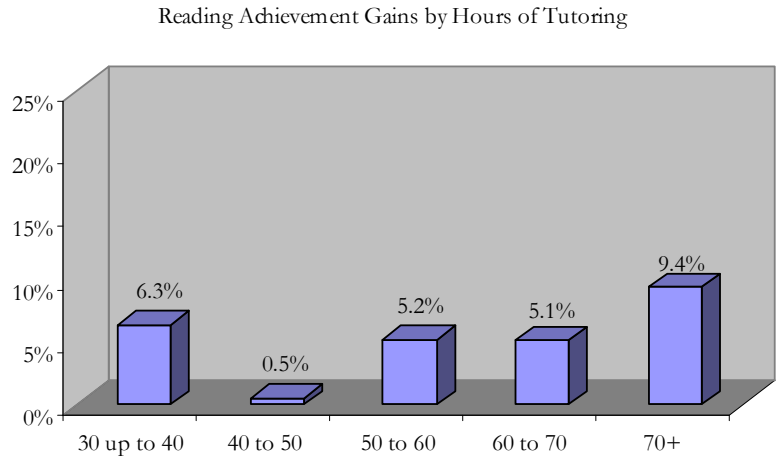
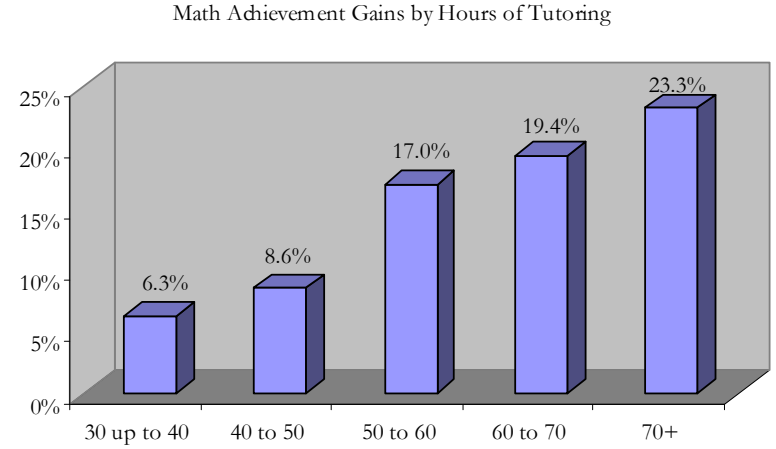


Figure 6

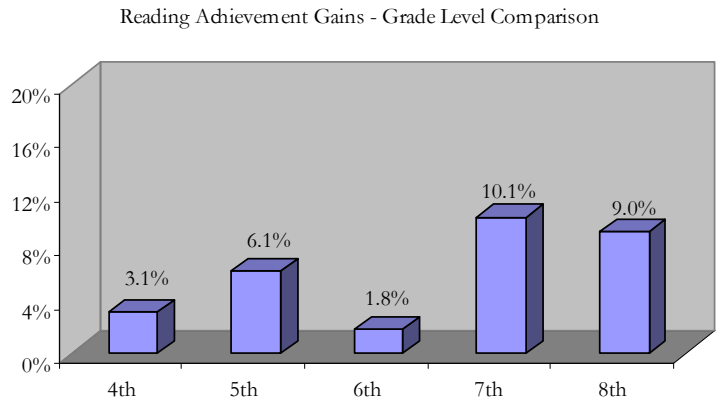


The Impact of SES in Relation to Grade Level

To test if students in different grades received a differential benefit from the SES program, the interaction terms of SES participation and grade level were included in the statistical models predicting reading and math (Appendix G). The results suggest that grade is a statistically significant factor in determining the impact of SES on math gains ($p = .0023$) but not reading gains ($p = .447$).

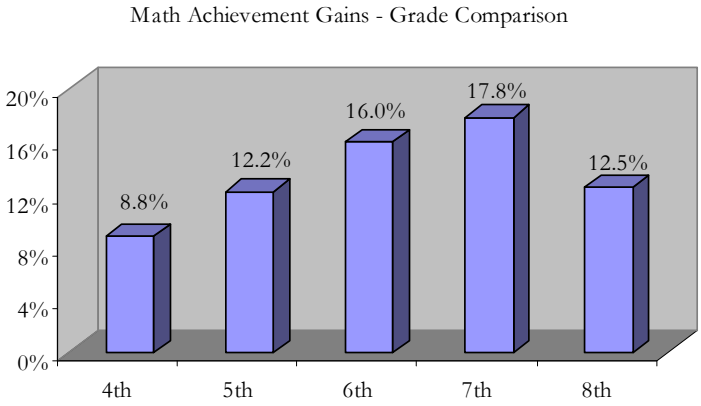
In reading, 7th and 8th grade SES participants were predicted to gain 6.6 and 11.8 scale points respectively. The actual gains for 7th and 8th grade SES participants were 7.3 ($\sigma = 14.8$) and 12.8 ($\sigma = 14.3$) points respectively. Although small, the 7th grade difference of 0.7 scale points represents a 10.1% greater than expected gain, while the larger 1.1 difference found for 8th grade participants represents a 9.0% difference (Figure 7). Although these differences may appear large, it is important to note that they are not statistically significant, which is likely a function of the small impact SES had on reading achievement.

Figure 7



In math, SES participants in 6th and 7th grade were found to have the greatest difference between actual and predicted gains. 6th and 7th grade participants were predicted to gain 15.8 and 10.4 scale points respectively, while their actual gains were 18.4 ($\sigma = 13.6$) and 12.3 ($\sigma = 13.3$). The 6th grade difference of 2.5 represents a 16.0% greater than expected gain, and the 7th grade difference of 1.9 represents a 17.8% greater than expected gain had they not received SES (Figure 8). Translated to effect sizes, the 6th grade difference represents 0.19 standard deviations and the 7th grade difference represents 0.14 standard deviations, indicating a moderate impact of SES on the math achievement gains of 6th and 7th grade participants (Appendix D).

Figure 8

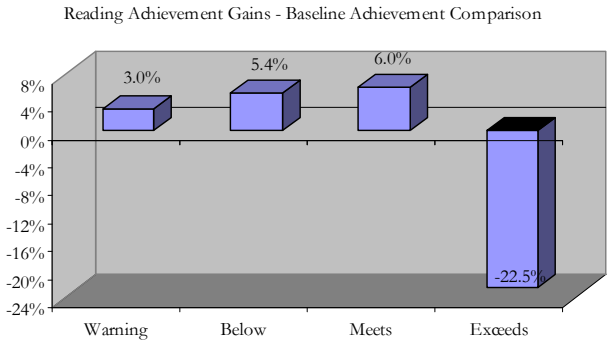


The Impact of SES in Relation Baseline Achievement Performance Levels

To test if students at different starting achievement levels received a greater benefit from the SES program, the interaction terms of SES participation and baseline ISAT achievement performance levels were included in the statistical models predicting reading and math gains (Appendix G). The results suggest that baseline performance level is not a statistically significant factor in determining the impact of SES on math ($p = .3269$) or reading gains ($p = .2706$).

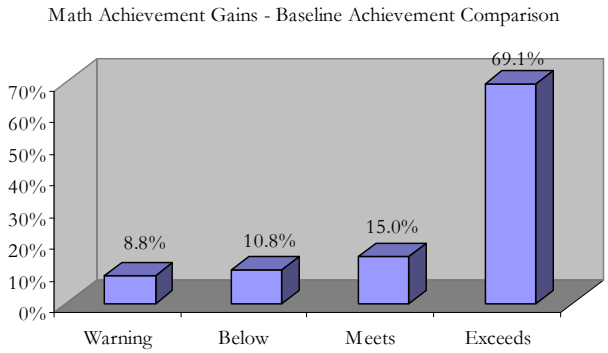
As the results of the modeling indicated, no significant difference was found between the effect of SES on students with differing baseline reading performance levels. However, some clarification of the results is necessary regarding students in the "exceeds expectations" group. The model predicted that SES participants in the "exceeds expectations" group would demonstrate a reduction in their achievement scores by 3.2 scale points. These students actually demonstrated a greater reduction of 3.9 ($\sigma = 16.5$) points suggesting that the lowering of these students' scores was primarily a function of regression to the mean, and not due to programmatic effects.

Figure 9



Although the impact of SES was not found to differ across baseline math performance levels, there were some interesting trends in the results. SES participants in the meets and exceeds categories were predicted to gain 11.2 and 4.1 scale points respectively, while their actual gains were 12.9 ($\sigma = 14.1$) and 6.9 ($\sigma = 17.9$). The difference of 1.7 for students whose baseline achievement met expectations represents a 15.0% greater than expected gain, while the difference of 2.8 for students whose achievement exceeded expectations represents a 69.1% greater than expected gain had they not received SES (Figure 10). Both differences represent moderate effects of SES, with the difference for students in the meets expectations group representing 0.12 standard deviations, and the difference for students in the exceeds expectations group representing 0.16 standard deviations greater performance (Appendix D).

Figure 10



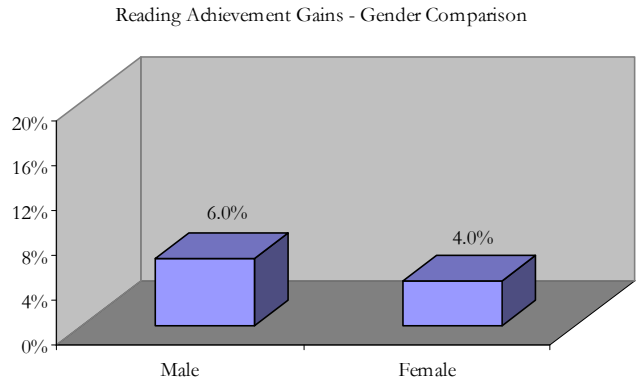
Generally, in both reading and math, the better a student's baseline performance, the less they were predicted to gain. Thus, even though the relative size of the impact of SES remained consistent across baseline performance levels (Appendices C and D), the percentage differences presented in Figures 9 and 10 were higher for students whose baseline performance levels were better.

The Impact of SES in Relation to Gender

To test if gender is a relevant factor in predicting the impact of SES, the interaction term of SES participation and gender was included in the statistical models predicting reading and math gains (Appendix E). The results suggest that gender is not a statistically significant factor in determining the impact of SES on reading ($p = .713$) but is a significant factor in predicting the impact of SES on math gains ($p = .0304$).

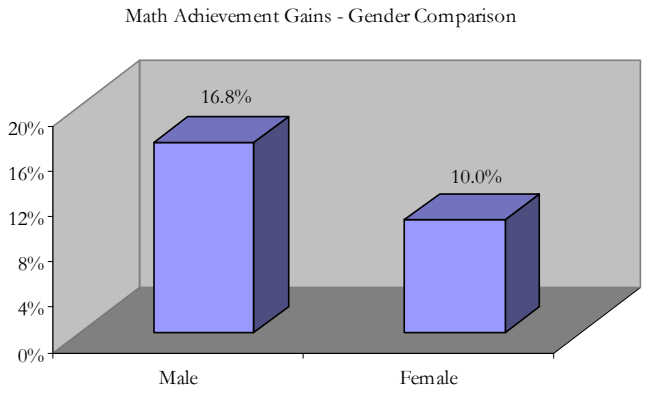
In reading, male and female SES participants were predicted to gain 10.5 and 9.9 scale points respectively, but actually gained 11.1 ($\sigma = 16.0$) and 10.3 ($\sigma = 15.8$) points (Appendix C). These numbers translate to a 6% greater than expected gain for male participants and a 4% greater gain for female participants (Figure 11). Translated to effect sizes, the SES program had a small impact on both male and female participants' reading achievement gains (Appendix D).

Figure 11



In math, male SES participants demonstrated a greater benefit from SES. Male participants were predicted to gain 13.2 scale points, while their actual gains averaged 15.4 ($\sigma = 15.0$). The difference of 2.5 represents a 16.8% greater than expected gain had they not received SES (Figure 12). Translated to effect sizes, the SES program had a moderate impact on the math gains of both male and female participants (Appendix D).

Figure 12

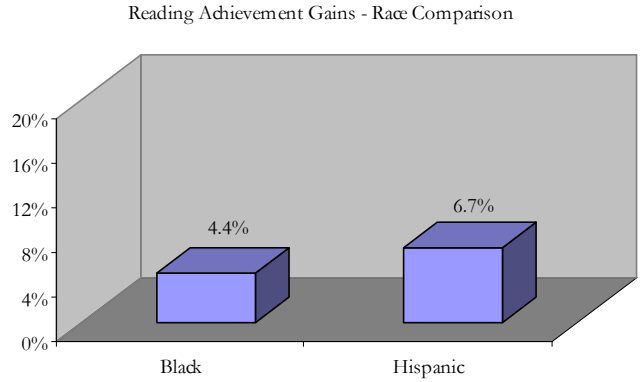


The Impact of SES in Relation to Race

To test if race is a relevant factor in predicting the impact of SES, the interaction term of SES participation and race was included in the statistical models predicting reading and math gains (Appendix E). The results suggest that race is not a statistically significant factor in determining the impact of SES on reading ($p = .2671$) nor math gains ($p = .0964$).

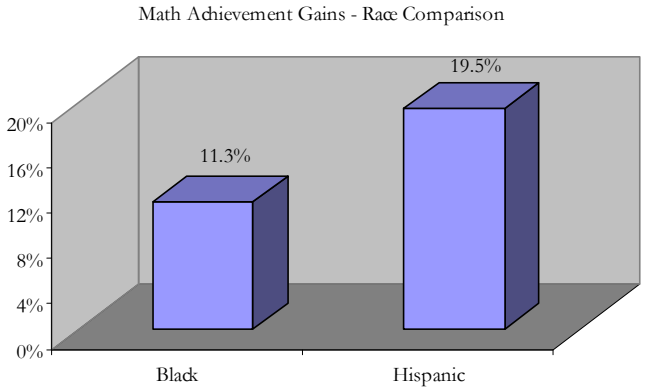
In reading, Hispanic and black SES participants were predicted to gain 11.2 and 9.9 scale points respectively, but actually gained 11.9 ($\sigma = 15.5$) and 10.4 ($\sigma = 16.0$) points. For Hispanic students, the difference of 0.7 scale points represents a 6.7% greater than expected gain, while for black students the difference of 0.5 scale points represents a 4.4% greater gain (Figure 13). Translated to effect sizes, the SES program had a small impact on the reading achievement of both Hispanic and black participants (Appendix C).

Figure 13[10]



In math, Hispanic and black participants were predicted to gain 13.7 and 13.6 scale points respectively, while their actual gains averaged 16.3 ($\sigma = 14.2$) and 15.2 ($\sigma = 14.6$). For Hispanic participants, the difference of 2.7 scale points represents a 19.5% greater than expected gain, and for black participants, the difference of 1.6 represents an 11.3% greater gain (Figure 14). Translated to effect sizes, the SES program had a moderate impact on the math achievement of both Hispanic and black participants (Appendix D).

Figure 14



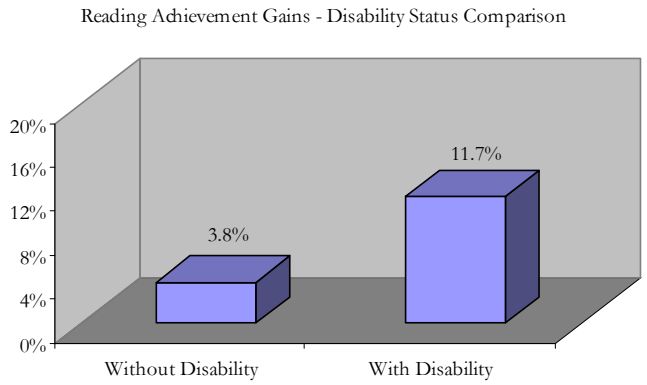
[10] Other racial groups were not presented since the black and Hispanic groups account for 97% of all participants in the analyses.

The Impact of SES for Students with Disabilities

To test if SES participants with disabilities obtained a greater benefit from SES, the interaction term of SES participation and disability status was included in the statistical models predicting reading and math gains (Appendix E). The results suggest that disability status approaches significance in determining the impact of SES on both reading ($p = .069$) and math gains ($p = .0565$).

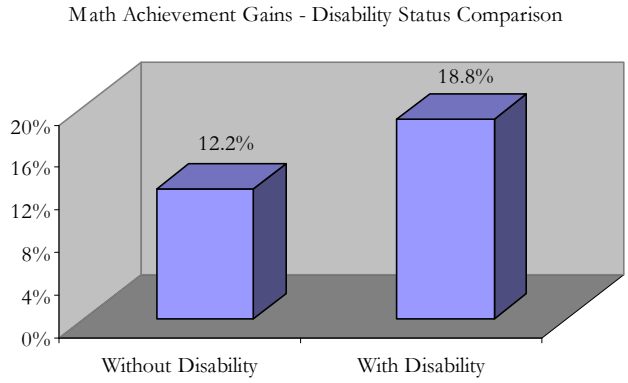
In reading, SES participants with and without disabilities were expected to gain 10.9 and 10.1 scale points respectively, but actually gained 12.2 ($\sigma = 16.8$) and 10.4 ($\sigma = 15.7$) points. The difference of 1.3 scale points gained by students with a disability represents an 11.7% greater than expected gain, while the difference of 0.3 points gained by students without a disability represents a 3.8% greater gain (Figure 15). Translated to effect sizes, SES had a small impact on the reading achievement gains of students with disabilities and a negligible impact on the reading gains of students without disabilities (Appendix C).

Figure 15



In math, SES participants with and without disabilities were expected to gain 13.9 and 13.6 scale points respectively, but actually gained 16.5 ($\sigma = 15.5$) and 15.3 ($\sigma = 14.4$) points. The difference of 2.6 scale points gained by students with a disability represents an 18.8% greater than expected gain, while the difference of 0.3 points gained by students without a disability represents a 12.2% greater gain (Figure 16). Translated to effect sizes, SES had a moderate impact on the reading achievement gains of both students with and without disabilities (Appendix D).

Figure 16



Analyses of SES Providers

In addition to testing the overall effectiveness of the SES program, the effectiveness of the different SES providers were evaluated across four main questions:

1. Which SES programs performed significantly better or worse than the group of similar students eligible for SES that did not receive tutoring?

2. In relation to students eligible for SES that did not receive tutoring, how much more or less reading and math achievement did students tutored by specific providers gain?

3. Did the AIM High (CPS) program perform as well or better than other non-district, private tutoring programs collectively?

4. How cost effective were the SES programs?

Comparison of the Reading Achievement Gains of Students Tutored by Different SES Programs

To determine which SES programs demonstrated a greater benefit to participants than was expected had their students not received SES, SES provider was added to statistical models predicting reading and math gains (Appendices F and G). The results suggest that students in several programs demonstrated higher reading and math achievement gains than the group of students that did not receive SES but were eligible.

In reading, students in the A+ Tutoring Service, Ltd., CS&C Inc.-Julex Learning, One-to-One Learning Center, Socratic Learning, Unparalleled Solutions, Inc., Catapult, Huntington Learning, and AIM High (CPS) programs all demonstrated significantly greater achievement gains than students eligible for SES that did not participate (Appendix H). The Failure Free Reading program was the only provider that demonstrated significantly lower student reading achievement gains.

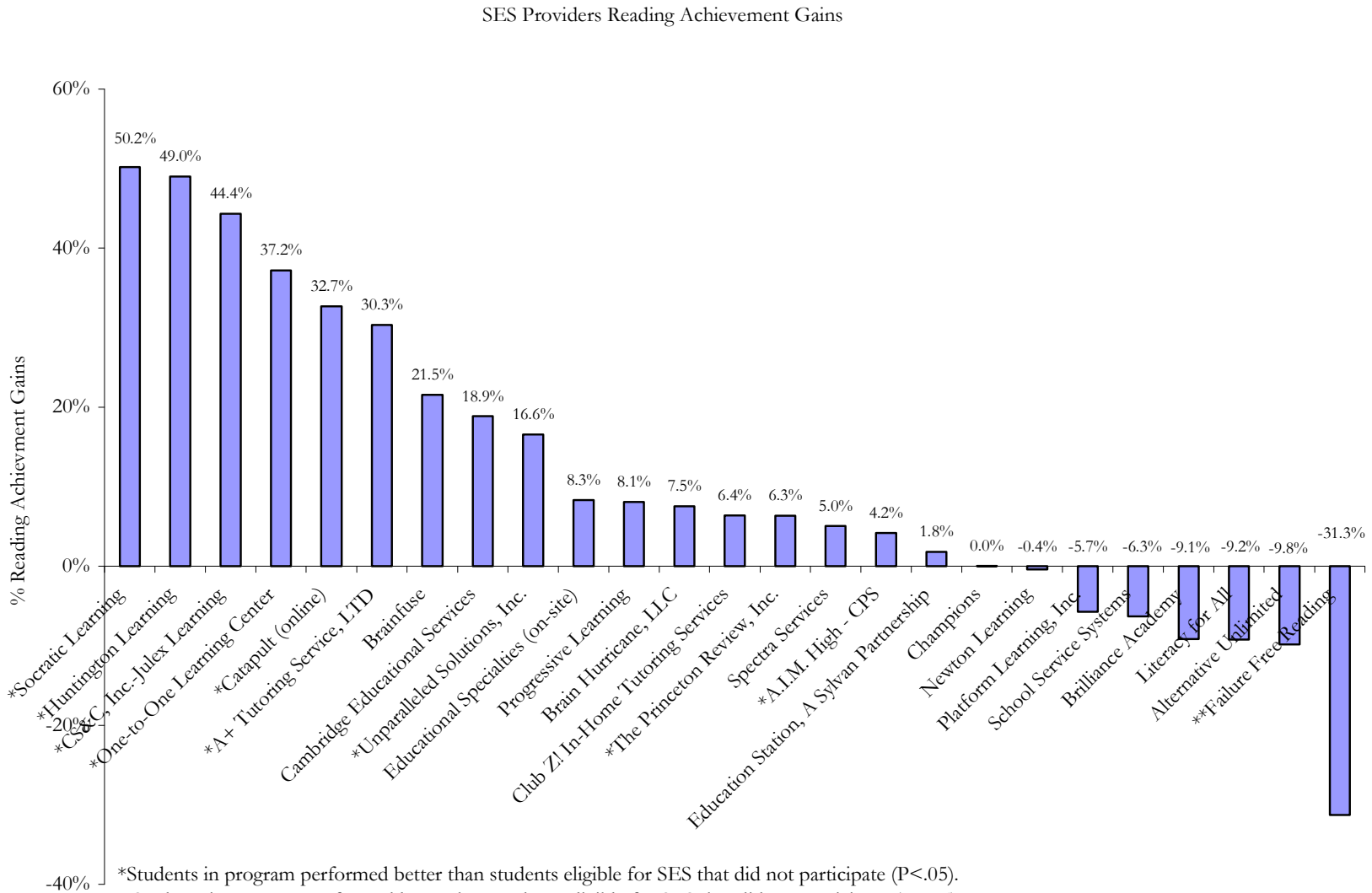
The magnitude of the difference in expected and actual reading achievement gains was also analyzed to determine which providers had the largest impact on student reading achievement gains. The results indicate that students in the Socratic Learning Program demonstrated the greatest difference in actual achievement gains (10.9, $\sigma = 17.9$) compared to expected (7.2). This difference of 3.6 scale points represents 50.2% greater achievement gains than expected had students in that program not received tutoring. Figure 17 presents the providers ordered by the ratio of actual to expected gains.

Further, the size of the impact each provider had on the reading achievement gains of participants were analyzed (Table 4). Based on the difference in actual and expected reading achievement gains, the A+ Tutoring Service, Ltd, CS&C Inc.-Julex Learning, Huntington Learning, One-to-One Learning Center, and Socratic Learning programs all demonstrated large impacts on the reading achievement gains of participants ($z > .20$).

Table 4 – Student Reading Gains Broken Down by SES Providers

	Predicted Gain	Actual Gain (σ)	Gain Difference	Percent Gain	Z-Score	n
A+ Tutoring Service, LTD	10.26	13.37 (14.56)	3.11	30.3%	0.21	206
A.I.M. High - CPS	10.27	10.69 (15.87)	0.43	4.2%	0.03	3,703
Alternative Unlimited	10.62	9.58 (15.77)	-1.04	-9.8%	-0.07	43
Brain Hurricane, LLC	11.03	11.86 (17.86)	0.83	7.5%	0.05	73
Brainfuse	10.08	12.25 (14.80)	2.17	21.5%	0.15	51
Brilliance Academy	10.13	9.20 (16.69)	-0.92	-9.1%	-0.06	320
CS&C, Inc.-Julex Learning	11.74	16.94 (16.10)	5.21	44.4%	0.32	71
Cambridge Educational Services	10.11	12.01 (17.23)	1.91	18.9%	0.11	78
Catapult (online)	8.71	11.56 (15.01)	2.85	32.7%	0.19	284
Champions	11.12	11.12 (17.12)	0.00	0.0%	0.00	353
Club Z! In-Home Tutoring Services	10.82	11.51 (15.62)	0.69	6.4%	0.04	243
Education Station, A Sylvan Partnership	10.43	10.62 (15.97)	0.19	1.8%	0.01	994
Educational Specialties (on-site)	12.63	13.68 (15.33)	1.05	8.3%	0.07	47
Failure Free Reading	11.15	7.66 (18.85)	-3.49	-31.3%	-0.19	82
Huntington Learning	10.31	15.36 (16.36)	5.05	49.0%	0.31	55
Literacy for All	9.99	9.07 (15.37)	-0.92	-9.2%	-0.06	43
Newton Learning	10.57	10.53 (15.37)	-0.04	-0.4%	0.00	1,306
One-to-One Learning Center	10.05	13.79 (17.68)	3.74	37.2%	0.21	68
Platform Learning, Inc.	9.67	9.11 (16.76)	-0.55	-5.7%	-0.03	418
Progressive Learning	9.33	10.09 (15.51)	0.76	8.1%	0.05	721
School Service Systems	9.49	8.89 (15.26)	-0.60	-6.3%	-0.04	357
Socratic Learning	7.23	10.87 (17.89)	3.63	50.2%	0.20	105
Spectra Services	8.51	8.93 (17.63)	0.43	5.0%	0.02	46
The Princeton Review, Inc.	10.19	10.83 (15.06)	0.65	6.3%	0.04	699
Unparalleled Solutions, Inc.	10.01	11.66 (16.03)	1.66	16.6%	0.10	362

Figure 17



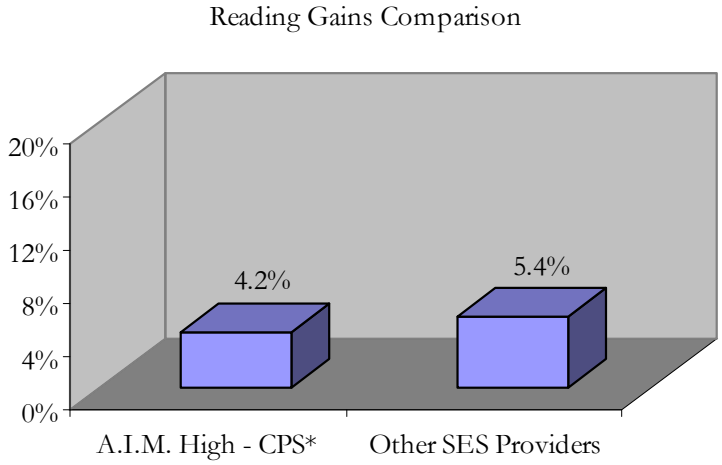
*Students in program performed better than students eligible for SES that did not participate (P<.05).
**Students in program performed lower than students eligible for SES that did not participate (P<.05).

Finally, in addition to comparing the reading achievement gains of students tutored by different providers individually, students tutored by the district tutoring program AIM High were compared to the group of students tutored by other non-district providers. The results of this model (Appendix J) suggest that there was no statistical difference between the reading achievement gains of AIM High participants and those of students tutored by other, non-district providers taken as a group. Both groups experienced small, but higher than expected, reading gains (Table 5), with AIM High participants gaining 4.2% more than expected, while students tutored by other SES providers gained 5.4% more (Figure 18).

Table 5 - Student Reading Gains Comparing A.I.M. High CPS Program to all other SES Providers

	Predicted Gain	Actual Gain (σ)	Gain Difference	Percent Gain	Z-Score	n
A.I.M. High - CPS	10.27	10.69 (15.87)	0.43	4.2%	0.03	3,703
Other SES Providers	10.14	10.69 (15.84)	0.55	5.4%	0.03	7,232

Figure 18



*The impact of SES on reading gains did not vary between AIM High and other SES providers (p > .05)

Comparison of the Math Achievement Gains of Students Tutored by Different SES Programs

In math, Students in the A+ Tutoring Service, Ltd., Unparalleled Solutions, Inc., The Princeton Review, Inc., Progressive Learning, Inc., School Service Systems, Catapult, and AIM High (CPS) programs all demonstrated significantly greater achievement gains than students eligible for SES that did not participate (Appendix G). No providers demonstrated significantly lower math achievement gains.

The size of the difference in expected and actual math achievement gains was analyzed to determine which providers had the largest impact on student math achievement gains. The results indicate that students in the A+ Tutoring Services Program demonstrated the greatest difference in actual achievement gains (18.15, σ = 15.77) compared to expected (13.18). This difference of 4.96 scale points represents 37.6% greater math achievement gains than expected had students in that program not received tutoring. Figure 18 presents all the providers ordered by the ratio of actual to expected gains.

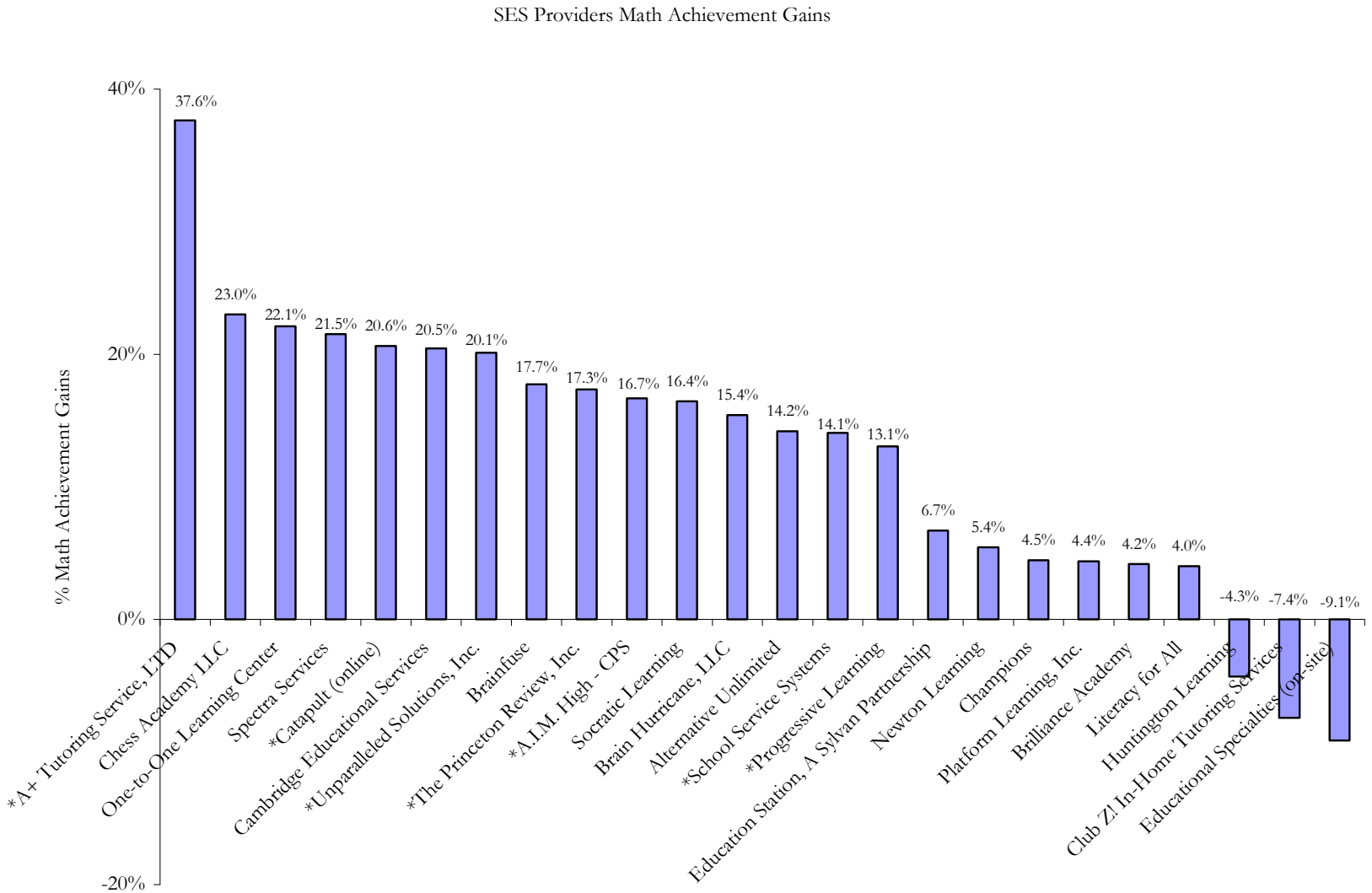
Further, the size of the impact each provider had on the math achievement gains of participants were analyzed (Table 5). Based on the difference in actual and expected reading achievement gains, the A+

Tutoring Service, Ltd, Spectra Services, and Unparalleled Solutions, Inc. programs all demonstrated large impacts on the math achievement gains of participants ($z > .20$).

Table 6 – Student Math Gains Broken Down by SES Providers

	Predicted Gain	Actual Gain (σ)	Gain Difference	Percent Gain	Z-Score	n
A+ Tutoring Service, LTD	13.18	18.15 (15.77)	4.96	37.6%	0.31	204
A.I.M. High - CPS	13.68	15.96 (14.82)	2.28	16.7%	0.15	3,701
Alternative Unlimited	14.15	16.16 (14.72)	2.01	14.2%	0.14	43
Brain Hurricane, LLC	13.06	15.07 (13.93)	2.01	15.4%	0.14	73
Brainfuse	13.07	15.39 (12.47)	2.32	17.7%	0.19	51
Brilliance Academy	13.98	14.57 (15.56)	0.58	4.2%	0.04	320
Cambridge Educational Services	12.21	14.70 (15.96)	2.50	20.5%	0.16	77
Catapult	13.44	16.21 (14.28)	2.77	20.6%	0.19	285
Champions	14.30	14.93 (14.53)	0.64	4.5%	0.04	352
Chess Academy LLC	10.95	13.47 (13.40)	2.52	23.0%	0.19	75
Club Z! In-Home Tutoring Services	14.01	12.97 (15.12)	-1.04	-7.4%	-0.07	244
Education Station, A Sylvan Partnership	15.29	16.31 (11.96)	1.02	6.7%	0.09	42
Educational Specialties	13.98	12.70 (12.35)	-1.28	-9.1%	-0.10	47
Huntington Learning	12.22	11.69 (13.03)	-0.53	-4.3%	-0.04	55
Literacy for All	13.26	13.80 (14.50)	0.53	4.0%	0.04	44
Newton Learning	13.98	14.74 (13.38)	0.76	5.4%	0.06	1,304
One-to-One Learning Center	13.22	16.15 (14.22)	2.92	22.1%	0.21	68
Platform Learning, Inc.	13.68	14.28 (14.98)	0.60	4.4%	0.04	421
Progressive Learning	13.06	14.77 (14.71)	1.71	13.1%	0.12	721
School Service Systems	13.48	15.37 (15.27)	1.89	14.1%	0.12	357
Socratic Learning	12.35	14.38 (13.41)	2.03	16.4%	0.15	103
Spectra Services	13.06	15.87 (11.48)	2.81	21.5%	0.25	46
The Princeton Review, Inc.	13.95	16.37 (13.93)	2.42	17.3%	0.17	695
Unparalleled Solutions, Inc.	13.27	15.94 (13.97)	2.67	20.1%	0.19	363

Figure 19



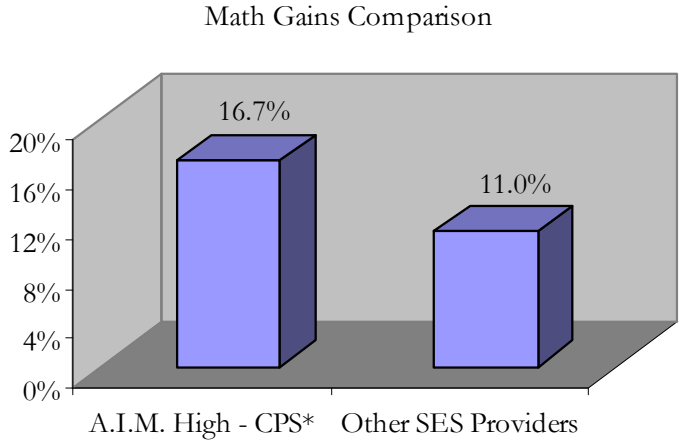
*Students in program performed better than students eligible for SES that did not participate (P<.05).

Finally, in addition to comparing the math achievement gains of students tutored by different providers individually, students tutored by the district tutoring program, AIM High, were compared to students tutored by non-district providers collectively. The results of this model (Appendix J) suggest that AIM High participants demonstrated greater math achievement gains than the group of students tutored by non-district providers ($p < .01$). Although, non-district SES providers still had a significant impact on the math achievement of participants, AIM High participants gained 2.3 scale score points (16.7%) more than expected while students tutored by other providers gained only 1.5 scale score points (11.0%) more (Figure 20). Translated to effect sizes, both groups of providers demonstrated a moderate impact on the math gains of participants ($z = 0.15$ for AIM High and $z = 0.11$ for other SES providers) (Table 7).

Table 7 – Student Math Gains Broken Down by SES Providers

	Predicted Gain	Actual Gain (σ)	Gain Difference	Percent Gain	Z-Score	n
A.I.M. High - CPS	13.68	15.96 (14.82)	2.28	16.7%	0.15	3,701
Other SES Providers	13.61	15.11 (14.28)	1.50	11.0%	0.11	6,189

Figure 20



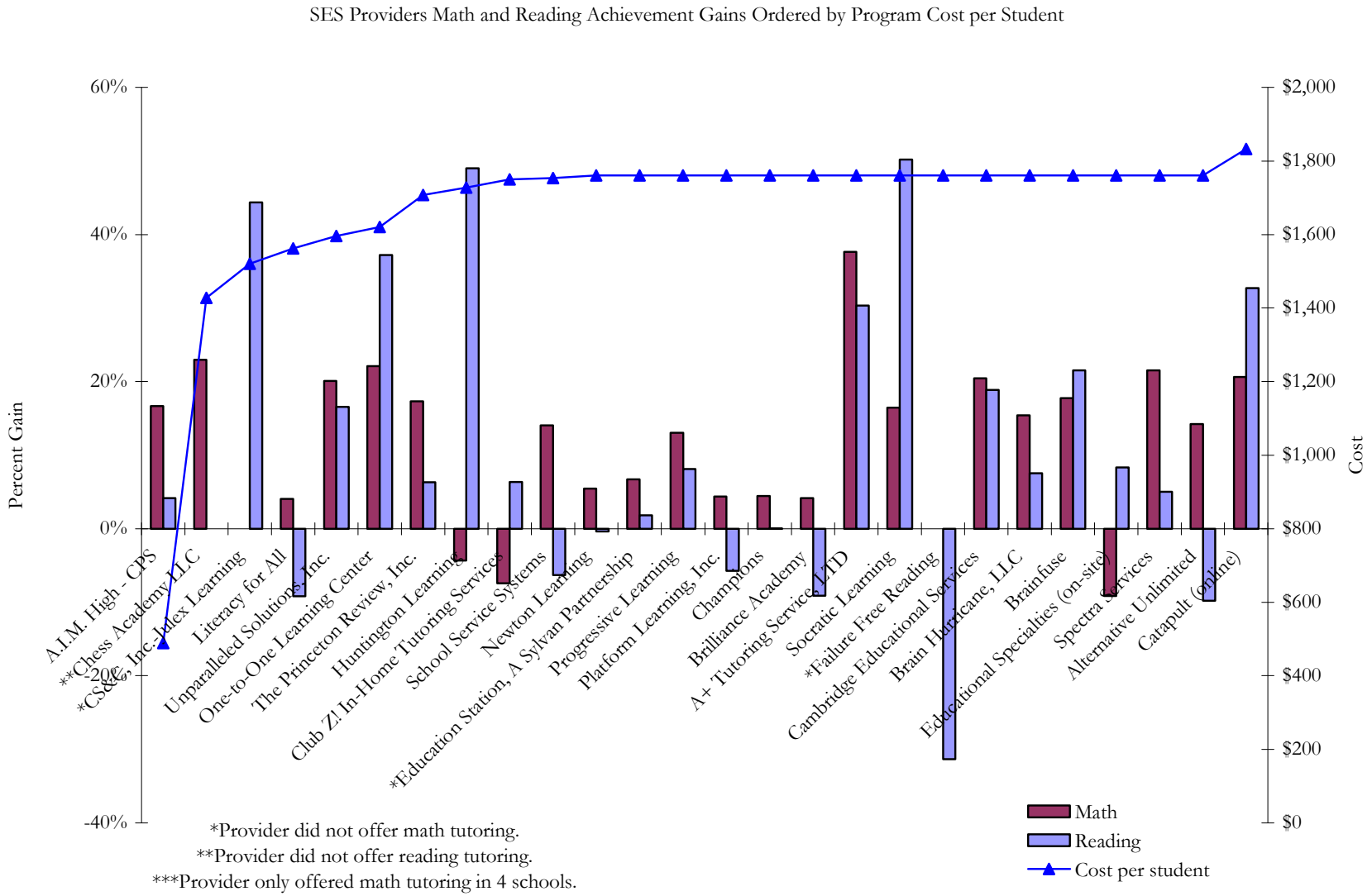
*Students in AIM High demonstrated greater math gains than students tutored by other SES providers ($p < .01$)

The Cost Effectiveness of the SES programs

In addition to exploring the success of impact of SES on students tutored by the various providers, the cost of providers was also considered relevant for determining the effectiveness of SES tutoring programs. Table 2 (page 6) presents the cost per student approved by the state for each provider. In Figure 19, these costs are graphed along with the ratios of actual achievement gains to expected achievement gains students in each tutoring program demonstrated. Tutoring providers are ordered from left to right, least to most expensive.

Based on the results presented in Figure 19, it is not clear that the more expensive SES providers were more beneficial to students. The success of students in the AIM High program, by far the least expensive SES provider at $489 per student, was comparable to that of students in other more expensive programs. In fact, students tutored by the three least expensive providers, AIM High, Chess Academy LLC, and CS&C Inc. Julex Learning, demonstrated some of the greatest gains in reading and math. In addition, the lack of a correlation between program cost and its impact on student reading ($r = .07$, $p = .738$) and math achievement ($r = -.07$, $p = .740$) further demonstrates that higher costs do not translate into greater student benefit.

Figure 21


SES Providers Math and Reading Achievement Gains Ordered by Program Cost per Student
Percent Gain
Cost
60%
40%
20%
0%
-20%
-40%
$2,000
$1,800
$1,600
$1,400
$1,200
$1,000
$800
$600
$400
$200
$0
A.I.M. High - CPS
**Chess Academy, LLC
*CSCC, Inc.
Julex Learning
Literacy for All
Unparalleled Solutions, Inc.
One-to-One Learning Center
The Princeton Review, Inc.
Huntington Learning
Club Z! In-Home Tutoring Services
School Service Systems
Newton Learning
*Education Station, A Sylvan Partnership
Progressive Learning
Platform Learning, Inc.
Champions
Brilliance Academy
A+ Tutoring Service, LTD
Socratic Learning
*Failure Free Reading
Cambridge Educational Services
Brain Hurricane, LLC
Brainfuse
Educational Specialties (on-site)
Spectra Services
Alternative Unlimited
Catapult (online)
Math
Reading
Cost per student
*Provider did not offer math tutoring.
**Provider did not offer reading tutoring.
***Provider only offered math tutoring in 4 schools.

Summary and Conclusions

After its fourth year of implementation in the Chicago Public Schools, the SES tutoring program continues to demonstrate a significant impact on the reading and math achievement gains of elementary students. Students in the SES program demonstrated significantly greater gains in both reading and math achievement compared to other low-income students attending the same schools that did not receive SES tutoring. SES participants gained 5% more in reading and 13% more in math than expected had they not received tutoring.

Although the SES program was found to positively impact students in general, certain groups of students demonstrated a greater benefit from SES participation.

- Students with disabilities that participated in SES may receive a greater benefit on both math and reading achievement compared to SES participants without disabilities.
- SES participants in 6th and 7th grades demonstrated a greater benefit from SES on math achievement.
- Male participants demonstrated a greater benefit from SES on their math achievement than did female students.

Among the SES providers, students in the A+ Tutoring Service, Ltd., CS&C Inc.-Julex Learning, One-to-One Learning Center, Socratic Learning, Unparalleled Solutions, Inc., Catapult, Huntington Learning, and AIM High (CPS) programs all demonstrated significantly greater reading achievement gains than students eligible for SES that did not participate.

Students in the A+ Tutoring Service, Ltd., Unparalleled Solutions, Inc., The Princeton Review, Inc., Progressive Learning, Inc., School Service Systems, Catapult, and AIM High (CPS) programs all demonstrated significantly greater math achievement gains than students eligible for SES that did not participate. No providers demonstrated significantly lower math achievement gains compared to students eligible for SES that did not participate.

Although there was no significant difference between the reading achievement gains demonstrated by AIM High students and students in other, private tutoring programs, AIM High participants demonstrated significantly greater math achievement gains than did students tutored in other SES programs collectively.

The cost of tutoring programs did not correlate with greater student achievement gains, suggesting that more expensive programs are not more effective.

AIM High was one of only four programs, along with A+ Tutoring Service, Ltd., Unparalleled Solutions, Inc., and Catapult, that demonstrated a significant impact on both reading and math achievement gains of students.

There are a few noteworthy caveats to these findings. Although the SES program demonstrated a positive significant impact on the achievement of students, little is known about the actual implementation of SES and how characteristics of programs relate to program impact. Further evaluation work, documenting the relationships between aspects of SES programs and impact, is therefore warranted. Also, these findings represent outcomes for a small percentage of all SES participants. Of the over 44,000 SES participants, little more than 10,000 students in grades four through eight who were not English Language Learners were included in these analyses. Therefore, additional evaluation work of the impact of SES in earlier grades, later grades, and with ELL students would provide for a more complete picture of the value of SES in the Chicago Public Schools.

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Appendix A

Sample of students included in General Linear Models

	Math	Reading
Eligible but did not receive SES	42,654	41,861
SES Participants	9,891	10,935

Breakdown of sample included in residual score analyses

	Math	Reading
Gender		
Male	4,682	5,173
Female	5,208	5,761
Race/Ethnicity		
Black	7,658	8,580
Hispanic	1,980	2,090
Disability Status		
With a Disability	1,409	1,574
W/out Disability	8,481	9,360
Prior Achievement Level		
Warning	551	523
Below	3,977	5,568
Meets	4,867	4,322
Exceeds	495	521
Grade Level		
4th	2,293	2,600
5th	2,135	2,370
6th	2,157	2,378
7th	1,750	1,907
8th	1,555	1,679
Hours of Tutoring		
30 up to 40	2,990	3,259
40 to 50	2,089	2,430
50 to 60	2,081	2,458
60 to 70	1,358	1,410
70+	1,372	1,377

Appendix B

Sample Included in GLM Comparing Providers to Group of Eligible Non-participating Students

	Reading	Math
A.I.M. High - CPS	3,703	3,701
Newton Learning	1,306	1,304
*Education Station, A Sylvan Partnership	994	42
Progressive Learning	721	721
The Princeton Review, Inc.	699	695
Platform Learning, Inc.	418	421
Unparalleled Solutions, Inc.	362	363
School Service Systems	357	357
Champions	353	352
Brilliance Academy	320	320
Catapult (online)	284	285
Club Z! In-Home Tutoring Services	243	244
A+ Tutoring Service, LTD	206	204
Socratic Learning	105	103
**Failure Free Reading	82	
Cambridge Educational Services	78	77
***Chess Academy LLC		75
Brain Hurricane, LLC	73	73
**CS&C, Inc.-Julex Learning	71	
One-to-One Learning Center	68	68
Huntington Learning	55	55
Brainfuse	51	51
Educational Specialties (on-site)	47	47
Spectra Services	46	46
Alternative Unlimited	43	43
Literacy for All	43	44
Total	10,935	9,891

*Education Station only provided math tutoring to 3 schools.
**Provider did not tutor students in math.
***Provider did not tutor students in reading.

Sample Included in Models Comparing AIM High Program to other Providers

	Reading	Math
A.I.M. High - CPS	3,703	3,701
Other SES providers	7,232	6,190

Appendix C

Reading Gains for Subgroups

	Predicted Gain	Actual Gain (σ)	Gain Difference	Percent Gain	Z-Score	n
Overall Reading	10.2	10.7(15.9)	0.51	5.0%	0.03	10934
Race/Ethnicity						
Black	9.9	10.4(16.0)	0.44	4.4%	0.03	8580
Hispanic	11.2	11.9(15.5)	0.74	6.7%	0.05	2090
Gender						
Male	10.5	11.1(16.0)	0.63	6.0%	0.04	5174
Female	9.9	10.3(15.8)	0.40	4.0%	0.03	5761
Prior Achievement Level						
Warning	24.0	24.7(14.8)	0.71	3.0%	0.05	523
Below	13.4	14.1(14.8)	0.72	5.4%	0.05	5569
Meets	6.0	6.3(14.6)	0.36	6.0%	0.02	4322
Exceeds	-3.2	-3.9(16.5)	-0.72	-22.5%	-0.04	521
Disability Status						
With a Disability	10.9	12.2(16.8)	1.28	11.7%	0.08	1574
W/out Disability	10.1	10.4(15.7)	0.38	3.8%	0.02	9360
Grade Level						
4th	10.8	11.1(17.4)	0.33	3.1%	0.02	2600
5th	7.2	7.6(15.7)	0.44	6.1%	0.03	2371
6th	14.3	14.5(15.1)	0.26	1.8%	0.02	2378
7th	6.6	7.2(14.8)	0.67	10.1%	0.05	1907
8th	11.8	12.8(14.3)	1.06	9.0%	0.07	1679

Appendix D

Math Gains for Subgroups

	Predicted Gain	Actual Gain (σ)	Gain Difference	Percent Gain	Z-Score	n
Overall Math	13.6	15.4(14.5)	1.79	13.2%	0.12	9891
Race/Ethnicity						
Black	13.6	15.2(14.6)	1.54	11.3%	0.11	7658
Hispanic	13.7	16.3(14.2)	2.67	19.5%	0.19	1980
Gender						
Male	13.2	15.4(15.0)	2.22	16.8%	0.15	4683
Female	14.0	15.4(14.1)	1.41	10.0%	0.10	5208
Prior Achievement Level						
Warning	26.0	28.2(14.1)	2.28	8.8%	0.16	551
Below	16.1	17.8(13.0)	1.74	10.8%	0.13	3978
Meets	11.2	12.9(14.0)	1.68	15.0%	0.12	4867
Exceeds	4.1	6.8(17.9)	2.80	69.1%	0.16	495
Disability Status						
With a Disability	13.9	16.5(15.5)	2.60	18.8%	0.17	1409
W/out Disability	13.6	15.3(14.4)	1.66	12.2%	0.12	8481
Grade Level						
4th	13.9	15.1(15.9)	1.22	8.8%	0.08	2293
5th	11.2	12.5(14.5)	1.36	12.2%	0.09	2136
6th	15.8	18.3(13.6)	2.53	16.0%	0.19	2157
7th	10.4	12.3(13.3)	1.85	17.8%	0.14	1750
8th	17.2	19.4(13.3)	2.15	12.5%	0.16	1555

Appendix E

Analysis 1

Results of GLM predicting 2007 ISAT Reading scores

Parameter	Estimate	Standard Error	T-value	Pr
Intercept	77.74	3.38	23.02	<.0001
Gender	-0.04	0.90	-0.04	0.9658
With Disability	-11.23	0.41	-27.19	<.0001
2006 Reading Achievement	0.69	0.01	59.34	<.0001
4th Grade	2.36	4.94	0.48	0.6325
5th Grade	-4.17	4.70	-0.89	0.3749
6th Grade	12.44	4.38	2.84	0.0045
7th Grade	-12.87	4.64	-2.77	0.0056
4th Grade*Disability	5.52	0.65	8.51	<.0001
5th Grade*Disability	3.16	0.63	5.04	<.0001
6th Grade*Disability	4.08	0.61	6.7	<.0001
7th Grade*Disability	3.25	0.58	5.58	<.0001
2006 Reading Performance - Warning	5.63	1.88	3	0.0027
2006 Reading Performance - Below	8.09	1.06	7.65	<.0001
2006 Reading Performance - Meets	7.47	0.83	8.96	<.0001
American Indian	4.27	6.20	0.69	0.4913
Asian	2.29	1.74	1.31	0.189
Black	-2.89	0.63	-4.6	<.0001
Hispanic	0.32	0.65	0.5	0.6183
White	1.85	0.99	1.88	0.0601
Female*American Indian	-6.00	7.03	-0.85	0.3938
Female*Asian	4.89	2.44	2	0.0452
Female*Black	0.62	0.91	0.68	0.4935
Female*Hispanic	-0.05	0.94	-0.06	0.9539
Female*White	-1.50	1.46	-1.03	0.3048
2006 Reading Achievement * 4th grade	-0.03	0.02	-1.8	0.0721
2006 Reading Achievement * 5th grade	0.00	0.02	-0.12	0.9033
2006 Reading Achievement * 6th grade	-0.05	0.02	-2.96	0.003
2006 Reading Achievement * 7th grade	0.06	0.02	3.55	0.0004
Fourth Grade*2006 Reading Performance - Warning	-7.51	2.44	-3.07	0.0021
Fourth Grade*2006 Reading Placement - Below	-12.15	1.55	-7.81	<.0001
Fourth Grade*2006 Reading Performance - Meets	-8.75	1.16	-7.53	<.0001
Fifth Grade*2006 Reading Performance - Warning	-3.49	2.42	-1.44	0.1497
Fifth Grade*2006 Reading Performance - Below	-10.69	1.46	-7.31	<.0001
Fifth Grade*2006 Reading Performance - Meets	-7.92	1.10	-7.21	<.0001
Sixth Grade*2006 Reading Performance - Warning	-3.25	2.35	-1.38	0.1666
Sixth Grade*2006 Reading Performance - Below	-8.81	1.39	-6.32	<.0001
Sixth Grade*2006 Reading Performance - Meets	-7.43	1.08	-6.85	<.0001
Seventh Grade*2006 Reading Performance-Warning	4.73	2.65	1.79	0.0742
Seventh Grade*2006 Reading Performance - Below	-9.47	1.40	-6.75	<.0001
Seventh Grade*2006 Reading Performance - Meets	-7.97	1.07	-7.44	<.0001
Eligible Non-Participants	-0.58	0.15	-3.79	0.0002

Total R-Square = .746

Appendix F

Analysis 1

Results of GLM predicting 2007 ISAT Math scores

Parameter	Estimate	Standard Error	T-value	Pr
Intercept	86.16	3.57	24.1	<.0001
Gender	0.45	0.86	0.52	0.6022
With Disability	-6.59	0.38	-17.33	<.0001
2006 Math Achievement	0.74	0.01	63.04	<.0001
4th Grade	-0.47	4.84	-0.1	0.9231
5th Grade	-28.49	4.90	-5.81	<.0001
6th Grade	-22.06	4.81	-4.59	<.0001
7th Grade	-36.67	4.76	-7.7	<.0001
2006 Math Performance - Warning	1.84	1.37	1.35	0.1783
2006 Math Performance - Below	-5.11	1.07	-4.78	<.0001
2006 Math Performance - Meets	-4.55	0.83	-5.5	<.0001
American Indian	-6.06	5.87	-1.03	0.3017
Asian	3.36	1.65	2.03	0.042
Black	-2.08	0.60	-3.49	0.0005
Hispanic	0.64	0.61	1.05	0.2948
White	1.79	0.60	2.99	0.0028
4th Grade*Disability	2.60	0.58	4.49	<.0001
5th Grade*Disability	-0.12	0.55	-0.22	0.8278
6th Grade*Disability	-0.08	0.53	-0.15	0.877
7th Grade*Disability	0.79	0.94	0.84	0.3995
Female*American Indian	6.61	6.66	0.99	0.3214
Female*Asian	4.25	2.33	1.82	0.0686
Female*Black	0.25	0.87	0.29	0.7742
Female*Hispanic	-0.35	0.89	-0.4	0.6926
Female*White	-1.84	1.39	-1.32	0.1854
2006 Math Achievement * 4th grade	-0.08	0.02	-4.38	<.0001
2006 Math Achievement * 5th grade	0.07	0.02	4.15	<.0001
2006 Math Achievement * 6th grade	0.05	0.02	2.8	0.0052
2006 Math Achievement * 7th grade	0.11	0.02	6.61	<.0001
Fourth Grade*2006 Math Performance - Warning	-4.60	1.89	-2.43	0.015
Fourth Grade*2006 Math Performance - Below	0.34	1.46	0.23	0.8142
Fourth Grade*2006 Math Performance - Meets	1.43	1.06	1.35	0.1767
Fifth Grade*2006 Math Performance - Warning	0.94	1.99	0.47	0.6385
Fifth Grade*2006 Math Performance - Below	0.41	1.55	0.26	0.7922
Fifth Grade*2006 Math Performance - Meets	-2.33	1.17	-1.99	0.0461
Sixth Grade*2006 Math Performance - Warning	6.79	2.19	3.11	0.0019
Sixth Grade*2006 Math Performance - Below	4.62	1.70	2.71	0.0067
Sixth Grade*2006 Math Performance - Meets	6.55	1.39	4.72	<.0001
Seventh Grade*2006 Math Performance - Warning	8.37	2.02	4.15	<.0001
Seventh Grade*2006 Math Performance - Below	3.98	1.51	2.64	0.0084
Seventh Grade*2006 Math Performance - Meets	3.39	1.18	2.87	0.0041
Eligible Non-Participants	-1.80	0.15	-12.05	<.0001

Total R-Square = .788

Appendix G

Analysis 2

Results of GLM including interactions with SES participation - Reading

Interactions	DF	Type III SS	Mean Square	F Value	Pr
Gender * SES participation	1	25.72	25.72	0.14	0.713
Disability * SES participation	1	628.80	628.80	3.31	0.069
Race * SES participation	5	1221.41	244.28	1.28	0.2671
Grade * SES participation	4	704.89	176.22	0.93	0.447
2006 Reading Achievement Performance * SES participation	3	744.71	248.24	1.31	0.2706

Total R-Square = .746

Results of GLM including interactions with SES participation - Math

Interactions	DF	Type III SS	Mean Square	F Value	Pr
Gender * SES participation	1	799.28	799.28	4.69	0.0304
Race * SES participation	5	1591.96	318.39	1.87	0.0964
Disability * SES participation	1	620.38	620.38	3.64	0.0565
Grade * SES participation	4	2830.39	707.60	4.15	0.0023
2006 Math Achievement Performance * SES participation	3	588.83	196.28	1.15	0.3269

Total R-Square = .788

Appendix H

Analysis 3

Results of GLM comparing ISAT reading of SES providers with eligible non-participant group

Provider	Estimate	Standard Error	T Value	Pr
*A+ Tutoring Service, LTD	3.37	0.98	3.44	0.0006
*A.I.M. High - CPS	0.47	0.24	1.96	0.0499
Alternative Unlimited	-1.01	2.10	-0.48	0.6307
Brain Hurricane, LLC	0.84	1.63	0.51	0.6069
Brainfuse	2.58	1.95	1.32	0.186
Brilliance Academy	-0.72	0.79	-0.91	0.3608
*CS&C, Inc.-Julex Learning	4.51	1.80	2.51	0.012
Cambridge Educational Services	2.07	1.57	1.32	0.1882
*Catapult (online)	3.03	0.83	3.66	0.0003
Champions	0.02	0.75	0.03	0.9751
Club Z! In-Home Tutoring Services	0.71	0.90	0.80	0.4264
Education Station, A Sylvan Partnership	0.29	0.45	0.63	0.5257
Educational Specialties (on-site)	0.47	2.03	0.23	0.8157
**Failure Free Reading	-3.48	1.52	-2.28	0.0224
*Huntington Learning	5.07	1.86	2.72	0.0065
Literacy for All	-0.55	2.13	-0.26	0.7969
Newton Learning	0.07	0.40	0.17	0.8681
*One-to-One Learning Center	3.80	1.69	2.25	0.0243
Orion's Mind	-0.65	2.88	-0.23	0.821
Platform Learning, Inc.	-0.60	0.69	-0.88	0.3782
Progressive Learning	0.82	0.53	1.55	0.1214
School Service Systems	-0.54	0.73	-0.73	0.4632
*Socratic Learning	3.65	1.35	2.71	0.0068
Spectra Services	0.47	2.03	0.23	0.8178
The Princeton Review, Inc.	0.70	0.56	1.25	0.2121
*Unparalleled Solutions, Inc.	1.68	0.73	2.31	0.0208
*A+ Tutoring Service, LTD	3.37	0.98	3.44	0.0006
Eligible Non-SES Participants				

*Programs performed better than group of students that were eligible but did not participate in SES (P<.05).
**Programs performed worse than group of students that were eligible but did not participate in SES (P<.05).

Appendix I

Analysis 3

Results of GLM comparing ISAT math of SES providers with eligible non-participant group

Provider	Estimate	Standard Error	T Value	Pr
*A+ Tutoring Service, LTD	5.08	0.93	5.45	<.0001
*A.I.M. High - CPS	2.26	0.23	9.91	<.0001
Alternative Unlimited	2.05	1.99	1.03	0.3027
Brain Hurricane, LLC	1.83	1.54	1.19	0.2342
Brainfuse	2.33	1.85	1.26	0.2084
Brilliance Academy	0.74	0.75	0.99	0.3199
Cambridge Educational Services	2.80	1.50	1.86	0.0623
*Catapult (online)	2.99	0.78	3.81	0.0001
Champions	0.63	0.71	0.89	0.3726
Chess Academy LLC	2.10	1.56	1.34	0.1795
Club Z! In-Home Tutoring Services	-0.96	0.85	-1.13	0.257
Education Station, A Sylvan Partnership	1.58	2.15	0.73	0.4631
Educational Specialties (on-site)	-1.77	1.93	-0.92	0.3593
Huntington Learning	-0.54	1.76	-0.31	0.7601
Literacy for All	0.04	1.99	0.02	0.9837
Newton Learning	0.66	0.37	1.76	0.0784
One-to-One Learning Center	3.00	1.60	1.88	0.0603
Orion's Mind	-2.20	2.73	-0.81	0.4197
Platform Learning, Inc.	0.79	0.65	1.21	0.2259
*Progressive Learning	1.89	0.50	3.79	0.0002
*School Service Systems	1.94	0.70	2.79	0.0052
Socratic Learning	2.10	1.29	1.63	0.1035
Spectra Services	2.82	1.93	1.46	0.143
*The Princeton Review, Inc.	2.20	0.53	4.15	<.0001
*Unparalleled Solutions, Inc.	2.71	0.69	3.94	<.0001
Eligible Non-SES Participants				

*Programs performed better than group of students that were eligible but did not participate in SES (P<.05).

Appendix J

Analysis 4

Results of GLM predicting 2007 ISAT Reading scores

Parameter	Estimate	Standard Error	T-value	Pr
Non-District Providers AIM High	-0.11	0.28	-0.38	0.7031

Total R-Square = .721

Results of GLM predicting 2007 ISAT Math scores

Parameter	Estimate	Standard Error	T-value	Pr
Non-District Providers AIM High	0.75	0.28	2.7	0.0069

Total R-Square = .771

Appendix K

Analysis 5

Results of GLM predicting 2007 ISAT Reading scores

Parameter	Estimate	Standard Error	T-value	Pr
Intercept	78.56	3.62	21.71	<.0001
Gender	0.45	0.99	0.46	0.6476
With Disability	-11.66	0.45	-25.88	<.0001
2006 Reading Achievement	0.69	0.01	54.76	<.0001
4th Grade	0.49	5.62	0.09	0.93
5th Grade	-5.51	5.19	-1.06	0.2881
6th Grade	8.81	4.78	1.84	0.0655
7th Grade	-13.38	4.98	-2.69	0.0072
4th Grade*Disability	5.59	0.75	7.48	<.0001
5th Grade*Disability	3.14	0.70	4.5	<.0001
6th Grade*Disability	4.78	0.68	7.07	<.0001
7th Grade*Disability	3.63	0.64	5.71	<.0001
2006 Reading Performance - Warning	4.95	1.99	2.49	0.0126
2006 Reading Performance - Below	7.82	1.12	6.97	<.0001
2006 Reading Performance - Meets	7.38	0.87	8.43	<.0001
American Indian	2.66	6.90	0.39	0.6993
Asian	2.31	1.84	1.26	0.2079
Black	-2.56	0.69	-3.69	0.0002
Hispanic	0.64	0.71	0.9	0.366
White	2.42	1.07	2.27	0.0231
Female*American Indian	-3.81	7.79	-0.49	0.625
Female*Asian	3.47	2.59	1.34	0.1793
Female*Black	0.20	1.00	0.2	0.8432
Female*Hispanic	-0.68	1.03	-0.66	0.5087
Female*White	-2.33	1.57	-1.48	0.1389
2006 Reading Achievement * 4th grade	-0.03	0.02	-1.21	0.2253
2006 Reading Achievement * 5th grade	0.01	0.02	0.37	0.7105
2006 Reading Achievement * 6th grade	-0.03	0.02	-1.81	0.0703
2006 Reading Achievement * 7th grade	0.06	0.02	3.42	0.0006
Fourth Grade*2006 Reading Performance - Warning	-6.71	2.72	-2.47	0.0136
Fourth Grade*2006 Reading Performance - Below	-11.76	1.76	-6.7	<.0001
Fourth Grade*2006 Reading Performance - Meets	-8.62	1.30	-6.66	<.0001
Fifth Grade*2006 Reading Performance - Warning	-3.24	2.64	-1.22	0.2207
Fifth Grade*2006 Reading Performance - Below	-11.32	1.61	-7.02	<.0001
Fifth Grade*2006 Reading Performance - Meets	-8.56	1.20	-7.15	<.0001
Sixth Grade*2006 Reading Performance - Warning	-2.07	2.53	-0.82	0.4126
Sixth Grade*2006 Reading Performance - Below	-8.43	1.51	-5.58	<.0001
Sixth Grade*2006 Reading Performance - Meets	-7.37	1.16	-6.36	<.0001
Seventh Grade*2006 Reading Performance - Warning	4.77	2.82	1.69	0.0915
Seventh Grade*2006 Reading Performance - Below	-9.44	1.49	-6.32	<.0001
Seventh Grade*2006 Reading Performance - Meets	-7.92	1.13	-6.99	<.0001

Total R-Square = .749

Appendix L

Analysis 5

Results of GLM predicting 2007 ISAT Math scores

Parameter	Estimate	Standard Error	T-value	Pr
Intercept	84.72	3.82	22.18	<.0001
Gender	0.57	0.94	0.61	0.5422
With Disability	-6.69	0.41	-16.3	<.0001
2006 Math Achievement	0.74	0.01	58.78	<.0001
4th Grade	-1.46	5.39	-0.27	0.7872
5th Grade	-28.73	5.38	-5.34	<.0001
6th Grade	-23.94	5.19	-4.61	<.0001
7th Grade	-35.70	5.08	-7.03	<.0001
2006 Math Performance - Warning	2.01	1.46	1.38	0.1685
2006 Math Performance - Below	-5.18	1.14	-4.55	<.0001
2006 Math Performance - Meets	-4.50	0.88	-5.14	<.0001
American Indian	-8.87	6.54	-1.36	0.1751
Asian	2.79	1.73	1.61	0.1066
Black	-1.84	0.66	-2.81	0.0049
Hispanic	0.74	0.67	1.1	0.2727
White	1.12	1.01	1.1	0.2713
4th Grade*Disability	1.64	0.68	2.41	0.0158
5th Grade*Disability	2.18	0.64	3.42	0.0006
6th Grade*Disability	0.03	0.60	0.04	0.9664
7th Grade*Disability	-0.16	0.58	-0.28	0.7785
Female*American Indian	11.04	7.39	1.49	0.1352
Female*Asian	4.84	2.47	1.96	0.05
Female*Black	0.24	0.95	0.25	0.8039
Female*Hispanic	-0.34	0.97	-0.35	0.7292
Female*White	-1.88	1.50	-1.26	0.2091
2006 Math Achievement * 4th grade	-0.08	0.02	-3.74	0.0002
2006 Math Achievement * 5th grade	0.08	0.02	3.91	<.0001
2006 Math Achievement * 6th grade	0.05	0.02	2.81	0.0049
2006 Math Achievement * 7th grade	0.10	0.02	6.08	<.0001
Fourth Grade*2006 Math Performance - Warning	-4.42	2.11	-2.1	0.0359
Fourth Grade*2006 Math Performance - Below	0.98	1.62	0.61	0.5436
Fourth Grade*2006 Math Performance - Meets	1.95	1.17	1.67	0.0941
Fifth Grade*2006 Math Performance - Warning	0.32	2.18	0.15	0.8832
Fifth Grade*2006 Math Performance - Below	0.28	1.69	0.16	0.8697
Fifth Grade*2006 Math Performance - Meets	-2.57	1.26	-2.03	0.0421
Sixth Grade*2006 Math Performance - Warning	7.49	2.36	3.18	0.0015
Sixth Grade*2006 Math Performance - Below	5.60	1.83	3.06	0.0022
Sixth Grade*2006 Math Performance - Meets	7.27	1.48	4.9	<.0001
Seventh Grade*2006 Math Performance - Warning	7.16	2.16	3.32	0.0009
Seventh Grade*2006 Math Performance - Below	3.43	1.61	2.13	0.0331
Seventh Grade*2006 Math Performance - Meets	2.87	1.25	2.29	0.0221

Total R-Square = .790

Appendix M

Breakdown of ISAT Performance Levels and Scale Scores

	Reading				Math			
GRADE	Warning	Below	Meets	Exceeds	Warning	Below	Meets	Exceeds
3rd	120-155	156-190	191-226	227-329	120-162	163-183	184-223	224-341
4th	120-157	158-202	203-236	237-341	120-171	172-199	200-246	247-355
5th	120-160	161-214	215-246	247-351	120-179	180-213	214-270	271-369
6th	120-166	167-219	220-256	257-360	120-193	194-224	225-275	276-379
7th	120-173	174-225	226-266	267-369	120-206	207-234	235-280	281-392
8th	120-179	180-230	231-277	278-364	120-220	221-245	246-287	288-410