



Research Brief

Supplemental Educational Services (SES) Provision of No Child Left Behind: A Synthesis of Provider Effects

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Supplemental Educational Services (SES) Provision of No Child Left Behind

Major Findings

- SES programs have a small, but statistically significant, positive impact on student achievement.
- Average effect size estimates were $+.043$ for math programs and $+.017$ for reading programs. These estimates are based on a synthesis of more than 400 individual provider effects derived from rigorous studies involving over 140,000 students.
- Previous Title I intervention programs have had substantially higher average effect sizes than the SES program.
- Four characteristics were found to be indicative of more effective programs.
- SES programs provided by school districts had larger positive effect sizes than those offered by outside providers.

Abstract

The 2001 renewal of the United States' Title I program instituted the Supplemental Educational Services (SES) program, in which schools in their third year of failing to make Adequate Yearly Progress (AYP) are required to offer out-of-school-time tutoring in core subjects to low-income students. This study synthesized provider effects reported in the extant body of SES provider evaluations to generate an estimate of the overall effectiveness of the SES policy in terms of improving student achievement and to identify provider characteristics that are associated with variation in student achievement effects.

Background

The 2001 renewal of the United States' Title I program, which provides federal funds to schools with large populations of low-income students, instituted the Supplemental Educational Services (SES) program. The SES program requires schools in their third year of failing to make Adequate Yearly Progress (AYP) to offer out-of-school-time tutoring in core subjects to low-income students.

This program, an integral part of the *No Child Left Behind* (NCLB) legislation reauthorizing the Elementary and Secondary Education Act, allows either public or private agencies to provide tutoring services. SES provides funding for out-of-school or extended-day tutoring services to students enrolled in targeted schools. Funds to pay for SES are allocated from Title I funds and account for up to 20% of these funds. Annually, more than half a million children participate in SES. Additionally, hundreds of tutoring agencies have been approved to provide services across the nation.

Much of the responsibility for SES programs lies with individual states. These responsibilities require states to approve, oversee, and evaluate their SES providers. According to NCLB legislation, states must withdraw those providers from the approved list who failed to provide evidence of improved academic achievement of students served for two consecutive years (USGAO, 2006). This process has proved difficult, however, as there are neither federal regulations nor funds for evaluating SES providers.

Nevertheless, a number of state and local school districts have conducted rigorous empirical evaluations of provider effects since 2003. There are now enough individual provider effect estimates from high quality studies to permit a synthesis of effects to gauge the overall effectiveness of SES policy in improving student achievement, and to identify provider characteristics that may be associated with variations in student outcomes.

The purpose of this study was to analyze this information by synthesizing and modeling provider effects to estimate the effectiveness of SES as a whole, to inform the design of effective programs, and to assist in the development of scientifically-based criteria upon which to base approval, removal, and continuance decisions.

Study Methodology

To conduct the analysis, Hedges and Olkin's (1985) meta-analytic parametric estimation of effect sizes methodology was used to estimate mean effect size estimates for math and reading outcomes and to identify characteristics of SES providers associated with variation in effects. Studies incorporated in the meta-analysis had to meet the following inclusion criteria:

- Reported a sample size (n);
- Reported an effect size (Cohen's d) by provider or contained sufficient information to compute an effect size;
- Restricted the analyses to students who received at least 15 hours of SES tutoring.
- Compared SES student performance to that of a comparison group of SES-eligible students attending the same schools;
- Measured student achievement with a valid and reliable standardized test; and
- SES provider characteristics could be gleaned from the report or other reliable sources.

Results

Overall, 400 math effects and 401 reading effects were collected and analyzed, yielding a grand total of 801 effects. The math and reading effects were analyzed independently to determine an overall mean effect size for SES on the outcomes in each subject area. For the math analyses, 28 SES evaluations were included from 12 states or local school districts. For the reading analyses, 27 SES evaluations from 11 states or local school districts were included in the meta-analysis.

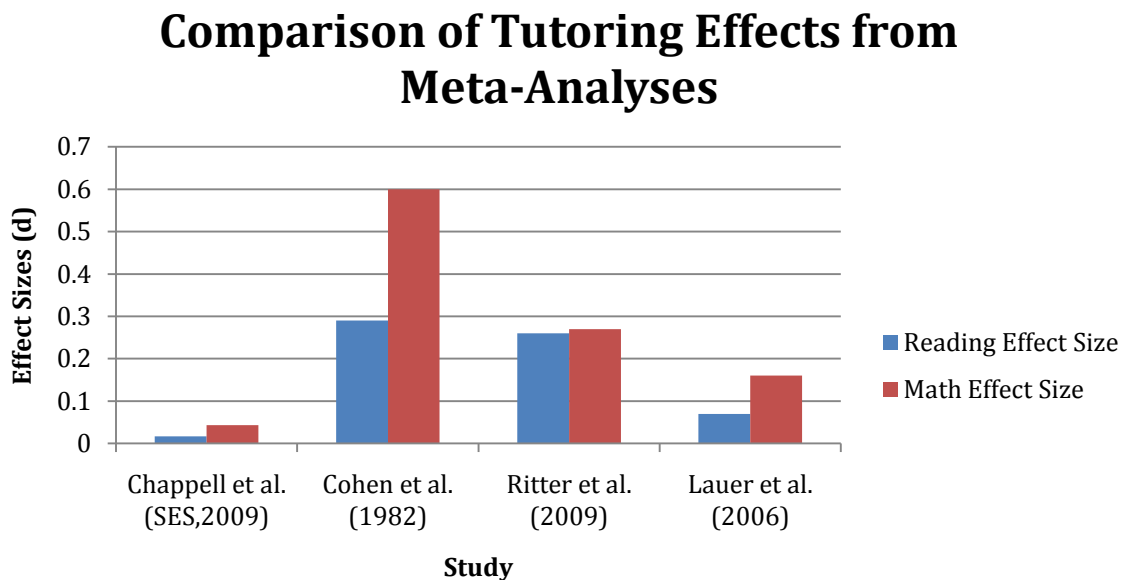
The mean weighted math effect size was $+.043$. The number of students included in these studies was 140,846. Despite being quite small, the 95% confidence interval indicated that the $+.043$

effect size was statistically significant. The mean weighted reading effect size was +.017. The number of students included in these studies was 139, 844. The test for statistical significance at the 95% confidence interval indicated that the overall mean reading effect, though also very small, was statistically significant.

Generally, effect sizes of .20 are considered small, effect sizes of .50 are considered moderate, and effect sizes of .80 are considered large (Cohen, Manion, & Morrison, 2000). However, in the context of previous educational research, much smaller effect size estimates might be expected (Hill, Bloom, Black, & Lipsey, 2008). Even in this light, the effect size estimates revealed in this analysis are very small, particularly the reading outcome.

To appropriately interpret the effect sizes reported in this study, they should be placed in the context of the effectiveness of other Title I reform efforts and syntheses of tutoring effects. Meta-analyses of tutoring programs over the last quarter century have revealed much larger effects of tutoring on student achievement. For example, a meta-analysis of tutoring programs conducted by Cohen et al. (1982) revealed effect sizes of .29 for reading and .60 for math. A meta-analysis of volunteer tutoring programs conducted by Ritter et al. (2009) found a similar overall effect size for reading, .26, and a .27 overall effect size for math tutoring. An examination of out-of-school-time instructional efforts conducted by Lauer et al. (2006) found a .07 overall effect size for reading and a .16 overall effect size for math programs both of which are much lower than Cohen et al.'s (1982) and Ritter et al.'s (2009) findings but still substantially higher than what was found here. A comparison of tutoring effects from meta-analyses is illustrated in Figure 1.

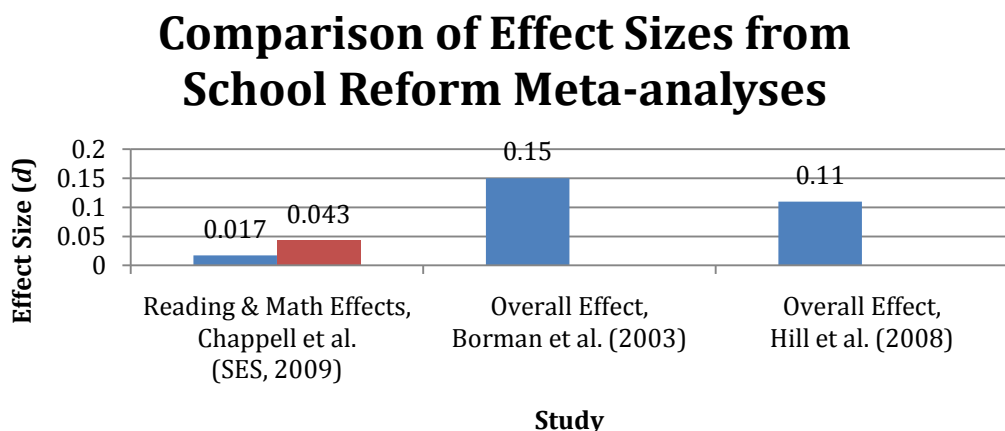
Figure 1. A comparison of tutoring effects by subject area from meta-analyses.



SES also appears to be far less effective in improving student achievement than previous approaches supported by previous Title I policies. For example, a meta-analysis of comprehensive school reform (CSR) efforts revealed an overall effect size of +.15 (Borman, Hewes, Overman, & Brown, 2003), which according to Hill et al. (2008) could be interpreted as

a moderate to large program effect. The authors of that study concluded that CSR was positively impacting achievement on a school-wide basis and that effects were larger the longer the programs were in place (Borman et al., 2003). Similarly, a meta-analysis of all Title I programs from Title I's inception (1965) until 1994 revealed an overall effect of +.11, which also can be interpreted as a moderate effect (Hill et al., 2008) and is much higher than the effect sizes of the SES program found here. Figure 2 compares the effect sizes of SES to other Title 1 reforms.

Figure 2. A comparison of effect sizes of Title I school effectiveness meta-analyses.



Analysis of Provider Characteristics

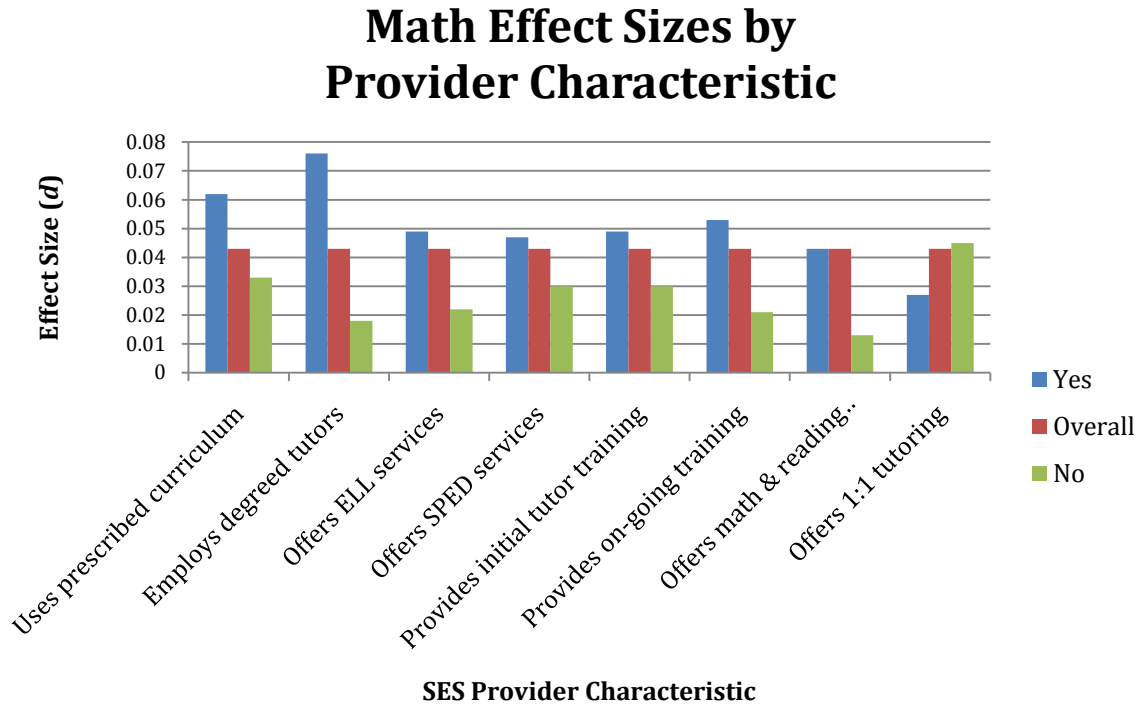
Further analysis revealed that the effect sizes found here were not consistent across studies for either the math or reading subject areas. This lack of consistency indicates that variance in the effects across studies may be attributable to other variables (Hedges & Olkin, 1985). In other words, certain SES provider characteristics may help explain the differences between outcomes for these studies.

For the math analyses, the results revealed that providers exhibiting the following characteristics had larger mean effect sizes:

- Used a prescribed curriculum;
- Employed only tutors with 4-year degrees;
- Offered English Language Learner (ELL) services;
- Provided Special Education (SPED) services;
- Supplied initial training to tutors;
- Offered on-going training to tutors;
- Provided both math and reading subject tutoring; and
- Supplied 1:1 tutoring (as opposed to small-group tutoring).

Figure 3 illustrates the effect sizes for providers who exhibited these characteristics versus overall effect sizes and effect sizes for providers who do not share these characteristics. Consistent with findings from previous research on math tutoring, providers offering small group tutoring tended to have larger effect sizes than those offering 1:1 tutoring. (Juel, 1996; Lauer et al., 2006).

Figure 3. A comparison of math effect sizes by provider characteristics.

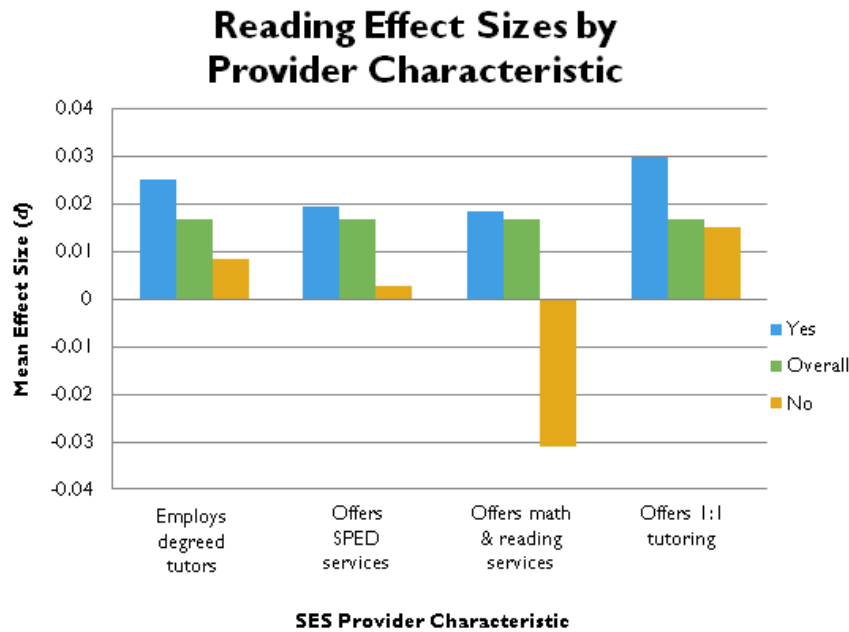


For the reading analyses, the results revealed that providers exhibiting the following characteristics had larger mean effect sizes:

- Employed only tutors with 4-year degrees
- Offered Special Education services
- Provided both math and reading subject tutoring
- Utilized 1:1 tutoring (as opposed to small-group tutoring)

Figure 4 shows the effect sizes for providers who exhibit these characteristics compared to the overall effect sizes and to effect sizes for providers who do not share these characteristics. Other provider characteristics revealed either negligible or negative effect sizes.

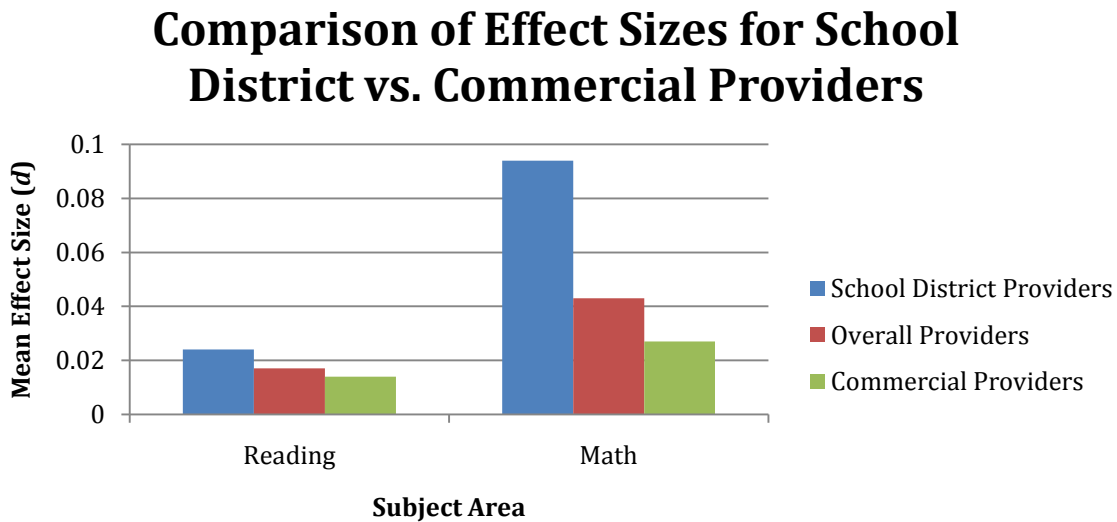
Figure 4. A comparison of reading effect sizes for tutor characteristics.



School District Providers

For both the math and reading analyses, local school district providers, when compared to other SES providers, had a higher mean effect size (math effect size = .094, reading effect size = .024) than the overall mean effect size of each subject area from their commercial counterparts. Figure 5 illustrates the differences among the three effect sizes for each subject area. These results indicate that, on average, local school district providers have a more substantial impact on student achievement than commercial or other non-profit providers.

Figure 5. A comparison of effect sizes for local school districts vs. commercial Providers.



School district providers may show greater effect sizes due to characteristics inherent in district composition and service delivery. These characteristics include using tutors who hold at least a four-year degree, using a prescribed curriculum, offering tutoring in both subject areas, and offering services to ELL and SPED students. All of the district providers included in the analysis possessed each of these characteristics. A review of the literature on tutoring also indicates several of these same traits as essential for a successful tutoring program (Cohen et al., 1982; Fashola, 1998; Topping, 2000; Wasik, 1998).

Conclusions & Recommendations

The legislative intent of the SES program is to narrow or close the achievement gap by improving the academic achievement of historically underperforming populations. Our findings indicate that the overall effect of SES on student achievement is quite small when compared to previous Title 1 reforms and previous studies of tutoring effects.

The results of this study provide some guidance for design and approval of SES tutoring services, which, consequently, are consistent with decades of prior research on tutoring. Characteristics of effective SES tutoring programs identified in this study include (a) the use of school district providers; (b) experienced, well-trained tutors with four-year degrees; (c) a national or prescribed curriculum; and, (d) one-to-one tutoring for reading instruction. Effect size estimates for both the math and reading analyses were higher for providers that had these traits.

Although the evidence presented here provides some guidance for structuring and approving SES provider programs, the small overall effects associated with SES suggest that, as a policy, SES is not having the desired effect. In cases where school districts were granted an exception and were allowed to offer their own SES programs, the school districts were three times more effective in increasing math achievement relative to other providers. School district programs also were offered at a fraction of the cost-- the costs of providing SES are all marginal for school districts, whereas private and non-profit providers incur additional fixed costs.

As Congress considers re-authorization of the Elementary and Secondary Education Act, we suggest a careful review of the Supplemental Educational Services provision in light of these findings. Despite mounting evidence that SES is far less effective than previous Title I policies, we are not aware of a single instance in which a provider has been removed from an approved state list on the basis of failing to demonstrate positive effects on student achievement.

References

- Bathon, J. & Spradlin, T. (2007). *Outcomes of the School Choice and Supplemental Educational Services provisions of NCLB*. Bloomington, IN: Center for Evaluation and Education Policy.
- Borman, G., Hewes, G., Overman, L., & Brown, S. (2003). Comprehensive School Reform and achievement: A meta-analysis. *Review of Educational Research*, 73, 125-230.
- Cohen, L., Manion, L., & Morrison, K. (2000). *Research methods in education*. London: Routledge Falmer.
- Cohen, P., Kulik, J., & Kulik, C. (1982). Educational outcomes of tutoring: A meta-analysis of findings. *American Educational Research Journal*, 19(2), 237-248.
- Colasanti, M. (2007). *Examples of state monitoring and evaluation of Supplemental Educational Service providers*. Denver, CO: Education Commission of the States.
- Fashola, O. (1998). *Building effective afterschool programs*. Thousand Oaks, CA: Corwin Press.
- Hedges, L. & Olkin, I. (1985). *Statistical methods for meta-analysis*. San Diego, CA: Academic Press, Inc.
- Hill, C., Bloom, H., Black, A., & Lipsey, M. (2008). Empirical benchmarks for interpreting effect sizes in research. *Child Development Perspectives*, 2(3), 172-177.
- Juel, C. (1996). What makes literacy tutoring effective? *Reading Research Quarterly*, 31(3), 268-289.
- Lauer, P., Akiba, M., Wilkerson, S., Apthorp, H., Snow, D., & Martin-Glenn, M. (2006). Out-of-school time programs: A meta-analysis of effects for at-risk students. *Review of Educational Research*, 76(2), 275-313.
- No Child Left Behind Act. (2001). Pub. L. No. 107-110.
- Nunnery, J., Pribesh, S., & Chappell, S. (2009). *Issues in estimating Supplemental Educational Services provider effects: A review of state evaluations*. San Diego, CA: Paper presented at the annual meeting of the American Educational Research Association, April, 2009.
- Peterson, P. (2005). Making up the rules as your play the game. *Education Next*, 5(4), 43- 48.
- Ritter, G., Barnett, J., Denny, G., & Albin, G. (2009). The effectiveness of volunteer tutoring programs for elementary and middle school students: A meta-analysis. *Review of Educational Research*, 79(1), 3-38.
- Stullich, S., Abrams, A., Eisner, E., & Lee, E. (2009). *Title I implementation – update on recent evaluation findings*. Washington, DC: U. S. Department of Education, Office of Planning, Evaluation, & Policy Department, Policy & Program Studies Service.
- U. S. Department of Education. (2005). *Supplemental Educational Services non-regulatory guidance*. Washington, DC: Author. Retrieved February 12, 2009 from <http://www.ed.gov/policy/elsec/guid/suppsvcsguid.doc>.
- U. S. Department of Education. (2007a). *National assessment of Title I final report. Summary of key findings*. Washington, DC: Author.
- U. S. Department of Education. (2007b). *Status and trends in the education of racial and ethnic minorities*. Washington, DC: National Center for Education Statistics (NCES).
- U. S. Government Accountability Office. (2006). *No Child Left Behind Act. Education actions needed to improve local implementation and state evaluation of Supplemental Educational Services* (US GAO Publication No. GAO-06-758). Washington, DC.
- Wasik, B. (1998). Using volunteers as reading tutors: Guidelines for successful practices. *Reading Teacher*, 51(7), 562-570.