





The Implementation and Effectiveness of Supplemental Educational Services (SES): A Review and Recommendations for Program Improvement

Carolyn J. Heinrich, University of Wisconsin, Madison

Patricia Burch, University of Southern California

Corresponding author's email: cheinrich@Lafollette.wisc.edu

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Introduction

The 1965 Elementary and Secondary Education Act (ESEA) initiated Title I federal funding to facilitate for all students an equal opportunity to receive the highest quality education possible. Providing tutoring for struggling students is just one of many possible uses of Title I funds, including teacher professional development, computer labs, instructional materials, teacher assistants, and more.

The No Child Left Behind (NCLB) Act, signed into public law in 2002 to close the achievement gap in public education, specifically requires public schools that have not made adequate yearly progress (for at least two consecutive years) to offer parents of children in low-income families the opportunity to receive extra academic assistance, or supplemental educational services (SES). Consistent with the intent of the law to promote "accountability, flexibility, and choice," SES is implemented at the local level and draws largely on the private sector to offer eligible students a range of choices for free tutoring outside of regular school hours. Although no new federal monies were allocated along with this mandate, the law lays out criteria and guidelines for state and local educational agencies in approving SES providers, arranging for their services, and managing contracts and financial systems. School districts with eligible schools are obligated to set aside 20% of their Title I funding for SES and to measure provider effectiveness in increasing student achievement.¹

In arranging for SES, state and local educational agencies have drawn on a fairly well-established market of after-school tutoring programs. As SES expanded tutoring opportunities for low-income students, a substantial number of diverse organizations newly entered the market to compete for available SES funds, with widely varying hourly rates, tutor qualifications, tutoring session length, instructional strategies, and curriculums (Burch, Steinberg, Donovan, 2007; Burch 2009). The flux in the SES vendor market is considerable—many smaller organizations enter and leave after attracting few students, while others have rapidly expanded their share of students served. Some school districts have also operated their own SES programs, although as this is conditional on the district making adequate yearly progress, district roles as providers also come and go. The substantial year-to-year fluctuations complicate state and local educational agency efforts to comply with NCLB requirements in identifying organizations that provide services consistent with state and local instructional programs and withdrawing approval from providers that fail to increase student academic achievement for two years.²

In theory, accountability for SES is supposed to be realized primarily through the exercise of choice by parents and students, who ostensibly use information distributed by school districts and SES providers to identify the best provider to meet the children's needs. Students who become aware of their eligibility may choose to register for SES with a specific SES provider, and SES providers invoice the school district for the number of hours of SES students attend, up to a maximum per-student dollar allocation. If the program worked as the law intended, the more effective providers would increase their share of students attending SES over time. However, the service agreement between a district and its SES providers is, effectively, a cost-reimbursement contract (with no performance contingencies). In addition, only state educational agencies have program design authority, for example, to approve SES providers and establish program criteria, such as an acceptable student/tutor ratio for providers to meet.

The fact that SES takes place outside of the regular school classroom and that instructional practices are known to vary significantly—not only between providers, but also within the same provider depending on the setting and specific tutor—further challenges state and local agency efforts to acquire knowledge of SES content and effectiveness. As Burch and Good (2009) point out, the features of SES that are key to its effectiveness—activities and resources used in instruction, the nature of interactions between students and providers, and institutional and structural elements that influence tutoring practices—are

among the least visible to states and school districts. That said, afterschool study and tutoring programs have long been in operation, including federally funded programs, and there is a large body of research on their implementation and effects, include studies specifically focused on SES.

In this paper, we review the evidence on the effects of SES on student achievement and update the evidence on what makes it effective (or why SES fails). We draw on expanding district evaluation efforts and the published literature in this area, as well as our own recent and ongoing multisite, multi-method studies of the implementation and effectiveness of SES. In particular, we address these key questions: Who attends SES and for how many hours? What are the estimated effects of SES (from our study and others), and how do they compare to those of alternative interventions? What is happening in an invoiced hour of SES? What policy changes or levers might improve SES? We conclude with recommendations for program and policy change in consideration of the forthcoming reauthorization of ESEA/Title I.

Participation in SES and its Impacts

Since the start of SES, school districts have been under pressure to comply with federal requirements to make SES available to as many eligible students as funding allows and to assess vendor effectiveness in increasing the achievement of participating students. School district accountability and evaluation units have attempted to measure program effectiveness, and in some cases, SES provider efficacy; however, there are numerous challenges to properly evaluating student- and vendor-level SES effects that both district staff and researchers face.

First, participation in SES is voluntary among students eligible for SES. NCLB requires school districts to use the same data to determine eligibility for SES that they use for making within-district Title I allocations (historically, information on free school lunch eligibility), and school districts are required to notify families of their children's eligibility and the availability of approved SES providers. If more students are expected to sign up for SES than there are funds available to serve them, districts have to establish additional criteria to determine which eligible students get access to services (preferably before registration opens). However, even if students are eligible and given the opportunity to register for SES, not all decide to follow through in attending with a chosen provider, and some stop attending before their total SES dollar allocation is expended. Therefore, selection into "treatment"—or who gets tutored in SES programs and for how long—is influenced by student and family characteristics and program administration.

There are a number of reasons to believe that there will be selective differences between SES-eligible students who register and attend SES and those who do not. For example, students more frequently absent during the regular school day are more likely to forego an after-school option, and analyses from our multisite study show that the percent of days absent in the prior school year is one of the most consistent, negative predictors of both registration for SES and SES attendance across the study districts. We also found that one of the most consistent, positive predictors of SES registration and attendance is whether the SES-eligible student had attended SES in the prior school year. As long as one can measure differences such as these in students who register/attend and those who do not, they can be adjusted for in estimating SES effects. However, if those registering and attending differ in ways that are not observed or measured and that relate to student achievement (e.g., in the level of encouragement they receive from regular school-day teachers), problems in generating accurate estimates of SES effects may be unavoidable. Our research has also shown that it is important to separately model and account for the multiple stages of selection—registration, attendance and the number of hours attended—as the influence of student characteristics differs across them. For example, we find across multiple sites and

years that whites, Hispanics and Asians are significantly *less* likely to register for or attend SES, but if they attend, they are significantly more likely than African Americans to reach attendance thresholds of 40 or 60 hours. English language learners (ELL students), alternatively, are more like to register, attend and to attend more hours than non-ELL students.

Assuming that researchers and district evaluators can adequately adjust for these selective differences in who follows through in participating in SES, ideally we would like to understand what the added value is of each additional hour of SES attended. Put another way, what number of hours of SES do students need to attend before we start to see effects on their reading and math achievement? To estimate this statistically, we need to have sufficient numbers of students with hours of SES attended across a range of the possible distribution of SES hours. In practice, however, the number of hours students attend SES is also influenced mechanically by the rate per hour charged by SES providers and the dollars allocated per-student by districts for SES. For example, in one school district in our multisite study, approximately \$1300 was allocated per student for SES, while over 70% of the participating students received SES from a provider charging \$75 or more per hour. At this rate per hour and per-student allocation, the maximum hours of tutoring a SES provider could offer a student was about 18 hours. Across the districts in our study, we observed the same spikes in the distribution of hours attended among registered students, with the largest close to zero hours or 20 hours (depending on grade level), and smaller spikes around 40 and 60 hours of SES attended. The implication is that we are able to more reliably estimate SES effects at these common thresholds of attendance, while we are limited in our ability to estimate the added value of an additional hour of SES (using rigorous methods that effectively adjust for selection).

Evidence on SES effects

In many states and school districts, evaluations of SES and/or provider-specific effects are notably deficient. Some states and districts rely only on information self-reported by providers or from relatively feeble data gathering efforts, such as parent satisfaction rates from voluntarily completed surveys (with very low and selective participation). Other districts attempt to make the best use of their administrative data to evaluate SES effectiveness, although it is a handful of the larger districts that have the in-house capabilities to apply more rigorous approaches that account for student selection and other estimation problems. In fact, among the more advanced district evaluation efforts, there has been some consistency in study findings. For example, in evaluations conducted by Chicago Public Schools (CPS) in 2003-04, 2004-05, 2006-2007 and 2007-08, larger gains in reading and mathematics were reported for students receiving at least 40 hours of tutoring and for students in grades 4-8 who were not ELL and who received at least 30 hours of SES tutoring. Consistent with other CPS findings, a study by the Los Angeles Unified School District (Rickles and Barnhart, 2007) found low SES participation, and even among students with the highest levels of SES attendance, "fairly small" program effects, attributed primarily to improved performance by elementary students. In addition, studies in Minneapolis (Heistad, 2007) and Milwaukee Public Schools (Heinrich, Meyer and Whitten, 2010), where average SES hours attended are particularly low, did not find statistically significant, positive effects of SES participation.

Springer, Pepper and Ghosh (2009) point out that very few studies rigorously adjust for student selection into SES—identifying only four studies besides their own that did so (Zimmer, 2006 and 2007; Heistad, 2007 and Heinrich, Meyer and Whitten, 2010)—which limits our ability to draw credible conclusions about SES effectiveness. That said, an important insight from the broader literature on after-school tutoring programs, which is consistent with that of SES evaluations to date, is that reaching some minimal threshold of tutoring hours appears to be critical to producing measurable effects on

students' achievement (as measured primarily by test scores). Lauer et al. (2006) conducted a synthesis of research on out-of-school-time programs (specifically in response to NCLB requirements to offer SES) and found that effect sizes were larger for programs that were more than 45 hours in duration, although they became smaller for those longest in duration. In our own ongoing research estimating the effects of SES, we find 40 hours of tutoring to be a critical threshold; below 40 hours of tutoring, we do not identify any statistically significant effects of SES on students' math and reading gains (as measured by changes in test scores). In addition, we find effects on both math and reading achievement for elementary students who receive at least 40 hours of SES, but only effects on gains in math for middle school students. Springer et al. (2009) and Zimmer et al. (2006) likewise found more consistent, positive effects of SES on students' math (vs. reading) gains in their studies of SES in large, urban school districts.

Another common finding in studies of SES is that younger children—specifically, elementary school students—are more likely to attend SES (after registering for a program) and to attend more hours than middle school or high school students (see, for example, our Burch et al., 2011 multisite study findings, Zimmer et al., 2007 and Springer et al., 2009). Unfortunately, studies such as Zimmer et al., 2007, which explored the effects of SES across multiple school districts (Baltimore, Chicago, Long Beach, Los Angeles, Palm Beach, Philadelphia, San Diego and Washington DC), and Springer et al. did not estimate SES effects by grade level (or elementary, middle or high school). However, both of these studies did explore the potential *cumulative* effects of SES for students who attended more than one year and found substantially larger cumulative effects on student math and reading test score gains. This evidence, along with other corroborating findings in the studies discussed here, point to the essential role of the number of SES hours received in generating effects on students' math and reading gains.

As indicated above, an important challenge in getting more hours of SES to students is the hourly rate charged by SES providers, which in combination with district (per-student) maximum allocations of SES dollars, limits the total number of hours of tutoring students can receive. State and local educational agencies do not have authority to proscribe or control the hourly rates charged by SES providers (other than district-operated ones), although they may specify a range. Logically, one would expect that providers charging higher hourly rates would be delivering higher-quality tutoring services. In our current and prior research (Burch et al., 2011; Heinrich et al. 2010), however, other than whether a provider is on-line, we see little correlation between provider characteristics—such as student-teacher ratios, total hours offered, student attendance, curriculum design, etc.—and hourly rates charged. Furthermore, in our ongoing study (including approximately 300 providers), we find that even when controlling for student selection into on-line vendors and the number of hours of SES students attend, there is a negative relationship between on-line SES provision and students' math and reading gains (relative to "off-line" providers). This finding is disconcerting given that in our sample, on-line vendors charge significantly more for their services (\$24 per hour more) than other providers.

We now look at effect sizes, because they are standardized and can therefore be compared across studies. An effect size is the change—measured in standard deviations—in an average student's outcome that can be expected if the student participates in the intervention (SES). While there are some differences in estimated SES effect sizes—for math and reading and across studies with different samples, treatment measures and approaches to estimating effects—there is also clearly some congruence in findings. The average increase in math test score gains of 0.09 standard deviations reported by Zimmer et al. (2007) is approximately the same that we find for middle school students who attend at least 40 hours of SES in our multisite study. Springer et al. (2009) also find increases in test score gains of about 0.09 standard deviations in mathematics (and 0.076 standard deviations in reading, consistent with Zimmer et al.), although in an alternative specification that accounted for those who registered but did not attend SES, they did not find statistically significant effects on reading

(comparable to our multisite study results). Our multisite study separately estimates SES effects for elementary school students; we find comparably-sized effects for math and reading (effect sizes of approximately 0.06 standard deviations, range: 0.054-0.076) that are just slightly smaller than those for middle school students. In addition, Zimmer et al. (2007) find larger, *cumulative* effects of SES for students enrolled for two or more years, equivalent to 0.17 and 0.15 standard deviations in mathematics and reading, respectively, while the cumulative effect estimates from the Springer et al. (2009) study are even larger at an estimated 0.39-0.48 standard deviations.

In comparison with other interventions targeted to elementary and middle school students, however, these effect sizes for SES are substantively small. Based on effect sizes compiled by Hill et al. (2008) from randomized studies and a meta-analysis of other meta-analyses of similar, supplemental educational interventions, an estimated (one-year) effect size of 0.06 standard deviations is one-fourth to one-fifth the size of mean effect size estimates from educational interventions targeted toward elementary school students (0.23-0.33). Mean effect sizes from randomized studies of interventions for middle school students, ranging from 0.27 to 0.51, imply the average SES-effect sizes range from one-tenth to one-third the size of effects of other similar educational interventions for these students. At the same time, the findings on SES effects are very consistent with those reported for interventions more generally under NCLB that rely on standardized achievement tests to hold districts and states accountable for results; a National Academy of Sciences study (forthcoming) concluded that school-level, test-based programs and incentives under NCLB have effect sizes, on average, of approximately 0.04-0.08 standard deviations, with measurable effects to date that are concentrated in elementary grade mathematics and are small in relation to expected improvements.

Finally, to put these effect sizes into perspective with regular school achievements, we estimate that on average, *not including administrative costs*, school districts spend an amount equal to about 15% of their average annual per-pupil costs on SES (i.e., for hours of SES invoiced by providers). Using 0.06 standard deviations as the average gain from SES participation, this is equal to about 11-16% of the average annual gains in math (0.54) and reading (0.38) by 3rd-5th graders (on nationally-normed tests). Thus, for elementary students (for whom studies are most likely to find statistically significant impacts of SES), SES is, at best, nearly as cost-effective (in producing student achievement gains) as spending on regular school day activities. In other words, the gains from participation in SES relative to average (regular school day) gains in math and reading are, at best (i.e., without full accounting of costs) approximately equal to (or slightly less) than those achieved with the same fraction of spending by schools districts on regular school day activities.

Beyond Effect Sizes: What is in an Hour of SES?

It was the intent of NCLB to facilitate as free a choice as possible for students and parents in selecting SES providers and program types. Under the law, school districts cannot impose requirements on tutors, and the only authority they have in terminating a provider's contract occurs when the provider violates district policies (e.g., building use) or other such terms of a contract. District staff responsible for administration of SES contend that their hands are tied in monitoring providers, and they also point out that SES tutors do not have to meet "highly qualified" standards nor have specific training to be SES tutors. They also allege that state educational agencies have been lax in evaluating providers, setting minimum standards for tutoring quality or requesting essential information on applications for assessing and monitoring quality, or following through on district complaints about provider incompetence or misconduct. And with very few resources for program administration, let alone monitoring and

evaluation, district staff have been stretched to find time to observe SES providers and better understand what is taking place in an hour of SES for which districts are invoiced.

A distinguishing feature of our multisite, multi-method study of the implementation and effectiveness of SES (Burch et al., 2011) is an in-depth qualitative component designed to define key elements of SES program models and to identify how policy and implementation potentially mediate or influence SES impacts. What do we see happening in practice (at the classroom level) in an invoiced hour of SES, how does this vary across different SES provider settings, districts, formats and approaches to tutoring, and how does it relate to program effectiveness?

Because the law intentionally offers SES providers wide-ranging flexibility in the design of their programs, assessing program fidelity is a somewhat elusive task. Still, considering the law and information specified in provider contracts with districts, some directives for content focus, location, and the use of research-based practices are clear. First, SES providers should make reading and mathematics the content focus of instruction, and instruction has to be provided outside of the regular school day. Providers are not required to offer services to students with disabilities (SWD) or English language learners (ELL), but if providers offer these services, the law requires them to be advertised, and districts are responsible for providing these services if no provider is able to or agrees to do so. In addition, the law states that SES tutoring should be "high-quality, research-based, and specifically designed to increase student academic achievement" [Section 1116(e)(12)(C)]. In our study, we interpret "research-based" practices as best practices identified as making a measurable impact on student achievement by out-of-school-time (OST) literature or content area specialists.

Best practices for out-of-school time tutoring and their use in SES

Although there is little research on best practices specific to SES, prior research on OST programs generally tells us that high-quality programs are characterized by: (1) consistent and sustained instructional time; (2) small grouping patterns (no larger than 10:1, but smaller is better); (3) curriculum that is content-rich, differentiated to student needs and connected to students' regular school day learning; (4) instruction (or content delivery) that is varied (e.g., structured and unstructured, independent and collective, etc.), active (not desk time, worksheets, etc.), focused on skills development, sequenced to achieve skill development objectives, and explicit in its targeting of specific skills; (5) positive relationships between tutors, students and peers; and (6) teachers/tutors with both content and pedagogical knowledge and continuous support, as well as constructive evaluation, from their administrators. To identify these best practices in SES sessions, Burch et al. (2010) designed a standardized observation instrument to systematically collect information on teaching methods and instructional materials in use and to identify the impact of different formats, resources (curriculum materials, staffing, etc.), and instructional methods on students' observed levels of engagement.

To date, observations of 56 tutoring sessions across a range of provider characteristics—including online, in-home, in-school, and community-based tutoring; for-profit, not-for-profit, district-provided, and faith-based organizations; providers with large market share (in terms of students served), two or more years of SES provision and with higher than average levels of student attendance; and providers advertising services to SWD and ELL populations—have been made in five, large urban school districts in four states. In general, the model of tutoring observed tended to take the form of traditional academic learning environments, with students being tutored in tested subjects—mathematics and reading—and typically in the form of whole group instruction (with more than one student and one focal activity). In other words, rather than providing something innovative, active and very different from the regular school day, SES was based on traditional forms of teacher-directed instruction.⁴ For example, tutoring sessions of two or more students were structured into a single activity with no "opt-out" activity in

about two-thirds of sessions observed. Research on out-of-school time (OST) argues, without qualification, for differentiated programming that responds to students' different learning styles or needs. In addition, students attending SES who might learn best via project-based learning, arts integration or links to community-based activities encountered few opportunities of this sort. Perhaps most troubling, however, very few tutors with training or experience in ELL or SWD instruction were present during tutoring, and with very few exceptions, neither curriculum nor instruction was tailored in any way to the unique needs of these students. On a more encouraging note, across districts and formats, tutors were observed engaging with students in a predominantly positive way. SES consistently occurred in small groups with tutoring sessions rating highly on indicators such as "Provide constructive criticism"; "Encourage participation from disengaged students"; and "Listen actively and attentively to students".

The observation instrument also allowed for assessment of continuity of practice across an entire session and how much *instructional* time students were actually receiving. Irrespective of the format, students received less instructional time than what was advertised or invoiced by providers, although the magnitude of these differences varied by format. In more than half of all observations with two or more students (primarily off-line, school-based settings), students that started a session were observed missing part of the session or leaving the tutoring session altogether, or students came in late (what we call "attendance flux"). Through interviews with tutors and provider administrators, we confirmed that school-based SES programs often compete with other after school programs (e.g. athletics, clubs) for students' time, and classrooms with multiple students required coordination and set-up that cut into instructional time. Regardless, the quantitative and qualitative findings of our multisite study together suggest that students are not getting enough hours of high-quality, differentiated SES instruction to produce significant gains in their learning, and given that invoiced hours do not equal instructional time, this is not a problem that will be resolved *only* by setting minimum hours standards for SES providers.

Recommendations for Policy and Program Change in SES

In considering the reauthorization of ESEA and the potential role of SES as a tool for improving the academic achievement of low-income students, one has to acknowledge that public support exists, including among many parents, for continuing an intervention that (at least in concept) provides free, extra academic assistance to struggling students. However, the best available evidence to date suggests that SES has been minimally effective, producing only small effects for a relatively small fraction of students, primarily elementary-aged, who get a sufficient number of hours of tutoring. If SES is to continue and to do a better job of increasing student achievement in reading and math, participating students not only need to get more hours of *instructional* time, but they also need to receive higher-quality and appropriately differentiated instruction. We offer the following recommendations for improving the effectiveness of SES, addressing program design and the responsibilities of state and local educational agencies in implementation and the front-line role of SES providers in delivering services.

The current division of responsibilities between state and local educational agencies for monitoring and accountability of SES providers is not working well. The districts contract with and pay SES vendors to provide services, but they have no authority to set standards for tutor or service quality, minimum hours of SES per enrolled student or hourly rates charged. Research shows a strong relationship between the intensity of SES (the number of hours attended) and its effectiveness, and SES provider hourly rates directly influence the number of hours of SES students can attend. The fact that we observed widely varying hourly rates across and within providers—with one provider charging less than half the rate per hour in one district than it charged in another—suggests the potential for states and districts to exert

more control over hourly rates with the acceptable ranges they specify. More generally, we recommend that districts be allowed and encouraged to negotiate performance-based contracts with SES providers that facilitate greater control over hourly rates and minimum SES hours provided, tutor qualifications and curriculum (particularly for serving ELL and SWD populations) and other programmatic and financial management factors. States could similarly negotiate performance-based contracts with district-operated providers. However, if performance-based contracts are to be effectively designed and managed, it will be important to allow some fraction of Title I resources to be used in managing them as well.

Another consistent finding in district-based studies and other research is that participation and attendance in SES are significantly lower for high school students than for elementary and middle school students. To date, no studies have shown SES to be effective for high school students, and attendance flux (associated with competing activities) is also likely greater for high school students. Alternatively, we found that ELL students were more likely to register for and attend SES, and yet there was little knowledge of or accommodation for the special curriculum and instructional needs of ELL or students with disabilities in SES sessions. These findings suggest a policy change that would redirect SES resources from the high school level to lower grades and toward new efforts and programming to better serve ELL and SWD enrollees.

On-line SES providers generally charge more for their services, possibly because they typically provide computers for instruction that their students are subsequently allowed to keep. Not surprisingly, as state and local educational agencies have cracked down on providers' use of incentives to attract students to their programs and encourage attendance, the share of students signing up with on-line providers has grown. District staff expressed concern that some students attend SES only long enough to "earn" the computer, and generally, due to their higher hourly rates, students get significantly fewer hours of instruction with on-line providers. We recommend that state and local educational agencies undertake a thorough assessment of what on-line providers offer in an SES session—including quality and differentiation in the curriculum—and consider, along with their assessments of other providers, what criteria or key elements should bear on (and with what weight) the hourly rate-setting of SES providers. Information gathered on provider performance on these criteria should be communicated widely to students and parents. Again, districts will need additional financial and technical support to undertake these evaluations and effectively disseminate the findings to students and parents.

Finally, large urban school districts, in particular, appear to be increasingly stretched in their ability to provide SES to all eligible students who sign up for SES. If policies are implemented to increase the number of hours a given SES participant attends, as we recommend, it likely that in the absence of additional funding, even fewer students will be served. Some districts have already had to establish additional eligibility criteria beyond stricter low-income requirements, and we further recommend that these criteria emphasize reaching those students who are most severely underperforming with adequate levels of tutoring. In addition, it is likely to take greater coordination and communication between SES providers and their tutors, school administrators, regular school-day teachers and parents to effectively serve these students most in need of extra academic assistance. In general, increased cooperation, transparency and openness in program management at both state and local levels, which we saw taking root in some districts, will also be essential to improving SES effectiveness.

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¹ In addition, 5% of this funding can be set aside for transportation for students eligible for choice programs.

² The Government Accountability Office (GAO 2006) reported that three-fourths of states experienced challenges in developing data systems for tracking and analyzing SES information and assessing students' academic progress, with no state producing a conclusive assessment of SES providers' effects on student academic outcomes.

³ Durlak, R., & Weissberg, R. (2007). The impact of after-school pro- grams that promote personal and social skills. Chicago: CASEL.; <u>Little, P., Wimer, C., & Weiss, H. (2008). Programs in the 21st Century: Their Potential and What it takes to Achieve It. Harvard Family Research Project; Vandell, D., Reisner, E., & Pierce, K. (2007). Outcomes linked to high-quality afterschool programs: Longitudinal findings from the study of promising practices. Irvine, CA: University of California and Washington, DC: Policy Studies Associates.</u>

⁴ Homework help and test preparation activities were present in some sessions but were not the dominant form of academic support.