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Abstract

This study examined the effectiveness of Supplemental Educational Services (SES) tutoring in increasing the reading and mathematics achievement of Title I students in a Florida elementary school. Kindergarten through fifth grade students who had been matched on their previous performance on the Florida Assessment in Reading (FAIR) or the District Baseline Math test were grouped based on voluntary participation or non-participation in SES tutoring. Scores on the same tests were then compared after the conclusion of SES tutoring. Results showed no gains in improvement for students who received SES tutoring relative to students who did not participate in SES tutoring. Implications for policy are discussed.

The No Child Left Behind Act (NCLB, 2001), a reauthorization of the Elementary and Secondary Education Act of 1965 (ESEA), requires that all students reach their state's proficiency goal by 2014 and raises expectations by requiring states to bring all schools and all student subgroups to the same level of performance. Further, the law continues the federal government's effort to provide Title 1 funding to assist with the education of children from low-income families, one of the subcategories of students who must make progress if a school is to be considered to have made Adequate Yearly Progress (AYP) (Choi, Seltzer, Herman, & Yamashiro, 2007; Eckes & Swando, 2009). Some of this assistance to children from low-income families currently takes the form of Supplemental Educational Services; more than 50,000 public schools used $14.5 billion in Title 1 funds in 2010 to provide additional academic support to help low-achieving children **(**United States Department of Education, ESEA Title 1 LEA Allocations, 2010**)**. To insure that schools are being effective and that all schools and all student subgroups achieve the same level of performance, states must establish accountability systems, identify failing schools, and improve student achievement (Sunderman, 2010).

Prior to the 2014 – 2015 academic year, Florida students in grades 3-11 were given the Florida Comprehensive Achievement Test (FCAT) each spring in reading and mathematics as part of Florida's accountability system. Students in grades four, eight and ten were given an additional writing assessment and students in grade five, eight and ten received additional testing in science. Schools made Adequate Yearly Progress (AYP) by meeting the yearly state criterion in reading, mathematics and writing, and students were considered proficient if they achieved levels 3 – 5. A further requirement for AYP, however, was that the achievement of White, Black, Hispanic, Asian, American Indian, English language learners,

economically disadvantaged students, and students with disabilities be measured and calculated both within the whole group and separately. Simply put, a school may fail to meet AYP due to one subgroup not meeting the reading or mathematics standard. For instance, if all students meet standards in reading but English Language Learners fail to meet standards in mathematics the school is not considered to make AYP (Eckes & Swando, 2009).

Under NCLB, a school that fails to make AYP two years in a row is considered a School in Need of Improvement (SINI) (U.S. Department of Education, 2001). Students who attend a Title 1 SINI and who come from low-income families (as defined by qualification for free or reduced lunch programs) are offered the opportunity for SES. Districts must allocate 20% of their Title 1 funds for SES services so these students can receive tutoring at no cost; Title 1 funds also support special preschool, after school, and summer programs to reinforce the regular school curriculum (United States Department of Education, Title 1, Part A Program, Types of Projects, 2010). Parents of students eligible for SES are notified at the beginning of the year and may select both a provider and an area of instruction (reading or mathematics). Eligible SES providers are approved by the state Department of Education and may be public, private, faith-based, or a local education agency. According to the Department of Education's Fiscal Budget Request (2011) 86% of approved providers across the nation were private providers as of May, 2007. Only 11% of approved providers were school districts or public schools. Once an SES provider has been selected, a minimum of 20 hours of tutoring must be furnished, and it may be provided either to individuals or groups and be conducted at the home, in the community, or in the school. Instruction begins after SES providers administer a pre-test and write individual learning plans. The tutors also record attendance and administer a post-test.

Though regulations have been written, money has been spent, and services have been provided, research regarding the impact of SES on student achievement is still in its infancy. There is little evidence of the effectiveness of SES at improving student achievement (Burch, Steinberg & Donovan 2007; Fusarelli 2007; Henrich, Meyer, &Whitten, 2010; Munoz, Potter and Ross, 2008). Further, it can be difficult for parents to wisely select between providers. An analysis of SES provider effectiveness in Tennessee found no statistically significant effects on student achievement in reading/language arts or math (Ross, Neergaard, Harrison, Ford, & Paek, 2009). Finally, "SES accountability represents the weakest kind of policy design. It relies on self-reported data from providers, is complaince driven, and provides no money for the evaluation of the program" (Burch, 2007, p. 128).

Despite the lack of research on the efficacy of SES, $2 billion of Title I funding was allocated for SES services in a recent year (Bracey, 2005). In fact, just the Florida school district in which this study was conducted spent approximately $4,000,000 for SES services in one year (United States Department of Education, ESEA Title 1 LEA Allocations, 2010). SES providers for the district under study received $1390.00 for each participating child in 2010-2011, and the district served over 2,500 students that year. Given the magnitude of the expenditures for SES programs, policymakers and other stakeholders need to know the extent to which these programs are successful. The purpose of this study was to determine if participation in SES services

resulted in increased student achievement at a Title I elementary school in Southwest Florida. Specifically, the study compared achievement gains in reading and math for students who received SES services in grades K – 5 and those who qualified for SES tutoring but did not participate.

Method

Participants

Study participants were drawn from a Title 1 elementary school in Southwest Florida in which 99% of the students meet Florida's definition as members of minority groups and 98% qualify for free or reduced-price lunch programs. As such, all students qualified for participation in SES services. Students in the experimental group were those in grades kindergarten through five whose parents voluntarily consented for their child(ren) to participate in SES tutoring from October 2010 to January 2011; the control group was composed of students who did not participate in SES tutoring but were who matched with the experimental group on the following criteria during the same time period:

1. Grade level
2. For students in grades K – 2, Probability of Reading Success (PRS) score on the Florida Assessment Inventory for Reading (FAIR) during Assessment Period 1.
3. For students in grades 3 – 5, Probability of FCAT Success (FSP) score for reading, Reading Comprehension (RC) Score, and Word Analysis Assessment Scores (WAAS) of the Florida Assessment Inventory for Reading (FAIR) during Assessment Period 1.
4. Baseline District Math Assessment raw score for students tutored only in math.

Because participants entered the experimental group through voluntary self-selection, the number of participants varies by grade level and subject area in which tutoring was accepted.

Instruments

Florida Assessments for Instruction in Reading (FAIR).

The Florida Assessments for Instruction in Reading (FAIR) assess students in grades kindergarten through two in phonemic awareness, phonics, fluency, vocabulary, text comprehension, and spelling; testing for students in grades three through five is similar with the exclusion of phonemic awareness and the embedding of vocabulary within text comprehension (Elzie and Foorman, 2009). Content validity from the FAIR was derived from Florida Sunshine State Standards, and predictive validity of the Broad Screen was based on correlations with performance on reading in grades kindergarten through two on the Stanford Achievement Test (SAT). A student's Probability for Reading Success Score indicates the likelihood that he/she will perform at the 40^{th} percentile or better on the end of the year test (Florida Assessments for Instruction in Reading, Technical Manual, 2009 – 2010).

In grades 3 – 12, the primary purpose of the broad screen is to predict future performance on the FCAT. The predictive validity of the broad screen was addressed through a series of linear and logistic regressions. A negative predictive power was utilized to develop FAIR cut points. The cut-point selected for the FAIR was negative

predictive power of 85%. Those students identified as not at risk by achieving an FSP on the FAIR of 85% would achieve at least a Level 3 on the end of year FCAT reading test (Florida Assessments for Instruction in Reading, Technical Manual, 2009 – 2010). The Probability of Reading Success (PRS) score predicts the student's percent chance of being at or above grade level by the end of the year based on the performance for that assessment period and time of year. A student reading at the 40th percentile or better on the Stanford Achievement Test is meeting standards in reading (Florida Assessments for Instruction in Reading Technical Manual, 2009-2010). Grade 1 and Grade 2 PRS scores are derived from performance on the FAIR Test.

For this study the PRS was used to measure reading achievement in grades K-2 and the FCAT Success Probability (FSP) score plus Reading Comprehension and Word Analysis Scores were used to measure reading achievement in grades 3-5. The FCAT Success Probability (FSP) score is used to gauge the probability of passing the FCAT at each assessment period. However, because the FSP score includes prior FCAT as well as current FAIR reading comprehension ability, the FSP score is not a true measure of students' reading abilities.

Baseline District Math Assessment.

The District Baseline Math assessment was used to measure math achievement for students receiving supplemental educational services in math. The baseline and mid-year tests measure math achievement by grade level based on the Next Generation Sunshine State Standards for Math. The Math Baseline and Mid-Year Assessment were be used because the school district has decided this test is a valid indicator of student math achievement. The test is administered in a paper and pencil format in 1st grade, and students in grades 2 – 5 are tested on a computer. Test scores are based on percentage of items correct. The Math District Assessment Test has been correlated to achievement on the FCAT for grades 3-5 by the school district but attempts to obtain the district's validity and reliability statistics have been unsuccessful.

Procedure

Student achievement data in reading from the FAIR Assessment Period 1(AP1) and FAIR Assessment Period 2 (AP2) were collected using the Florida Progress Monitoring Network (PMRN). Math District Assessment Baseline and Mid-year data were obtained using Pinnacle Analytics, a data storage base for student achievement in the school district. ANOVAs were used to compare the reading and math scores of students who received SES services to those of students that did not receive SES services.

Results

The purpose of this research was to study the effect of Supplemental Educational Services (SES) on student achievement in reading and math at a Title 1 elementary school in Southwest Florida. To determine these effects, three hypotheses were tested.

First, student assessment results were analyzed to determine if participation in SES tutoring resulted in statistically significant gains in reading achievement for students in kindergarten through grade two. Thirty-three students in these grades participated in tutoring, and were matched with 33 students who had achieved similar PRS scores during AP1. Prior to SES tutoring, the FAIR AP1 mean scores were 56.09 (SD 20.55) for the SES group and 56.24 (SD 20.05) for the non-SES group. After tutoring, the FAIR

AP2 means scores were 69.96 (SD 20.39) for the SES group and 62.96 (SD 21.93) for the non-SES group. Because these results indicated a gain in reading scores for participants in SES tutoring, an ANOVA was run to determine if the difference in reading performance after SES tutoring was significant. This ANOVA revealed that the difference between group means was not statistically significant at the .05 level ($F(1, 64) = 1.601$, $p = .210$).

Table 1

FAIR Mean Reading Achievement Scores Between

Measures	**SES**	**Non-SES**
	M (SD)	***M (SD)***
	AP1	
FSP1	30.84 (23.58)	30.89 (22.82)
RC1	13.53 (12.70)	14.63 (16.25)
WAAS1	40.37 (20.85)	33.97 (25.60)
	AP2	
FSP2	32.92 (22.69)	34.50 (21.89)
RC2	16.39 (15.45)	15.21 (10.56)
WAAS2	31.87 (22.83)	35.29 (24.29)

FSP1= FCAT Success Probability Assessment Period 1
RC1= Reading Comprehension Assessment Period 1
WAAS1=Word Analysis Assessment Score Assessment Period 1
FSP2= FCAT Success Probability Assessment Period 2
RC2=Reading Comprehension Assessment Period 2
WAAS2= Reading Comprehension Assessment Period2

The second hypothesis to be tested was to determine if SES tutoring resulted in statistically significant reading achievement gains for students in grades three to five. To determine this, 76 students were matched on FCAT Success Probability (FSP) Scores achieved during testing in Assessment Period 1 (AP1). The mean AP1 score for the 38 SES participants was 30.84 (SD 23.58) and was 30.89 (SD 22.82) for the 38 non-SES students. After matching, student performance both prior to and after tutoring was compared on the FSP scores, Reading Comprehension (RC) scores, and Word Analysis Assessment Scores (WAAS). Table 1 shows mean performance by group on these measures both prior to and after tutoring.

Table 2 shows the changes in performance of each group on each of the subtests. Examination of this table reveals that while the SES group made larger gains on the Reading Comprehension subtest than the group that did not participate in tutoring, the opposite occurred for each the FSP subtest and the WAAS subtest. The mean gain by the non-tutored group on the FSP subtest was 1.76 points larger than the gain of the SES group, and the mean score of the SES group on the WAAS declined by 8.53 points after tutoring, compared to a gain of 1.37 points by the non-tutored group.

Table 2

Reading Gains Between SES and Non-SES Groups

Measures	SES M (SD)	Non-SES M (SD)
Gains FSP	2.13 (8.37)	3.89 (10.7)
Gains RC	3.29 (11.0)	.58 (15.1)
Gains WAAS	-8.53 (18.5)	1.37 (17.64)

An ANOVA was run to test for statistical significance of the between-group differences at the .05 level. Gains between groups for the FSP scores were not statistically significant ($F(1,74) = .640$, $p = .426$), nor were gains between groups for the RC scores ($F(1,74) = .754$, $p = .388$.) Gains between groups for the WAAS score were statistically significant at the 0.5 level, $F(1,73) = 5.643$, $p = .020$. However, the gains made were significantly higher for the Non-

SES group, and the SES group had a decline in test performance after tutoring.

The third analysis looked for differences in mean mathematics achievement in grades 1 – 5 for students who participated in SES tutoring compared to students who did not participate in SES tutoring. Table 3 displays the mean results for beginning of the year baseline test and the mid-year math assessment along with the gains made between each assessment for each group.

Table 3
District Mean Math Baseline and Mid-Year Scores by Group Grades 1-5

Measures	SES[a] *M*(*SD*)	Variance SES	Non-SES[b] *M* (*SD*)	Variance Non SES
Mid-Year	55.86(15.04)	240.361	55.11 (13.85)	191.810
Baseline	42.49 (10.04)	100.904	42.09 (10.08)	101.787
Total Gains	13.37		13.02	

[a]n=35
[b]n=35

Results of an ANOVA indicate that the mean math gains between the SES group and the Non-SES group was not statistically significant at the .05 level ($F(1,68)=0.55$, $p=.815$); participating in SES tutoring in math did not result in increased student math achievement when compared to students who did not participate in tutoring.

Discussion

Implications

Though relatively little research has been conducted on the efficacy of SES, both the studies reported earlier and the study described in this paper come to the same conclusion: there is no evidence that SES increases student achievement. Further, successive studies of SES implementation in a variety of locations each confirm this finding. This is concerning, especially because the 20% Title 1 funding requirement means that less money is available for competing approaches to increasing student achievement such as preschool, after school, and summer programs. Based on these findings, it would seem that wise policy makers would come to one of two conclusions: either discontinue the requirement for provision of SES or find ways to improve a system that is not accomplishing its objective.

Should policy makers consider discontinuing SES, a number of options exist for reallocation of the funding. One of these would be to cede control of the newly available funds to local school districts, each of which would presumably understand its own special needs and be competent to develop solutions for underachieving Title 1 students. Local districts might choose to expand options currently available such as preschool, summer programming, or after school tutoring by currently employed and certified teaching staff. Other strategies local districts might wish to pursue include reducing class sizes for this student population, purchasing technology that will allow for more focused instruction, or providing training and incentives for parents, older siblings, or community members to provide in-home homework assistance. It should be expected that school districts will come up with other novel

approaches based on their knowledge of local cultures and the types of educational problems they are facing. It is reasonable to expect policy makers, when giving control of funding to the districts, to also require accountability measures to document the effectiveness of any approaches tried.

It is probably more likely that policy makers will want to maintain control of funding, however. If so, another solution to the problem is to fix the system that is currently in place, making SES more effective. The place to start on this is by looking at the current system to find its weaknesses.

One current weakness of SES is that no qualifications for service providers are stipulated. If it is logical to assume that our current system of certification is necessary to insure that teachers are qualified to teach, it seems illogical to assume that SES providers with no minimum qualifications are likely to improve instruction and gain better results for students. Rather, in exchange for receiving government funding to increase student achievement, SES providers should be required to insure that their employees have the skills and training necessary to work effectively with children. As such, requirements for degrees in the subject area tutored, teaching certification, or some other measure of qualification must be established.

Second, payment for independent providers must be dependent on the achievement of results. Under current systems, schools receive financial rewards when their students do well on standardized tests and are punished financially when their students fail to make expected progress in learning. Providing financial incentives to private companies with no requirement for quality performance seems counterintuitive. In general, for-profit companies seek to maximize earnings by selling their product (in this case, student tutoring) for as much money as possible while paying as little as possible for the material of production. IF they follow this model, SES providers currently have incentives to hire the least expensive tutors that they can, regardless of qualifications, and employ them for a minimum period of time (currently 20 hours), thereby maximizing their profits. It would seem more likely that good results will be achieved for students if individual target achievement goals are set and providers receive payment only after these goals have been hit. For example, students could receive independent pretesting, an appropriate achievement goal could be set, and tutoring could be conducted. When formative assessments convince the provider that the targeted goals have been achieved, an independent summative assessment could be performed to determine compensation.

Use of this strategy might allow several other possibilities. First, a series of achievement goals could be set for each student, allowing the provider to receive incrementally higher payments for different amounts of student achievement. Another possibility would be that the gain scores of individual students are combined, and service providers are rated and paid based on their overall level of success. Use of this approach would also allow disqualification of service providers whose results do not meet minimum standards. The critical factor is that there must be independent evaluation of results to determine the efficacy of services before payment is made, similar to the treatment of public schools under current school rating systems that reward or punish schools based on student achievement. Finally, it is recommended that student progress continue to be monitored after

cessation of tutoring to make sure that learning gains are sustained.

Limitations

Though the authors believe that the findings of this study are valid, there are a number of limitations to the study that were beyond their control. First, no information was available from providers regarding the length of tutoring that was provided to each student. Analysis of these data may have revealed that there is a threshold level of service above which tutoring is successful, thus guiding future practice. Related to this, there was also no information regarding the qualifications of individual service providers, the curriculum used by providers, or the setting in which services were provided. Again, analysis of these variables may have allowed for identification of more versus less effective practices. Finally, no information was available regarding the size of the groups of students undergoing tutoring. Better control of this variable may have resulted in findings that would have guided future attempts to group students to achieve maximum success.

Conclusion

Accountability has been at the fore of educational reform efforts, as evidenced by legislation such as the No Child Left Behind Act. As part of this accountability, the progress of individual students, subgroups of students, schools has been measured, with financial rewards and punishments for schools dependent on the results. The same level of accountability has been lacking, however, for the private providers that tutor failing students at great expense to the American taxpayer. This study and others like it demonstrate that the payment of 20% of Title 1 funding to private SES providers has not resulted in achievement gains for failing students. As such, oversight similar to that imposed on public schools should be imposed on the private SES providers, or other means must be found to increase the achievement of students whose performance continues to lag more than a decade after the passage of No Child Left Behind.

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