IES PRACTICE GUIDE

WHAT WORKS CLEARINGHOUSE

Structuring Out-of-School Time to Improve Academic Achievement

NCEE 2009-012
U.S. DEPARTMENT OF EDUCATION

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The goal of this practice guide is to formulate specific and coherent evidence-based recommendations for use by educators using out-of-school time programming to address the challenge of improving student academic achievement. The guide provides practical, clear information on critical topics related to out-of-school time and is based on the best available evidence as judged by the panel. Recommendations presented in this guide should not be construed to imply that no further research is warranted on the effectiveness of particular strategies for out-of-school time.

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July 2009

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What Works Clearinghouse Practice Guide citations begin with the panel chair, followed by the names of the panelists listed in alphabetical order.

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Structuring Out-of-School Time to Improve Academic Achievement

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Introduction

This guide is intended to help educators, out-of-school time (OST) program providers, and school and district administrators structure academically focused out-of-school time programs. OST is an opportunity to supplement learning from the school day and provide targeted assistance to students whose needs extend beyond what they can receive in the classroom. With an increasing focus on school accountability and student performance, OST can play a meaningful role in improving academic achievement and closing the gap between low- and high-performing students. Although OST programs operate nationwide, disagreement about which aspects of these programs are beneficial for student achievement remains. This practice guide includes concrete recommendations for structuring an effective academically oriented OST program, and it illustrates the quality of the evidence that supports these recommendations. The guide also acknowledges possible implementation challenges and suggests solutions for circumventing the roadblocks.

A panel of experts in OST programs and research methods developed the recommendations in this guide and determined the level of evidence for each recommendation. The evidence considered in developing this guide ranges from rigorous evaluations of OST programs to expert analyses of practices and strategies in OST. In looking for effective practices, the panel paid particular attention to high-quality experimental and quasi-experimental studies, such as those meeting the criteria of the What Works Clearinghouse (WWC),[1] and to patterns of practices that are replicated across programs.

As with all WWC practice guides, the recommendations in this guide are derived from and supported by rigorous evidence, when possible. The research base for this guide was identified through a comprehensive search for studies evaluating academically oriented OST interventions and practices. An initial search for research on OST programs conducted in the United States in the past 20 years (1988–2008) yielded more than 1,000 studies. Of these, 130 studies examined school-based OST programs that serve elementary and middle school students and were eligible for further review. These studies were reviewed by the WWC to determine whether they were consistent with WWC standards. Of the 130 studies, 22 met WWC standards or met the standards with reservations. These 22 studies of 18 different OST programs represent the strongest evidence of the effectiveness of OST programs.[2]

In keeping with the WWC standards for determining levels of evidence, the panel relied on the following definitions (see Table 1):

A *strong* rating refers to consistent and generalizable evidence that an intervention strategy or program improves outcomes.[3]

A *moderate* rating refers either to evidence from studies that allow strong causal conclusions but cannot be generalized with assurance to the population on which a recommendation is focused (perhaps because the findings have not been widely replicated) or to evidence from studies that are generalizable but have more causal ambiguity than that offered by experimental designs (e.g., statistical models of correlational data or group comparison designs for

1. http://www.whatworks.ed.gov/.

2. See Table D2 for a summary of which studies are relevant to each recommendation.

3. Following WWC guidelines, improved outcomes are indicated by either a positive statistically significant effect or a positive, substantively important effect size (i.e., greater than 0.25). See the WWC guidelines at http://ies.ed.gov/ncee/wwc/pdf/wwc_version1_standards.pdf.

which equivalence of the groups at pretest is uncertain).

A *low* rating refers to expert opinion based on reasonable extrapolations from research and theory on other topics and evidence from studies that do not meet the standards for moderate or strong evidence.

It is important for the reader to remember that the level of evidence rating is not a judgment by the panel on how effective each of these recommended practices will be when implemented, nor is it a judgment of what prior research has to say about their effectiveness. The level of evidence ratings reflect the panel's judgment of the quality of the existing literature to support a causal claim that when these practices have been implemented in the past, positive effects on student academic outcomes were observed. They do not reflect judgments of the relative strength of these positive effects or the relative importance of the individual recommendations. Thus, a low level of evidence rating does not indicate that the recommendation is any less important than other recommendations with a strong or moderate rating. Rather, it suggests that the panel cannot point to a body of research that demonstrates its effect on student achievement. In some cases, this simply means that the recommended practices would be difficult to study in a rigorous, experimental fashion; in other cases, it means that researchers have not yet studied this practice, or that there is ambiguous evidence of effectiveness.[4]

Citations in the text refer to studies of programs that have implemented various practices. Not all of these programs contribute to the level of evidence rating: although some of these programs have had rigorous evaluations of their impacts, others have not. Furthermore, some of the programs that have been rigorously evaluated have found positive effects on academic achievement; others have not.[5]

The What Works Clearinghouse standards and their relevance to this guide

In terms of the levels of evidence indicated in Table 1, the panel relied on WWC Evidence Standards to assess the quality of evidence supporting educational programs and practices. WWC addresses evidence for the causal validity of instructional programs and practices according to WWC standards. Information about these standards is available at http://ies.ed.gov/ncee/wwc/pdf/wwc_version1_standards.pdf. The technical quality of each study is rated and placed into one of three categories:

- *Meets Evidence Standards* for randomized controlled trials and regression discontinuity studies that provide the strongest evidence of causal validity.

- *Meets Evidence Standards with Reservations* for all quasi-experimental studies with no design flaws and randomized controlled trials that have problems with randomization, attrition, or disruption.

- *Does Not Meet Evidence Screens* for studies that do not provide strong evidence of causal validity.

Following the recommendations and suggestions for carrying out the recommendations, Appendix D presents more information on the research evidence that supports each recommendation.

4. For more information, see the WWC Frequently Asked Questions page for practice guides, http://ies.ed.gov/ncee/wwc/references/idocviewer/Doc.aspx?docId=15&tocId=3.

5. Table D1 summarizes the details and effectiveness of studies consulted for the evidence rating of this guide.

We appreciate the efforts of Samina Sattar, Virginia Knechtel, Liz Potamites, and Claire Smither, MPR staff members who participated in the panel meetings, characterized the research findings, and drafted the guide. We also appreciate the help of the many WWC reviewers who contributed their time and expertise to the review process. We would like to thank Kristin Hallgren, Scott Cody, Shannon Monahan, and Mark Dynarski for their oversight and guidance during the development of the practice guide, and for helpful feedback and reviews of its earlier versions.

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Table 1. Institute of Education Sciences levels of evidence for practice guides

Strong	In general, characterization of the evidence for a recommendation as strong requires both studies with high internal validity (i.e., studies whose designs can support causal conclusions) and studies with high external validity (i.e., studies that in total include enough of the range of participants and settings on which the recommendation is focused to support the conclusion that the results can be generalized to those participants and settings). Strong evidence for this practice guide is operationalized as • A systematic review of research that generally meets WWC standards (see http://ies.ed.gov/ncee/wwc/) and supports the effectiveness of a program, practice, or approach with no contradictory evidence of similar quality; OR • Several well-designed, randomized controlled trials or well-designed quasi-experiments that generally meet WWC standards and support the effectiveness of a program, practice, or approach, with no contradictory evidence of similar quality; OR • One large, well-designed, randomized controlled, multisite trial that meets WWC standards and supports the effectiveness of a program, practice, or approach, with no contradictory evidence of similar quality; OR • For assessments, evidence of reliability and validity that meets the Standards for Educational and Psychological Testing.[a]
Moderate	In general, characterization of the evidence for a recommendation as moderate requires studies with high internal validity but moderate external validity or studies with high external validity but moderate internal validity. In other words, moderate evidence is derived from studies that support strong causal conclusions but generalization is uncertain or studies that support the generality of a relationship but the causality is uncertain. Moderate evidence for this practice guide is operationalized as • Experiments or quasi-experiments generally meeting WWC standards and supporting the effectiveness of a program, practice, or approach with small sample sizes and/or other conditions of implementation or analysis that limit generalizability and no contrary evidence; OR • Comparison group studies that do not demonstrate equivalence of groups at pretest and, therefore, do not meet WWC standards but that (1) consistently show enhanced outcomes for participants experiencing a particular program, practice, or approach and (2) have no major flaws related to internal validity other than lack of demonstrated equivalence at pretest (e.g., only one teacher or one class per condition, unequal amounts of instructional time, highly biased outcome measures); OR • Correlational research with strong statistical controls for selection bias and for discerning influence of endogenous factors and no contrary evidence; OR • For assessments, evidence of reliability that meets the Standards for Educational and Psychological Testing[b] but with evidence of validity from samples not adequately representative of the population on which the recommendation is focused.
Low	In general, characterization of the evidence for a recommendation as low means that the recommendation is based on expert opinion derived from strong findings or theories in related areas and/or expert opinion buttressed by direct evidence that does not rise to the moderate or strong level. Low evidence is operationalized as evidence not meeting the standards for the moderate or high level.

a. American Educational Research Association, American Psychological Association, and National Council on Measurement in Education (1999).

b. Ibid.

Structuring out-of-school time to improve academic achievement

Overview

Over the past three decades, changing labor force patterns in the United States have significantly increased the need for child care for school-age children. In 2000, nearly half of school-age children with working mothers spent time in non-parental supervised settings when they were not in school, including before- and after-school programs, family child care homes, and the homes of relatives.[6] Commonly known as out-of-school time (OST), this period outside of the school day when children are not with their parents has received extensive policy attention, focused on both the risks of negative influences during this time and the potential benefits the time holds for the positive development of school-age children.

Although many OST settings are designed primarily to provide a safe place for children to be outside of the traditional school day while parents work, there is now a broader movement toward using OST to bridge the gap between high- and low-achieving students and to give students more time to learn if they need it.[7] Academically oriented out-of-school programs and services are promising because students spend twice as much of their waking hours outside of the classroom as in it,[8] and OST periods, especially summer breaks, are the times when the achievement gap widens.[9]

OST programs offer a promising approach to enhancing students' academic skills and to closing the achievement gap. In recognition of this promise, funding for OST programs and services has grown in the past few years. As part of the No Child Left Behind (NCLB) legislation, districts are required to spend 5 percent to 20 percent of all Title I funds on supplemental educational services (SES).[10] Further, some states expanded funding for OST programs, even in the face of reduced budgets. For example, in 2002, California voters approved the addition of approximately a half billion dollars annually to existing state after-school programs.[11]

Similarly, the number of OST programs, including after-school, weekend, and summer programs and SES, has been increasing. In 1995, a U.S. Census Bureau study of child care arrangements showed that 5.6 percent of children ages 5 to 14 received care in a before- or after-school program according to parents in the sample.[12] In 2005, 20 percent of K–8 students participated in a before- or after-school program.[13]

6. Capizzano, Tout, and Adams (2000).

7. Halpern (1999).

8. Hofferth and Sandberg (2001).

9. Heyns (1978); Alexander, Entwisle, and Olson (2007a, 2007b); Downey, von Hippel, and Broh (2004); Cooper et al. (1996).

10. Supplemental educational services (SES) are tutoring or other academic support services offered outside the regular school day, at no charge to students or their families, by public or private providers that have been approved by the state. Districts are required to offer SES to low-income students in schools that have fallen short of adequate yearly progress (AYP) standards for a third time (after missing AYP for two consecutive years). Students and their parents are permitted to choose among state-approved SES providers, which come in all varieties, including national for-profit firms, local nonprofits, faith-based organizations, institutions of higher education, and local school districts (which are permitted to become approved providers unless they are themselves identified for improvement under No Child Left Behind [NCLB]).

11. Administration for Children & Families (n.d.). *State afterschool profiles: California*. Washington, DC: U.S. Department of Health and Human Services. Retrieved May 29, 2009, from http://nccic.org/afterschool/ca.html.

12. Smith (2000).

13. Carver and Iruka (2006).

Although it is generally assumed that OST programs can provide students with positive, academically enriching experiences, it is not necessarily known how to structure programs to effectively improve student academic outcomes. Although many studies lacking comparison groups suggest that OST programs can benefit students academically,[14] those with more rigorous evaluation designs raise questions about these findings. For example, findings from the national evaluation of the 21st Century Community Learning Centers (CCLC) program, which is the largest after-school program in the United States, show that, on average, students participating in the programs had no improvement in academic achievement.[15]

The evaluation found that 21st CCLC programs were not consistently focused on academics and often placed more emphasis on sports or extracurricular activities because they thought those activities were more popular with students and would encourage participation in the program.[16] Students in 21st CCLC programs may not have been spending enough time engaged in academic content to produce measurable gains in achievement. Simply adding time to students' days may not benefit them academically; that time may need to be carefully orchestrated to facilitate learning and retention of academic material. Additionally, the average amount of total instructional time received by students in a typical OST program may be too low to generate meaningful academic effects.[17]

The findings from the evaluation of Enhanced Academic Instruction in After-School Programs, sponsored by the Institute of Education Sciences (IES), provide some evidence for what works in OST instruction.[18] The elementary school programs delivered school-day math and reading curricula adapted to after-school settings.[19] Students, who received an average of 57 hours of enhanced math instruction (more than the 30–40 hours SES students might receive[20]), had modest but statistically significant improvements in math achievement after one year compared with students in a regular after-school program.[21] No differences were found between students who received enhanced reading instruction and those in a regular after-school program. This first year of findings provides some indication that instruction in OST can improve student achievement when delivered in a structured, focused format with adequate dosage.

14. Center for Applied Linguistics (1994); Fashola (1998); Ferreira (2004); Sheldon and Hopkins (2008).
15. U.S. Department of Education (2003).
16. James-Burdumy, Dynarski, and Deke (2007).
17. Kane (2004).
18. Black et al. (2008).
19. Ibid.
20. Ross et al. (2008).
21. Black et al. (2008).

Scope of the practice guide

The purpose of this practice guide is to provide recommendations for organizing and delivering school-based OST programs to improve the academic achievement of student participants. School-based programs include those that are administered by a school or school district, as well as programs that are contracted by the school or school district and provided by other organizations. The panel has limited the scope of this practice guide to programs that (1) serve elementary and middle school students, (2) are organized by or conducted in partnership with a school or school district, and (3) aim to improve academic outcomes.

The structure and objectives of OST programs vary. Some exist as a place where students can be safe and occupied for the time from school dismissal until parents are able to pick them up. Other programs are designed to provide social and cultural enrichment opportunities or to promote healthy outcomes such as grade promotion and reduction in risky behaviors. This guide targets programs whose primary goal is to provide academic instruction to improve participants' achievement.[22] The guide targets the following types of programs:

- after-school or weekend programs
- summer school
- SES

Teachers, principals, district administrators, and other staff who seek guidance for structuring these types of OST programs to improve academic achievement can benefit from this guide. State education agencies may find the recommendations useful for assessing the quality of prospective OST programs such as SES providers or 21st CCLC programs. Other types of programs, such as before-school or non–school-based programs also may benefit from the recommendations in this guide. However, these programs were not the focus of the panel's discussions.

The panel assumed that the basic structure of an academically focused OST program would include the following components:

- a place to meet—often this is the school, but it also may be a community center or other facility
- regular hours of operation
- transportation (if necessary)
- administrative and instructional staff
- instructional materials or curricula

Staffing needs will vary by program but typically include a program director who supervises the operation of the program (or program sites if there are multiple locations) and manages OST instructors. The OST instructors are the front-line staff members who interact with students. Additionally, either the OST program or a school may employ a coordinator who is responsible for maintaining the relationships among the school, the program site, and other partners (see recommendation 1). School districts that have contracted with multiple OST programs may employ a district coordinator to monitor all programs across schools.

The evidence base in this guide for the effectiveness of OST programs and services on student achievement is based on what is known about after-school, summer

22. In a meta-analysis of 73 after-school programs, Durlak and Weissberg (2007) found that "the presence of an academic component" was the largest predictor of a program producing significant academic improvements.

school, and SES programs targeting elementary and middle school students in low-income, high-needs communities. Although many of the recommendations may look similar to those for high school programs, the objectives of OST programs may differ in high school, and the action steps and roadblocks will be different because of the wider range of activities, transportation issues, and instructional needs of high school students compared with those of younger students. Similarly, although the recommendations may be applicable to other populations, the literature used in this guide largely looks at students in urban, low-income, and low-achieving schools. Table D1 in Appendix D includes details on the populations studied by the literature mentioned in this guide.

The recommendations in this guide can be used singly or in combination. The panel recommends that readers consider implementing all recommendations, but any one recommendation can be implemented independently. For example, recommendations 1 and 2 will be most useful to school administrators who want to address low student attendance and ensure that students who need academic help will benefit from the OST program. Recommendations 3 and 4 will be useful for teachers who are struggling with addressing the academic needs of their students. Recommendation 5 is intended for school, district, and program administrators who want to ensure that the out-of-school programming offered to students is of high quality and that students are benefiting from those services.

In writing the guide, the panel chose not to address the following four areas:

First, the guide does not address whether to provide services after school, before school, on weekends, or during the summer months. The panel does not believe that there is a consensus in the literature about how the timing of a program affects student outcomes. The panel assumes that administrators will make that decision based on their available resources and the needs and preferences of the communities they serve. They may decide that one or a combination of these types of programs will suit their objectives.

Second, the guide does not address specific instructional practices or teaching strategies that are unique to reading, math, or other content areas. The research base that would be required to support content-specific recommendations is beyond the scope of this guide. For reference, the What Works Clearinghouse (WWC) has published a number of practice guides and intervention reports devoted to content-specific areas such as adolescent literacy, beginning reading, and elementary and middle school math.[23]

Third, the guide does not provide details on the costs of organizing or operating OST programs or of implementing the recommendations of the panel. The panel recognizes that cost is a huge element in the decisions that programs make about the services they provide, but also that costs can vary considerably by factors such as the type of program, days of operation, and geographical area.[24] Some of the roadblocks found at the end of each recommendation provide suggestions for ways to minimize costs, but the panel directs readers to recent reports by Public/Private Ventures (P/PV), RAND, and others for more information on the costs of OST programs.[25]

Finally, the guide does not address behavioral management in the OST context. The panel acknowledges that in the OST arena, as in the school-day classroom, programs

23. Institute of Education Sciences. (n.d.). *What Works Clearinghouse: Practice Guides*. Washington, DC: U.S. Department of Education. Retrieved May 29, 2009, from http://ies.ed.gov/ncee/wwc/publications/practiceguides.

24. Grossman et al. (2009).

25. Grossman et al. (2009); Beckett (2008).

and practices can impact student behavior. In OST, this includes the sites participating in the national evaluation of 21st CCLC, which were found to have an adverse effect on student behavioral outcomes.[26] Although the panel recognizes that creating a safe and orderly environment is a necessary condition for students to learn, interventions that address behavioral management issues were judged to be out of the scope of this guide and recommendations that are targeted to academic improvement. The panel directs readers to other publications that may be helpful in this area, including the WWC practice guide, *Reducing Behavior Problems in the Elementary School Classroom*.[27]

Status of the research

Overall, the panel believes that the existing research on OST practices is not at a level to provide conclusive evidence of best practices. Studies of OST programs tend to examine combined effects of a variety of practices and procedures on student achievement, making it difficult to determine the specific practices contributing to achievement gains.[28] Likewise, the panel encountered varying impacts across OST programs with ostensibly similar practices. Many studied interventions are practiced on a small scale, necessitating a small sample size and often making it difficult to find an appropriate comparison group. Low levels of participation or attendance, even in large-scale programs, also make it difficult to interpret evaluation results. The panel believes that the OST field would benefit from additional, rigorous research on OST programs that serve a large number of students and have achieved high levels of participation. Improving the research base will provide educators and OST providers alike with more definitive information about effective practices.

In offering these recommendations, the panel reminds readers that the evidence base in support of these recommendations, when available, is based on experiences in OST programs. The relatively small amount of literature on academically focused programs limited the depth of information on effective instructional practices in the OST context. To account for this, the panel also incorporated relevant literature in the broader education field and used its expert judgment to identify practices that strengthened the OST learning environment.

Summary of the recommendations

This practice guide offers five recommendations to improve the ability of OST programs to benefit students academically (see Table 2). Recommendations 1 and 2 address how to design an OST program by considering its relationship with schools and the components that can maximize the appeal of the program. Recommendations 3 and 4 focus on the delivery of academic instruction, and how it can be used purposely to improve student engagement and performance. Recommendation 5 addresses evaluation of OST programs, which is essential for maintaining high standards of quality as well as continuous improvement of the program design and instruction.

Recommendations 1 and 2 (Design). OST programs should include design features that ultimately strengthen academic progress while fulfilling the needs of parents and students. Recommendation 1 emphasizes the importance for OST programs to connect with school and classroom activities to achieve a shared mission of improving academic performance. Further, the panel recognizes that sometimes students

26. James-Burdumy, Dynarski, and Deke (2008).

27. Epstein et al. (2008).

28. In these cases, the panel members exercised their expert judgment to identify practices likely to produce achievement gains for students.

most likely to benefit from a strong academic program may be especially unlikely to enroll in or attend OST programs regularly. Thus, the panel recommends that OST programs focus on recruiting and retaining targeted students so that they receive the dosage necessary to realize academic benefits (recommendation 2).

Recommendations 3 and 4 (Instruction). To maximize the educational benefits for students, OST programs should deliver academic instruction in a way that responds to each student's needs and engages them in learning. Recommendation 3 presents strategies for the structuring of instructional practices and program content to address the needs of students and effectively improve academic outcomes. The recommendation provides suggestions for organizing instructional time in the classroom and for facilitating individualized teaching by assessing student needs. Recommendation 4 encourages OST programs to capitalize on programming flexibility by offering activities that students may find especially engaging. The panel believes it is particularly important to engage students when they may be fatigued after a long day of school; on Saturdays; during the summer months; or when they are drawn to participate in other, nonacademic activities. To avoid the pitfalls of other programs that failed to demonstrate positive academic effects, the panel suggests that all activities have a specific learning objective.

Recommendation 5 (Evaluation). Finally, program improvement depends on the articulation of goals and expectations, effective management, and the performance and experience of staff. Recommendation 5 presents strategies for schools and districts to use to identify programs that are most likely to result in academic improvement and to monitor existing programs to ensure that the highest-quality services are being provided to students. The earlier recommendations in this guide should provide programs with a solid starting point from which to evaluate an OST program.

Table 2. Recommendations and corresponding levels of evidence

Recommendation	Level of evidence
Design	
1. Align the OST program academically with the school day.	**Low**
2. Maximize student participation and attendance.	**Low**
Instruction	
3. Adapt instruction to individual and small group needs.	**Moderate**
4. Provide engaging learning experiences.	**Low**
Evaluation	
5. Assess program performance and use the results to improve the quality of the program.	**Low**

Checklist for carrying out the recommendations

Recommendation 1. Align the OST program academically with the school day.

☐ Use OST program coordinators to develop relationships and maintain ongoing communication between schools and the OST program.

☐ Designate a school staff person to coordinate communication with OST programs and help them support school needs.

☐ Connect OST instruction to school instruction by identifying school-based goals and learning objectives.

☐ Coordinate with the school to identify staff for OST programs.

Recommendation 2. Maximize student participation and attendance.

☐ Design program features to meet the needs and preferences of students and parents.

☐ Promote awareness of the OST program within schools and to parents.

☐ Use attendance data to identify students facing difficulties in attending the program.

Recommendation 3. Adapt instruction to individual and small group needs.

☐ Use formal and informal assessment data to inform academic instruction.

☐ Use one-on-one tutoring if possible; otherwise, break students into small groups.

☐ Provide professional development and ongoing instructional support to all instructors.

Recommendation 4. Provide engaging learning experiences.

☐ Make learning relevant by incorporating practical examples and connecting instruction to student interests and experiences.

☐ Make learning active through opportunities for collaborative learning and hands-on academic activities.

☐ Build adult-student relationships among OST program participants.

Recommendation 5. Assess program performance and use the results to improve the quality of the program.

☐ Develop an evaluation plan.

☐ Collect program and student performance data.

☐ Analyze the data and use findings for program improvement.

☐ Conduct a summative evaluation.

Recommendation 1. Align the OST program academically with the school day

The panel believes that academic alignment with the school day is necessary for OST programs to improve academic performance. OST programs and schools have the shared mission of helping students achieve success, and collaboration between the two can be mutually beneficial. Although alignment requires additional effort from staff, teachers and principals in schools with existing OST programs have voiced support for this sort of collaboration.[29]

An OST program coordinator can ensure alignment through regular communication with school staff, and schools can help by designating a school-based coordinator to work with the OST coordinator. This sort of cooperation helps OST programs evaluate their students' needs and provide the most effective instruction and services. Both the program and the school-based coordinators should work to align the instructional activities of the OST program with state and local content standards, the school curriculum, and district- and/or school-based learning initiatives.[30]

Level of evidence: Low

The level of evidence for this recommendation is *low*. There is no direct evidence that practices outlined in this recommendation contribute to improved academic outcomes. Although it was common for programs to include some components of the panel's recommendations, none tested the effectiveness of this recommendation individually, only in combination with the other components of OST programs.

In the panel's opinion, collaboration can improve academic outcomes and in the studies reviewed for this guide, two independent evaluators recommended that collaboration between schools and OST programs be strengthened if possible.[31] However, we acknowledge that more research is required to demonstrate the effects of stronger alignment.

Brief summary of evidence to support the recommendation

Fifteen OST programs endeavored to collaborate with school-based staff or initiatives,[32] but, in general, these efforts were not core components of the programs. Three programs also expressed difficulty or reluctance to coordinate more fully.[33] Of the 11 programs with studies

29. Goldschmidt, Huang, and Chinen (2007); Bissell et al. (2002).

30. Borman and Dowling (2006); Langberg et al. (2006); Roderick, Jacob, and Bryk (2004); Borman (1997).

31. Schacter and Jo (2005) and Center for Applied Linguistics (1994) suggested the use of more collaboration when appropriate.

32. Challenging Horizons Program (CHP)—Langberg et al. (2006); Early Risers—August et al. (2001); Enhanced Academic Instruction—Black et al. (2008); Teach Baltimore—Borman and Dowling (2006); Chicago Summer Bridge—Jacob and Lefgren (2004); Los Angeles's Better Educated Students for Tomorrow (L.A.'s BEST)—Goldschmidt, Huang, and Chinen (2007); Youth Services—Child Care, Academic Assistance, Recreation, and Enrichment (YS-CARE)—Bissell et al. (2002); 21st CCLC—U.S. Department of Education (2003); Leap Frog—McKinney (1995); Nurturing Development Partnerships (NDP)—Udell (2003); SES—McKay et al. (2008); SES—Ross et al. (2008); SES—Muñoz, Potter, and Ross (2008); Title I supplementary education—Borman (1997); The After-School Corporation (TASC)—Reisner et al. (2004); Project Adelante—Center for Applied Linguistics (1994); After-school tutoring—Leslie (1998).

33. In James-Burdumy et al. (2005), the authors noted that 21st CCLC programs struggled to effectively coordinate homework help with the school; and in U.S. Department of Education (2003), 21st

that met WWC standards with or without reservations,[34] three programs documented practices that closely corresponded to the panel's recommendations.[35] In two of these, coordination between schoolteachers and OST instructors was frequent and structured.[36] Content and skills taught during OST were intentionally designed to support students during their school-day instruction. One program showed positive academic effects,[37] and the other did not.[38] The purpose of the third program, which was a summer school, was to help students achieve proficiency on state examinations they had not mastered during the school year. The curriculum was designed by the district with the express purpose of helping students meet state standards and was closely linked to that goal, but by nature of its being a summer school program, coordination with individual teachers was limited. The evaluation of the program found significant and persistent effects on both math and reading for 3rd graders but not for 6th graders.[39]

The remaining eight programs included some components similar to this recommendation, but studies indicated that the degree of coordination was lower or not enough information was provided to determine the level of alignment between programs.[40] Of these, one showed positive effects,[41] two showed mixed effects,[42] and five programs showed no detectable academic effects.[43] Although more of these programs failed to demonstrate effectiveness, Table D2 shows that there were seven effective programs that did not attempt coordination with schools. Given the absence of a clear pattern of effectiveness based on the level of coordination with schools and the small sample of programs with high levels of coordination, the panel decided that the level of evidence was *low*.

CCLC programs were found to be supportive but not "integrated" (p. 39) with the school. In Project Adelante (Center for Applied Linguistics 1994), program directors recommended closer coordination with school-day staff to collect data and share information on student progress but were concerned about the appropriateness of the school-day curriculum for the students that their program served. Similarly, Morris, Shaw, and Perney (1990) expressed reluctance to align their after-school tutoring program, Howard Street Tutoring, to the school curriculum given that their students' classroom instruction was often beyond the students' current reading levels.

34. CHP—Langberg et al. (2006); Early Risers—August et al. (2001); Enhanced Academic Instruction—Black et al. (2008); Teach Baltimore—Borman and Dowling (2006); Chicago Summer Bridge—Jacob and Lefgren (2004); L.A.'s BEST—Goldschmidt, Huang, and Chinen (2007); YS-CARE—Bissell et al. (2002); 21st CCLC—U.S. Department of Education (2003); Leap Frog— McKinney (1995); NDP—Udell (2003); SES—McKay et al. (2008); SES—Ross et al. (2008); SES—Muñoz, Potter, and Ross (2008).

35. CHP—Langberg et al. (2006); Chicago Summer Bridge—Jacob and Lefgren (2004); Leap Frog—McKinney (1995).

36. CHP—Langberg et al. (2006); Leap Frog—McKinney (1995).

37. CHP—Langberg et al. (2006).

38. Leap Frog—McKinney (1995).

39. Chicago Summer Bridge—Jacob and Lefgren (2004).

40. Early Risers—August et al. (2001); Enhanced Academic Instruction—Black et al. (2008); Teach Baltimore—Borman and Dowling (2006); L.A.'s BEST—Goldschmidt, Huang, and Chinen (2007); YS-CARE—Bissell et al. (2002); 21st CCLC—U.S. Department of Education (2003); NDP—Udell (2003); SES—McKay et al. (2008); SES—Ross et al. (2008); SES—Muñoz, Potter, and Ross (2008).

41. Early Risers—August et al. (2001).

42. Enhanced Academic Instruction—Black et al. (2008); Teach Baltimore—Borman and Dowling (2006).

43. L.A.'s BEST—Goldschmidt, Huang, and Chinen (2007); YS-CARE—Bissell et al. (2002); 21st CCLC—U.S. Department of Education (2003); NDP—Udell (2003); SES—Ross et al. (2008); SES—McKay et al. (2008); SES—Muñoz, Potter, and Ross (2008).

How to carry out this recommendation

1. Use OST program coordinators to develop relationships and maintain ongoing communication between schools and the OST program.

An OST program coordinator can play a critical role in ensuring that instructional components of an OST program are aligned with the school day. Coordinators should work directly with teachers and administrators from the school to obtain information that can be used to guide instruction in the OST program. This can be accomplished through regular communication with key school staff, and also through participation in school meetings and committees. For example, coordinators can attend staff meetings, participate in common planning periods, serve on school leadership teams, and participate in parent-teacher organizations. OST coordinators also can promote the OST program to staff and families by posting information about the program on bulletin boards or holding OST events during the school day to expose other students to the OST program.

When possible, the OST coordinator should be housed within the school, spending time during daily school hours to be visible to both students and teachers. The OST coordinator can use these types of opportunities to maintain an open relationship with teachers, principals, and counselors, advocating for and gathering data about OST students as necessary.[44]

The OST coordinator can take key steps to facilitate regular communication between OST instructors and classroom teachers that will reinforce and complement the school curriculum.[45] Regular communication can help identify the needs and strengths of individual students and those strategies that are most effective in raising achievement. Some examples of steps follow:

- The OST coordinator can develop a logbook that students carry back and forth daily to share information about OST activities with classroom teachers.[46] The logbook can contain information from classroom teachers about homework assignments, concepts the student is struggling with during the school day, or the instructional strategies that are most effective with the student.[47] The coordinator should work closely with school staff in developing this logbook. For a sample logbook, see Exhibit 1.[48]

- The OST coordinator can arrange for OST instructors to periodically attend common planning periods with classroom teachers to align programming or collaborate with effective teachers to identify best practices and materials for meeting curriculum goals and raising student achievement.[49]

- The OST coordinator can collaborate with school-based staff to identify relevant professional development that OST instructors can attend with schoolteachers to align instructional strategies and to provide funding when possible.

44. Center for Applied Linguistics (1994).

45. Leslie (1998); U.S. Department of Education (2003).

46. Morris, Shaw, and Perney (1990).

47. Langberg et al. (2006).

48. For other examples of logbooks, see SEDL National Center for Quality Afterschool (n.d.) and Region VII After School Programs (n.d.).

49. Bott (2006) described the use of this strategy in the Gardner Extended Services School; U.S. Department of Education (2003).

Exhibit 1. Sample logbook

Information from the Classroom Teacher				
Today's Date				
Student attended class?	☐ Yes ☐ No ☐ Tardy			
By subject:	**Subject 1[a]**	**Subject 2**	**Subject 3**	**Subject 4**
Topics covered in class today				
Today's homework assignment				
Areas in which the student needs additional help				
Instructional strategies that were useful				
Behavior or discipline issues				
Other comments				

Information from the OST Instructor				
Today's Date				
Student attended OST program?	☐ Yes ☐ No ☐ Tardy			
By subject:	**Subject 1**	**Subject 2**	**Subject 3**	**Subject 4**
Percentage of homework completed during OST				
Homework items that were challenging for the student				
Topics covered during OST instruction				
Instructional strategies or activities that were useful				
Behavior or discipline issues				
Other comments				

a. This form can be used for single subject classrooms or elementary classrooms.

2. Designate a school staff person to coordinate communication with OST programs and help them support school needs.

Schools can designate a staff member (the school-based coordinator) to work with the OST program coordinator (or with OST coordinators from multiple OST programs, if relevant). The panel believes that when OST programs are well aligned to school-day goals and instruction, they can support the school in raising student achievement. A school-based coordinator can serve as a first point of contact in the school for OST programs and can help ensure that OST instruction is well aligned with school goals. This person will play an important role in program-school relations, but it is not imperative that the position is full time, and an existing teacher or counselor may be suited to this role. Key functions of the school-based staff designee include

- Developing a set of standard operating procedures for distributing student data to OST program staff. Relevant data can include results from district- or state-wide standardized testing, student progress reports from teachers, or even brief informal comments from teachers on student strengths and weaknesses.
- Preparing relevant information on school operations, academic standards, improvement plans, and curricula.
- Observing and communicating with OST staff to identify opportunities for greater coordination with the school day.

It also can be beneficial for school districts to designate a key staff person to work with OST coordinators. The district designee can provide OST coordinators with information on standards and curricula. The district designee also can play a key role in coordinating and supervising the activities of multiple SES and other OST providers.

3. Connect OST instruction to school instruction by identifying school-based goals and learning objectives.

Information gathered from the school and the district can be used to prioritize efforts to raise academic achievement and support student learning during the school day. OST programs should align activities, instruction, and any formal curriculum with the state and local standards, as well as the content and curriculum of the school day.[50] State and local curriculum standards are often available online, but school and district officials also should direct OST staff to relevant resources such as school improvement plans or other specific school- or district-based objectives. The OST program need not repeat classroom instruction, but it can use different methods to support and reinforce what students learn in school.

OST programs can help students develop skills that support classroom instruction, such as learning how to plan, take notes, develop an outline, or study for an upcoming test. For example, OST providers could explicitly teach a skill and require students to practice that skill using an assignment from the school day. They should follow up by checking assignments and conferencing with the classroom teacher. When promoting the use of skills from OST during the school day, instructors should be careful to coordinate with the classroom teacher first to ensure that the relevant skill will align with classroom instruction and will not disrupt the teacher's routine. This can be useful for helping students develop note-taking, planning, and studying skills that will help them achieve success with the school-day curriculum.[51]

50. Borman and Dowling (2006); Langberg et al. (2006); Roderick, Jacob, and Bryk (2004); Borman (1997); Udell (2003).

51. Langberg et al. (2006).

Field trips or cultural activities that are part of the OST program should be explicitly linked to school content and state standards. The panel believes that these activities need to connect to something the students are learning in school to help them see how what they learn in school relates to their real-life experiences. The result can maximize the gains from both the OST program and the school day and make academic content more relevant to students' lives (see recommendation 4 for information on connecting engaging instruction to academic content).

4. Coordinate with the school to identify staff for OST programs.

OST programs have several roles for which effective classroom teachers are well suited. The panel recommends that programs evaluate how classroom teachers can be useful to their programs and hire them when appropriate to meet program goals. For example, teachers can serve as OST coordinators, particularly for summer programs in which teachers might not face conflicting demands on their time from their regular teaching schedules.[52] When funding is available to hire effective teachers from the school to serve as OST instructors, these teachers can use their experience and knowledge of instructional methods to maximize academic gains for participating students.[53] Finally, teachers can use their experience to advise and mentor less-experienced OST instructors or volunteers, especially when budgets are tight or sufficient numbers of experienced teachers are not available.[54]

Although little is known about the methods or characteristics that define effective teachers, researchers have discovered that some teachers are much better than others at helping students achieve significant achievement gains during the school day.[55] For direct instruction or supervisory roles, the panel recommends hiring classroom teachers who demonstrate success during the school day, and the school can support these efforts. To identify effective teachers to employ as the OST coordinator or as an OST instructor, OST programs can seek out award-winning teachers or work with administrators to identify effective teachers.[56]

Potential roadblocks and solutions

Roadblock 1.1. *The principal does not have time to coordinate with OST staff.*

Suggested Approach. OST programs support the school by providing additional academic assistance to students. To maximize their effectiveness, the panel suggests that the principal designate someone at the school to be responsible for communications regarding OST programming. The OST program can help by clearly communicating the benefits of collaboration to the principal.

Roadblock 1.2. *The OST program does not have enough money to hire a program*

52. In 21st CCLC programs, about 67 percent of coordinators had experience as classroom teachers, and 34 percent were currently school-day teachers (U.S. Department of Education 2003, p. 36).

53. In Chicago Summer Bridge (Jacob and Lefgren 2004), 21st CCLC (U.S. Department of Education 2003), and Enhanced Academic Instruction (Black et al. 2008), for example, schoolteachers frequently served as OST instructors.

54. In KindergARTen (Borman, Goertz, and Dowling 2008), Teach Baltimore (Borman and Dowling 2006), NDP (Udell 2003), and Howard Street Tutoring (Morris, Shaw, and Perney 1990), schoolteachers served as advisors to less-experienced instructors or volunteers.

55. See, for example, Hanushek (1992).

56. Roderick, Jacob, and Bryk (2004). Researchers have demonstrated that principals are good at identifying their best and worst teachers, but they are not as good at distinguishing among those who fall in between (Jacob and Lefgren 2008).

coordinator, or the school cannot afford to hire a school-based coordinator.

Suggested Approach. Depending on size and scope of the program, a full-time program coordinator might not be necessary. The panel believes that programs can be successful with a part-time coordinator, particularly when the program is small or works with only a few students. What is important is that both the program and the school designate a person who is responsible for managing the coordination between program and school staff and that this person's role in maintaining communication is clearly established. Another possibility is for a volunteer to take on the coordinator role.

Roadblock 1.3. *It is hard to get high-quality teachers to work after school because of their commitments and responsibilities during the school day.*

Suggested Approach. OST programs can consider devising flexible staff schedules that allow teachers to work for shorter periods (e.g., tutoring small groups of students for one hour). Programs also can consider involving busy but qualified teachers in important support roles, such as coaching less-experienced instructors or providing instructional training.

Roadblock 1.4. *The OST instructor has some concerns about aligning instruction with the school day, or the classroom teacher has some concerns about the OST instruction.*

Suggested Approach. Concerns about alignment may signal a need for greater communication between the two programs. Use the OST coordinator and the school-based coordinator to communicate concerns and ensure that students receive the instruction that will benefit them the most. This may mean sharing information about a particular student's progress, for example.

Roadblock 1.5. *Privacy concerns prohibit the transfer of data from school to OST program.*

Suggested Approach. OST programs can establish a secure system for transferring data that meets the security concerns of the school and can ensure that only a limited number of staff members have access to the data. Programs should get formal written consent from parents and students for their data to be released. OST staff also can schedule meetings with teachers and staff to gather informal information on student performance in school.

Recommendation 2. Maximize student participation and attendance

To attract and retain participants, OST programs should determine which factors prevent students from participating in the program and work with schools and parents to ensure that the program is addressing those factors. Parents are critical to this process because they are co-decisionmakers about students' participation in OST programs, and children generally value their parents' judgment about which programs may be beneficial to them.[57] Important factors include location, transportation, timing, length, program offerings, and frequency of services. Researchers have found that student participation is affected by issues of access and convenience, as well as by the adequacy and attractiveness of the services and features provided in the program.[58]

The challenge for OST program organizers is to design program features to minimize the barriers to participation, especially for the students most in need of program services and most likely to benefit from them. OST programs also can increase awareness and acceptance by promoting the program among school staff and families. Greater awareness is likely to facilitate communication with schools and parents regarding students who struggle to attend and could help in actively persuading students to participate in program activities.

57. Duffett et al. (2004).

58. Ibid.

Level of evidence: Low

The panel judged the level of evidence supporting this recommendation to be *low*, because there is no conclusive evidence that following the action steps in this recommendation will lead to higher attendance or increased academic achievement. Given the voluntary nature of most OST programs and other barriers discussed in this recommendation, regular attendance appears to be a difficult goal for many programs to reach. Some programs have devoted considerable resources and seem to have made efforts to implement the action steps described in this recommendation and still have trouble getting students to attend regularly (see Table D2). However, given that attendance is a precursor to an OST program's promoting student learning, the panel believes it is particularly important for programs to enhance their efforts to get students in the door.

Brief summary of evidence to support the recommendation

The importance of emphasizing participation has been pointed out by many experts in OST.[59] Although it seems logical that students need to attend to receive the benefits of a program, there is no rigorous evidence demonstrating that the steps recommended here will lead to increased participation, and limited evidence that academic achievement is increased through more exposure to OST programs. A meta-analysis of 53 OST programs by Lauer et al. (2004) found larger effect sizes in both math and reading for programs that consisted of at least 45 hours of programming.[60] The panel believes that if a program is aligned academically with the

59. Cooper et al. (2000); Granger and Kane (2004); Lauver, Little, and Weiss (2004).

60. The meta-analysis also found that, on average, programs with very high durations (more than 100 hours for math and 210 hours for reading) did not have effects significantly different from zero.

school day (recommendation 1), adapts instruction to individuals and groups (recommendation 3), and provides engaging learning experiences (recommendation 4), greater exposure to that program will yield higher academic achievement.

Since a student's *actual* program attendance, as a percentage of hours of programming offered, may be correlated with unobservable characteristics such as motivation or family circumstances, it is not advisable to draw causal conclusions from most studies on the relationship between attendance and outcomes. Four evaluations met WWC standards with or without reservations for their impact studies and also looked at the possible relation between level of program attendance and academic achievement.[61] Only one found a positive correlation between higher attendance and greater program effects.[62]

The other evidence for this recommendation is less direct. Fourteen programs used practices similar to the action steps recommended by the panel (such as using teachers to recruit students, locating within schools, offering snacks, and including enrichment activities) and also had evaluations that met WWC standards with or without reservations.[63] Of the 14 programs, 6 reported some information on attendance rates.[64] Even when programs report attendance, the panel cannot isolate which, if any, components of the program affected attendance, forcing the panel to use its judgment regarding which practices contributed to increased attendance and improved academic outcomes. In terms of overall academic effects, 7 of the 14 showed positive effects,[65] 2 showed mixed effects,[66] and 5 others showed no effects.[67] Despite the lack of consistent evidence linking the panel's suggestions to increased academic achievement, the panel believes these recommendations, faithfully implemented and taking into consideration the unique constraints and student populations of each program, can increase student attendance and, therefore, contribute to achievement gains.

Only one study provided direct evidence on increasing attendance. Black et al. (2008) randomly assigned students to either a less-structured, business-as-usual after-school program or an enhanced math or reading program that included monitoring and incentive systems to increase attendance. Students in the enhanced program attended significantly more days than did control students.

61. Teach Baltimore—Borman and Dowling (2006); Early Risers—August et al. (2001); L.A.'s BEST—Goldschmidt, Huang, and Chinen (2007); 21st CCLC—U.S. Department of Education (2003).

62. Teach Baltimore—Borman and Dowling (2006).

63. CHP—Langberg et al. (2006); Fast ForWord—Slattery (2003); Howard Street Tutoring—Morris, Shaw, and Perney (1990); Start Making a Reader Today (SMART)—Baker, Gersten, and Keating (2000); Summer Reading Day Camp—Schacter and Jo (2005); KindergARTen—Borman, Goetz, and Dowling (2008); Early Risers—August et al. (2001); Enhanced Academic Instruction—Black et al. (2008); Teach Baltimore—Borman and Dowling (2006); L.A.'s BEST—Goldschmidt, Huang, and Chinen (2007); YS-CARE—Bissell et al. (2002); 21st CCLC—U.S. Department of Education (2003); Leap Frog—McKinney (1995); NDP—Udell (2003).

64. Early Risers—August et al. (2001); KindergARTen—Borman, Goetz, and Dowling (2008); Enhanced Academic Instruction—Black et al. (2008); Teach Baltimore—Borman and Dowling (2006); L.A.'s BEST—Goldschmidt, Huang, and Chinen (2007); 21st CCLC—U.S. Department of Education (2003).

65. CHP—Langberg et al. (2006); Fast ForWord—Slattery (2003); Howard Street Tutoring—Morris, Shaw, and Perney (1990); SMART—Baker, Gersten, and Keating (2000); Summer Reading Day Camp—Schacter and Jo (2005); KindergARTen—Borman, Goetz, and Dowling (2008); Early Risers—August et al. (2001).

66. Teach Baltimore—Borman and Dowling (2006); Enhanced Academic Instruction—Black et al. (2008).

67. L.A.'s BEST—Goldschmidt, Huang, and Chinen (2007); YS-CARE—Bissell et al. (2002); 21st CCLC—U.S. Department of Education (2003); Leap Frog—McKinney (1995); NDP—Udell (2003).

How to carry out this recommendation

1. Design program features to meet the needs and preferences of students and parents.

The panel recommends that the OST program gather information about parent preferences with a survey or seek the advice of school staff in identifying the needs of parents and students. The survey could be distributed to parents through the school and could ask a short series of questions, such as

- Do you prefer an after-school/summer program that is located at your child's school or one that is located at a community center?
- Would you be able to transport your child from school to an after-school program?
- What times would you like the program to start and end?
- Which academic subjects does your child need additional support in?
- How many days per week would you send your child to an after-school/summer program?

The program could consider a similar short survey to gauge the preferences of students, especially when serving the higher grade levels in which students are more likely to choose a program on their own.

The responses should guide how the program organizes and provides its services. This includes working with schools and districts to ensure that design features make the program accessible. For example, the OST program should consider a location that is well situated and easy to get to, whether it is a school, community center, or place of worship.[68] Parents often prefer the use of school facilities for services, which eliminates the need to move from school to another location after school.[69] If the program is not located at the school, or if the program is serving students from multiple schools, schools and districts should ensure that transportation to and from the program is readily available and affordable (or provided at no cost), and that adult supervision is provided while transporting students.[70] The panel believes that OST programs also should try to operate during hours that are convenient for families, particularly for working parents.

Program features should reflect the content that students and parents want, both in academic and nonacademic areas. Parents are likely to be looking for academic or homework help that reflects the areas in which their children need additional help.[71] Since academically oriented OST programs may be competing with other recreational activities in the same time period,[72] programs should offer enrichment and recreational activities in addition to academic instruction. These activities can include theater, music, arts and crafts, sports, board games, fitness, and martial arts, but they should reflect student interests.[73] To satisfy students' nutritional needs, after-school programs should incorporate a snack time into the schedule, whereas summer programs

68. August et al. (2001); Langberg et al. (2006); Chaplin and Capizzano (2006); Reisner et al. (2004).

69. U.S. Department of Education (2009).

70. August et al. (2001); Langberg et al. (2006); Morris, Shaw, and Perney (1990); Center for Applied Linguistics (1994).

71. Duffett et al. (2004).

72. Carver and Iruka (2006); Brown (2002); Cooper et al. (2000).

73. Bissell et al. (2002); Schacter and Jo (2005); August et al. (2001); Langberg et al. (2006); Borman and Dowling (2006); Goldschmidt, Huang, and Chinen (2007).

should consider including lunch or another appropriate meal.[74]

2. Promote awareness of the OST program within schools and to parents.

It is the opinion of the panel that OST programs, whether organized by schools, districts, or private providers, should consistently inform parents, teachers, and other school staff about programs and their benefits. Programs can use various methods of promotion, including websites, flyers distributed at parent meetings, notices on school bulletin boards or in school newsletters, and word of mouth. Information should include program location, hours of operation, and contact numbers so that parents can raise questions or concerns, and the information should be available in multiple languages when appropriate.

Schools can join OST providers in promoting participation in the programs. For example, teachers and administrators can identify and recruit students who might benefit from OST program services. Teachers can provide referrals or informational materials during parent-teacher meetings or give the program a list of students in need of academic assistance.[75] Teachers or school administrators also can remind students at the end of the school day about attending the after-school program and, if needed, escort students directly to the program.

3. Use attendance data to identify students facing difficulties in attending the program.

Program coordinators should systematically collect OST program attendance data and use the data to identify students with recurring absences or low attendance. OST staff can follow up with school staff to see if the problem extends to the school day. OST staff also could coordinate with school staff to contact parents to determine the reason for the absences.[76] Programs can consider using reward incentives, positive reinforcement, or special privileges to encourage regular attendance. For example, incentives can be in the form of monthly prizes or a point system that rewards students with points for good attendance or behavior that can be redeemed for special benefits such as field trips, school supplies, small prizes, or books.[77]

Potential roadblocks and solutions

Roadblock 2.1. *As students get older, additional options for after-school or summer recreational activities become available and increase the competition for students' after-school time.*[78]

Suggested Approach. An OST coordinator should be aware of other extracurricular activities when making scheduling or timing decisions so that it is easier for students to participate in both academic and recreational programs and, thereby, minimize competition. OST programs also can make participation in sports practice or other activities a privilege contingent on attendance in the academic portion of the OST program.[79]

Roadblock 2.2. *Students may have unavoidable circumstances that prevent them from attending OST programs, such as taking care of a sibling after school.*

74. Bissell et al. (2002); Schacter and Jo (2005); Morris, Shaw, and Perney (1990); Borman and Dowling (2006).

75. Langberg et al. (2006); Goldschmidt, Huang, and Chinen (2007); Baker, Gersten, and Keating (2000); McKinney (1995).

76. August et al. (2001); Black et al. (2008); Center for Applied Linguistics (1994).

77. Black et al. (2008); Udell (2003); U.S. Department of Education (2005); Langberg et al. (2006); Brown (2002).

78. Studies have found a drop-off in student participation after 3rd grade (Grossman et al. 2002) and also between elementary and middle school (U.S. Department of Education 2003; Grossman et al. 2002; Reisner et al. 2002).

79. U.S. Department of Education (2003).

Suggested Approach. If a large portion of an OST program's target group is facing these types of barriers, the program should consider devising options for students who cannot be onsite. Programs might consider providing tutoring for these students in the home or implementing a system that can provide the instruction in an online or electronic format.

Roadblock 2.3. *The number of slots in OST programs is limited.*

Suggested Approach. If the demand for OST programming is greater than the capacity of the program, organizers should consider ways to expand their capacity or partner with other programs that have available space. Organizers may need to seek additional funding sources, such as foundations or other federal grant programs, for which they might consider hiring an external evaluator to demonstrate the value of the program model.

Roadblock 2.4. *Communicating with families involved in the program may be difficult.*

Suggested Approach. Schools and OST providers should use multiple methods to communicate with parents. Some parents may move or change phone numbers frequently, which can make phone and mail communication difficult. Work with the school to provide information through school staff or teachers via flyers sent home with students. Recruitment efforts should extend beyond the school site to locations that families frequent. These may include grocery stores, laundromats, and community and faith-based centers. Schools should consider the common languages spoken in the area and provide translated materials or hire bilingual staff.

Recommendation 3. Adapt instruction to individual and small group needs

OST is an opportunity to supplement learning from the school day and to provide targeted assistance to students whose needs extend beyond what they can receive in the classroom. Since OST programs are shorter than the school day, instruction must be focused and targeted. The panel believes that closely aligning the content and pacing of instruction with student needs will result in better student performance.[80] Determining the right level of difficulty and pace and the most appropriate skills to teach is critical to effectively individualizing instruction, but challenging in practice. To provide targeted help to a student, instructors need to assess and document students' academic progress. Based on this assessment, students should be provided with instruction that accommodates their level of development and rate of learning.[81] The same workbook or activity could be frustrating for some students and not challenging enough to be educational for others. If instructors are unfamiliar with ways to incorporate assessment or individualization into instructional time, they should be provided with the tools and support that will maximize their effectiveness.

Level of evidence: Moderate

The panel judged the level of evidence supporting this recommendation to be *moderate*. Learning environments that are adaptive to individual and small group needs are widely believed to be effective in fostering achievement.[82] Within the context of OST, the literature is not definitive, and, in general, positive effects cannot be directly attributed to the use of the strategies outlined in this recommendation. However, looking more closely at the actual implementation of practices related to this recommendation, there is a pattern of more positive academic effects associated with programs that more closely correspond to this recommendation. Therefore, the panel believes that OST programs can be more successful if they attempt to understand the academic needs of the students they serve and adapt their programs to those needs.

Brief summary of evidence to support the recommendation

Of the 15 programs related to this recommendation with evaluations that met WWC standards with or without reservations,[83] 5 were judged to be in close correspondence with more than one aspect of this recommendation.[84] Four of these were found to have positive effects on academic

80. Slavin (2006); Bloom (1984).

81. Ibid.

82. See Slavin (2006) for a review of research on individualized instruction in general and Lauer et al. (2004) for reviews of OST programs in particular.

83. KindergARTen—Borman, Goetz, and Dowling (2008); Early Risers—August et al. (2001); Summer Reading Day Camp—Schacter and Jo (2005); Experience Corps—Meier and Invernizzi (2001); SMART—Baker, Gersten, and Keating (2000); Howard Street Tutoring—Morris, Shaw, and Perney (1990); Fast ForWord—Slattery (2003); CHP—Langberg et al. (2006); Teach Baltimore—Borman and Dowling (2006); Enhanced Academic Instruction—Black et al. (2008); Chicago Summer Bridge—Jacob and Lefgren (2004); Leap Frog—McKinney (1995); NDP—Udell (2003); 21st CCLC—U.S. Department of Education (2003); 21st CCLC—Dynarski et al. (2004); 21st CCLC—James-Burdumy et al. (2005); SES—McKay et al. (2008); SES—Ross et al. (2008); SES—Muñoz, Potter, and Ross (2008).

84. Early Risers—August et al. (2001); Howard Street Tutoring—Morris, Shaw, and Perney (1990); Fast ForWord—Slattery (2003); CHP—Langberg et al. (2006); Enhanced Academic Instruction—Black et al. (2008).

achievement,[85] and one had mixed but potentially encouraging effects.[86] Of the remaining 10 programs,[87] 6 still showed positive or mixed effects on academics.[88]

Of the four programs with lower levels of relevance and without detectable effects on academic achievement, two deserve special mention because they are the two major sources of federal funding for academically focused OST programs: 21st CCLC and SES, which are mandated as part of NCLB.[89] The national study of 21st CCLC programs found no positive academic effects for either elementary or middle school students.[90] However, implementation varied widely: although some programs reported tutoring in small groups with fewer than 10 students, most programs did not provide direct or adaptive instruction that was geared to the individual needs of all their students. Although SES is a newer program relative to 21st CCLC and less often studied, it appears to be implemented typically as one-on-one or small group tutoring (again implementation varies widely), and the results from the states that have attempted to evaluate the effects of SES, as mandated by law, do not show significant impacts on state assessments.[91]

In summary, the evidence demonstrates positive effects associated with a total of eight programs that adapted instruction to individual and small groups to some degree[92] and mixed effects in three other programs;[93] however, because adapting instruction always was a component of a multicomponent intervention and because adapting instruction did not consistently demonstrate significant positive effects across every study reviewed,[94] the panel acknowledges that the level of evidence is *moderate*.

How to carry out this recommendation

1. Use formal and informal assessment data to inform academic instruction.

OST programs should utilize the results of assessments administered to students during the school day—combined with input

85. Howard Street Tutoring—Morris, Shaw, and Perney (1990); Early Risers—August et al. (2001); Fast ForWord—Slattery (2003); CHP—Langberg et al. (2006).

86. Enhanced Academic Instruction—Black et al. (2008).

87. KindergARTen—Borman, Goetz, and Dowling (2008); Summer Reading Day Camp—Schacter and Jo (2005); Experience Corps—Meier and Invernizzi (2001); SMART—Baker, Gersten, and Keating (2000); Teach Baltimore—Borman and Dowling (2006); Chicago Summer Bridge—Jacob and Lefgren (2004); Leap Frog—McKinney (1995); NDP—Udell (2003); 21st CCLC—U.S. Department of Education (2003); 21st CCLC—Dynarski et al. (2004); 21st CCLC—James-Burdumy et al. (2005); SES—McKay et al. (2008); SES—Ross et al. (2008); SES—Muñoz, Potter, and Ross (2008).

88. KindergARTen—Borman, Goetz, and Dowling (2008); Summer Reading Day Camp—Schacter and Jo (2005); Experience Corps—Meier and Invernizzi (2001); SMART—Baker, Gersten, and Keating (2000); Teach Baltimore—Borman and Dowling (2006); Chicago Summer Bridge—Jacob and Lefgren (2004).

89. Zimmer et al. (2007).

90. U.S. Department of Education (2003); Dynarski et al. (2004); James-Burdumy, Dynarski, and Deke (2007).

91. Tennessee—Ross et al. (2008); Kentucky—Muñoz, Potter, and Ross (2008); Virginia—McKay et al. (2008).

92. KindergARTen—Borman, Goetz, and Dowling (2008); Early Risers—August (2001); Summer Reading Day Camps—Schacter and Jo (2005); Experience Corps—Meier and Invernizzi (2001); SMART—Baker, Gersten, and Keating (2000); Howard Street Tutoring—Morris, Shaw, and Perney (1990); Fast ForWord—Slattery (2003); CHP—Langberg et al. (2006).

93. Enhanced Academic Instruction—Black et al. (2008); Teach Baltimore—Borman and Dowling (2006); Chicago Summer Bridge—Jacob and Lefgren (2004).

94. Leap Frog—McKinney (1995); NDP—Udell (2003); 21st CCLC—U.S. Department of Education (2003); 21st CCLC—Dynarski et al. (2004); 21st CCLC—James-Burdumy, Dynarski, and Deke (2007); SES—Ross et al. (2008); SES—Muñoz, Potter, and Ross (2008).

from classroom teachers—to individualize instruction (see recommendation 1 for how to establish relationships with school staff). General assessment can measure a student's content knowledge, appropriate difficulty level, mastery of a topic, or skills that require emphasis during instruction. The information gathered from assessments should be used to adapt the content, pace, and approach in instructing the student, whether in a one-on-one setting or in small groups.[95]

If additional information about student progress is needed, OST instructors should incorporate formal and informal assessments into tutoring and homework assistance time.[96] The types of tools instructors can use to assess students' abilities and needs vary widely and should be determined based on the OST program's goals, the students involved, or other unique experiences. For example:

- When students enter a program for the first time, a test can be administered to measure their baseline abilities.[97]

- During a lesson, instructors can use basic techniques such as effective questioning[98] and observation to gauge a student's comfort with the material. For example, reading instructors can use a running record to evaluate reading behavior and keep track of mistakes that a student makes while reading.[99] The record can be used to identify trouble spots and monitor student progress over time.

- Pre- and post-lesson exercises can provide useful information on progress and can point the instructor to the areas in which additional support is required.[100]

These are just some examples of common assessment techniques; instructors should choose the tools they are comfortable with and those that gather the information they can use to adapt instruction in the most efficient way.

2. Use one-on-one tutoring if possible; otherwise, break students into small groups.

Ideally, OST programs should use one-on-one tutoring to provide academic instruction to students.[101] The panel believes that a one-to-one ratio enables the most individualized attention for students and facilitates the continuous assessment of student progress and academic needs.[102] If resources are limited and do not allow for one-on-one tutoring, the panel recommends that students be broken into small groups of roughly three to nine

95. Black et al. (2008); Morris, Shaw, and Perney (1990); Meier and Invernizzi (2001); Borman and Dowling (2006); Borman, Goetz, and Dowling (2008); Courtney et al. (2008); Johnson and Johnson (1999).

96. August et al. (2001); Black et al. (2008); Udell (2003); Courtney et al. (2008).

97. New York City Board of Education (1991); Courtney et al. (2008).

98. *Effective questioning* is the process of framing questions in a way that will help the teacher evaluate the student's learning process while deepening the student's understanding of a concept.

99. In a running record, the instructor has a copy of the book the student is reading and follows along as the student reads. When the student makes a mistake, the instructor makes a note in his or her own copy. In subsequent readings of the same book, the instructor can identify which mistakes are repeated and which ones the student has learned to avoid (Iverson and Tunmer 1993).

100. Black et al. (2008); Courtney et al. (2008).

101. Morris, Shaw, and Perney (1990); Meier and Invernizzi (2001); McKinney (1995); Ross et al. (2008); Baker, Gersten, and Keating (2000). A meta-analysis of OST strategies found that one-on-one reading tutoring programs had larger average effect sizes than did reading programs that taught in small or large groups (Lauer et al. 2004).

102. Slavin (2006).

students,[103] at least when there is the opportunity for students to work independently.[104] In addition to giving the students an opportunity to learn teamwork skills and enhance their relationships with other students (see recommendation 4), dividing the class into smaller groups allows students to work at their own pace.[105] Students who are more advanced might not feel frustrated by having to wait for other students to catch up, and students who struggle with the material would not feel the pressure of holding up the class.[106] Students can be grouped based on their skill level for that topic (indicated by assessment data) or by grade.[107] Instructors also can create heterogeneous groups, in which students assist their peers in a cooperative learning format.[108]

3. Provide professional development and ongoing instructional support to all instructors.

The organizer of the OST program (i.e., the OST coordinator or the program director) should have primary responsibility for training instructors to implement the program properly. However, schools and districts already may have high-quality training and professional development resources. In this case, it may be to the school's benefit to be involved in the training of OST instructors, many of whom may be their own classroom teachers or paraprofessional staff, to ensure quality instruction and promote alignment with the school curriculum. The panel recommends that schools discuss training options with the OST program and consider involving OST program instructors in training and professional development courses at the school and district levels.

The level and intensity of OST instructor training should not overburden instructors with unnecessary training but should ensure fidelity to the program. Further, the intensity of OST instructor training will depend on the background and experience of the instructors, including whether they are experienced and credentialed teachers, graduate students in education, or volunteers with minimal teaching experience.[109] To facilitate targeted training, OST programs should vary the intensity of training by dividing teachers into separate tracks based on their prior experience.[110] Inexperienced instructors should be observed and coached in the initial stages of teaching to monitor quality and to identify the need for additional training.[111] OST programs can use experienced teachers as trainers and to serve as resources for less experienced instructors.[112] Training sessions should at least cover using assessment data in instruction, individualizing instruction and lesson planning, aligning programming with the goals of the

103. Black et al. (2008), Langberg et al. (2006), and U.S. Department of Education (2003) provide examples of small group sizes.

104. Although the literature does not suggest conclusively that there are large differences in outcomes between one-on-one tutoring and small group instruction in out-of-school time, there is more evidence for the effectiveness of one-on-one tutoring in raising student achievement (Slavin 2006; Lauer et al. 2004; Bloom 1984).

105. Schacter and Jo (2005); Black et al. (2008); Langberg et al. (2006); Udell (2003).

106. In a survey of students in the Chicago Summer Bridge program (Stone et al. 2005), researchers reported that more advanced students were frustrated by the slow pace of the whole class and did not think that they were learning what they needed. Other students appreciated that the instructor would wait for them to understand the material before moving the class on to another topic.

107. Schacter and Jo (2005); Black et al. (2008); Langberg et al. (2006); U.S. Department of Education (2003); Brown (2002).

108. August et al. (2001); Johnson and Johnson (1999).

109. See recommendation 1 for a discussion of hiring staff for OST programs.

110. Arbreton et al. (2008).

111. Morris, Shaw, and Perney (1990); Udell (2003); Sheldon and Hopkins (2008); Wasik and Slavin (1993); Tucker (1995).

112. Udell (2003).

school, and using monitoring and evaluation procedures.[113]

OST instructors should be given manuals to be used as an ongoing and useful reference.[114] All instructors also should receive ongoing support and professional development that is tailored to the needs of the instructors and their students or that targets areas in which instructors are weak or need additional guidance.[115]

Potential roadblocks and solutions

Roadblock 3.1. *The program cannot afford one-on-one or small group tutoring.*

Suggested Approach. If not enough instructors are available to give individual attention to each student, consider incorporating volunteers or pooling instructors with other OST providers. Volunteers can help lower the student-staff ratio and can be used strategically to maximize the use of experienced teachers. High school students or other volunteers can be recruited to lead groups of students in recreational or athletic activities while experienced instructors teach smaller groups or tutor individual students. The program also could consider partnering with another provider that has sufficient staff resources and alternate staff schedules or combine programs.

Roadblock 3.2. *OST instructors are not familiar with their students because they do not teach them during the school day.*

Suggested Approach. OST instructors have less time to get to know their students, especially academically, but the students' classroom teachers have much of the information they may need. Instructors should take advantage of relationships with the school (see recommendation 1) to communicate with the classroom teachers about students' academic and social needs. OST instructors also may have more opportunities to communicate with parents when they pick up their children and should take advantage of that time to become more familiar with their students.

Roadblock 3.3. *Useful assessment data are not currently available to individualize instruction.*

Suggested Approach. If the student assessment data available are not adequate for evaluating the needs of the student, the OST program should administer its own formal and/or informal assessments. The program or instructor should choose assessments that will provide the most information on the students' achievement level with the least burden on the students or instructors.

113. Black et al. (2008); Udell (2003); Chaplin and Capizzano (2006); Arbreton et al. (2008); Courtney et al. (2008); Wasik and Slavin (1993).

114. August et al. (2001); Black et al. (2008); Langberg et al. (2006); Udell (2003); Chaplin and Capizzano (2006); Courtney et al. (2008).

115. August et al. (2001); Black et al. (2008); Sheldon and Hopkins (2008).

Recommendation 4. Provide engaging learning experiences

The panel recommends that OST activities be interactive, hands on, learner directed, and related to the real world, while remaining grounded in academic learning goals.[116] High-quality instruction is important, but producing achievement gains in OST is particularly challenging. Both students and teachers suffer from fatigue after a long school day or year. OST programs are typically voluntary and must compete with nonacademically oriented activities to attract students and effect learning gains. The panel believes that instructors must be particularly engaging to overcome student fatigue and distractions from nonacademically oriented activities. Although all of the practices outlined in this recommendation may not be relevant to all programs, the panel believes that OST programs have unique flexibility to provide engaging opportunities for student learning and that these recommendations can be useful in both one-on-one and group settings.

Student engagement in school and classroom instruction is correlated with improved academic outcomes,[117] and disengagement is correlated with poor academic performance.[118] Student choice, cooperative learning experiences, and hands-on and real-world activities, as well as supportive relationships between staff and students, have been linked to student engagement, persistence with learning activities, and connection to the school.[119] Evidence suggests that many of the activities discussed in this recommendation (e.g., games, recreation, or field trips) are ineffective when they occur independently of the academic component of the program.[120] However, the panel believes that by making the connection between engaging activities and academic learning explicit, OST programs can produce greater academic achievement gains.

Level of evidence: Low

The panel judged the level of evidence for this recommendation to be *low*. Studies of the types of activities covered in this recommendation have demonstrated that they are effective in laboratory and school-day settings. However, the evidence for whether these practices are effective is mixed in the OST context. Although many programs identified making programming engaging as a key program goal, very few demonstrated consistently positive effects, and none linked positive effects directly to the use of the strategies outlined in this recommendation.

116. Capizzano et al. (2007); Arbreton et al. (2008); Borman and Dowling (2006).

117. Connell, Spencer, and Aber (1994); Marks (2000); Wellborn and Connell (1990); Connell and Wellborn (1991).

118. Finn, Pannozzo, and Voelkl (1995); Finn and Rock (1997).

119. See, for example, Newmann (1991); Helme and Clark (2001); Blumenfeld and Meece (1988); Battistich et al. (1997); Klem and Connell (2004); Turner (1995); Perry (1998); Skinner and Belmont (1993); Connell and Wellborn (1991). This conclusion is drawn from the information in Fredricks, Blumenfeld, and Paris (2004), which reviews the available research on engagement. Other relevant sources include Cordova and Lepper (1996); Guthrie et al. (1999); and Guthrie, Wigfield, and VonSecker (2000). Students in Chicago Summer Bridge reported having more motivation when they perceived that their teachers were concerned with their well-being (Stone et al. 2005).

120. U.S. Department of Education (2003).

Brief summary of evidence to support the recommendation

Several studies, conducted outside of the OST arena, have examined the effectiveness of different strategies to increase student motivation, engagement, and academic success.[121] In the OST context, however, the evidence supporting the use of engaging activities has been mixed. Five programs documented practices highly aligned with those recommended by the panel; these either made a deliberate effort to integrate engaging practices with academic content or intentionally developed relationships between students and OST staff with the objective of engaging students with school and learning.[122] Of these, three programs demonstrated positive academic effects,[123] and two showed mixed effects.[124] Six other programs had practices similar to the panel's recommendations, but they either did not provide enough descriptive evidence to determine whether they were highly aligned with the panel's recommendations or contained some evidence that the strategies were used in a way that was inconsistent with the panel's recommendations.[125] One of these showed positive effects,[126] one showed mixed effects,[127] and four showed no effects.[128] Although the evidence is somewhat mixed, on average, those with positive or mixed effects seemed to be more closely aligned with the strategies recommended by the panel.

How to carry out this recommendation

1. Make learning relevant by incorporating practical examples and connecting instruction to student interests and experiences.

The panel recommends providing instruction using tools or materials that students can relate to. OST staff should identify the academic concept being taught and then find practical examples and relevant material to support that learning objective. When possible, programs should consider integrating academic content using an overarching program theme or final project to reinforce different learning activities and make learning more meaningful.[129] Because OST programs operate during nontraditional hours (i.e., after school, weekends, or summers), they are positioned to provide different types of activities than do schools. One example is field trips, which can help develop students' background knowledge and connect the real world to the in-class curriculum.[130] OST programs also can invite guest speakers to demon-

121. Cordova and Lepper (1996); Anderson (1998); Guthrie et al. (1999); Guthrie, Wigfield, and VonSecker (2000); Battistich et al. (1997); Klem and Connell (2004); Helme and Clark (2001); Blumenfeld and Meece (1988); Connell and Wellborn (1991).

122. Early Risers—August et al. (2001); Developmental Mentoring—Karcher, Davis, and Powell (2002); Enhanced Academic Instruction—Black et al. (2008); Teach Baltimore—Borman and Dowling (2006); KindergARTen—Borman, Goetz, and Dowling (2008).

123. Early Risers—August et al. (2001); Developmental Mentoring—Karcher, Davis, and Powell (2002); KindergARTen—Borman, Goetz, and Dowling (2008).

124. Enhanced Academic Instruction—Black et al. (2008); Teach Baltimore—Borman and Dowling (2006).

125. Summer Reading Day Camp—Schacter and Jo (2005); Chicago Summer Bridge—Jacob and Lefgren (2004); L.A.'s BEST—Goldschmidt, Huang, and Chinen (2007); YS-CARE—Bissell et al. (2002); 21st CCLC—U.S. Department of Education (2003); NDP—Udell (2003).

126. Summer Reading Day Camp—Schacter and Jo (2005).

127. Chicago Summer Bridge—Jacob and Lefgren (2004).

128. L.A.'s BEST—Goldschmidt, Huang, and Chinen (2007); YS-CARE—Bissell et al. (2002); 21st CCLC—U.S. Department of Education (2003); NDP—Udell (2003).

129. Center for Applied Linguistics (1994); Reisner et al. (2004); Karcher, Davis, and Powell (2002); Capizzano et al. (2007); Borman, Goetz, and Dowling (2008).

130. Borman and Dowling (2006); Borman, Goetz, and Dowling (2008).

strate how academic content relates to their career experiences to help students find practical meaning in the academic concepts they learn in school.[131] Working or retired practitioners may be interested in serving as guest speakers and/or mentors.[132]

The panel believes that OST instructional strategies should capitalize on student interests and make students want to engage in the instructional material. OST staff should first develop a clear understanding of students' interests. Brief conversations with students and/or teachers or quick surveys are simple mechanisms that programs can use to gather information about student interests.[133] Instruction can then build off existing student interests and incorporate examples from sports, current events, or other community-specific interests. OST instructors can connect reading materials or concepts introduced in class to students' everyday life experiences.[134] OST programs also can personalize instructional content and materials to student interests and provide students with choices to maximize student learning.[135] Instructional strategies can range from the simple (e.g., personalizing reading instruction by beginning with the letters of a student's name to teach letter-sound identification) to the elaborate (e.g., modifying a course text to make it relevant to students' reading levels, experiences, and social contexts).

2. Make learning active through opportunities for collaborative learning and hands-on academic activities.

The panel recommends that OST instruction encourage students to think actively about and interact with academic content. One example is collaborative learning: OST programs can encourage interaction among peers by pairing struggling students with more advanced partners to help them grasp difficult concepts.[136] OST instructors also can break students into groups to work together to solve a problem or to rotate through learning stations, but effective group exercises can be less formal and as simple as having a group of three students complete a math problem together.[137] OST programs also can use role-playing activities to make experiences real and meaningful for students.[138]

Hands-on activities also can be helpful in reinforcing academic content.[139] OST staff, particularly those working with younger students, should provide opportunities for students to use "exploration, creativity, discovery and play."[140] Games, projects, manipulatives, and computers can provide practice and enrichment on content objectives.[141] Hands-on science and math projects or exploratory learning activities make academic subjects interesting for students.[142] Learning can be active without involving physical activity or elaborate les-

131. Capizzano et al. (2007); Chaplin and Capizzano (2006).

132. Ferreira (2001); Center for Applied Linguistics (1994).

133. Cordova and Lepper (1996).

134. Schacter and Jo (2005); Black et al. (2008); Guthrie et al. (2000).

135. Cordova and Lepper (1996).

136. Stone et al. (2005).

137. Roberts and Nowakowski (2004). Ames (1992) describes the literature on how the learning environment affects student motivation.

138. Durlak and Weissberg (2007); Karcher (2005); James-Burdumy, Dynarski, and Deke (2007).

139. Anderson (1998)

140. Schacter and Jo (2005), p. 160.

141. Black et al. (2008); Cordova and Lepper (1996); Capizzano et al. (2007); Nears (2008); Arbreton et al. (2008); Borman and Dowling (2006).

142. Anderson (1998); Borman and Dowling (2006); Capizzano et al. (2007); Arbreton et al. (2008); Goldschmidt, Huang, and Chinen (2007). Guthrie et al. (1999) found that the Concept-Oriented Reading Instruction (CORI) teaching framework, which includes the use of real-world observation and hands-on activities to personalize reading experiences, increased student motivation to learn and improved text comprehension and conceptual learning.

sons, however. OST programs should not underestimate the engaging nature of a dynamic instructor who uses active questioning and participation to motivate and engage students in direct instruction.[143]

3. Build adult-student relationships among OST program participants.

Positive and supportive relationships with adults can help students feel connected to the OST program and invested in the academic material they cover.[144] Likewise, as instructors get to know their students better, they can pinpoint their interests, relate academic content to their context and interests, and encourage them to have high expectations for their achievement.[145] To do this, OST programs can hire staff with backgrounds and interests that complement those of their students and can serve as positive role models and, thus, motivate students toward success.[146] OST programs can use relationship-building activities to help staff get to know students and become invested in their outcomes.[147] Programs can support relationships between students and staff members by assigning one staff member to a group of students to move with them across OST activities or be with them as much as possible. As staff members spend more time with students, the panel believes they should endeavor to accumulate knowledge about student interests and invest in supportive relationships,[148] helping students feel cared for and connected to both the OST program and academic learning more generally.

OST programs also can support the development of other meaningful relationships in students' lives. For example, mentors can help support relationships between students and their parents or teachers by coordinating and mediating meetings to discuss developmental needs or by creating settings such as field trips in which mentees have the opportunity to interact socially with adults.[149]

Potential roadblocks and solutions

Roadblock 4.1. *The OST staff does not have experience leading cooperative learning activities (or any of the other strategies outlined above).*

Suggested Approach. Unless teachers have experience using cooperative learning, implementing these types of activities can be difficult or ineffective. The panel recommends that OST programs hire teachers with these skills. OST programs also can gather best practices from teachers at other sites and during the school day. Finally, OST programs should train staff to use these instructional strategies if they do not already have the appropriate skills.

Roadblock 4.2. *The academic content is too specific for one instructor to teach different subjects to the same students.*

Suggested Approach. Particularly as students get older, it might not be feasible for the same staff member to instruct the same students across multiple subjects. Another method for developing positive relationships between students and OST instructors is establishing a "home-room" instructor whom students can engage with informally at a particular time during the program to develop a more meaningful and caring relationship.

143. Stone et al. (2005).

144. Klem and Connell (2004); August et al. (2001); Karcher, Davis, and Powell (2002); Stone et al. (2005); Goldschmidt, Huang, and Chinen (2007); Udell (2003).

145. Udell (2003).

146. Center for Applied Linguistics (1994); Carter, Straits, and Hall (2007).

147. Goldschmidt, Huang, and Chinen (2007); Udell (2003).

148. Arbreton et al. (2008).

149. Karcher, Davis, and Powell (2002); Karcher (2005).

Roadblock 4.3. *It's too expensive to hire qualified staff to facilitate engaging academic activities.*

Suggested Approach. To reduce costs, instead of hiring additional staff for the engaging activities designed to supplement academic content, OST programs can capitalize on existing staff with specialized knowledge and experiences,[150] use volunteers, or share enrichment staff with other OST programs.[151]

Roadblock 4.4. *We don't have the resources to pay for field trips and materials for hands-on activities.*

Suggested Approach. Field trips and activities do not have to be elaborate. If resources are not available for field trips, walks outdoors to explore the surrounding neighborhoods or parks or virtual field trips can be viable options.[152]

150. Borman and Dowling (2006).

151. Bissell et al. (2002); Arbreton et al. (2008).

152. For information on virtual field trips, see Manzo (2009).

Recommendation 5. Assess program performance and use the results to improve the quality of the program

OST program organizers should be aware of two types of performance assessments: (1) *formative* evaluations determine how a program has progressed in realizing its model of implementation and which program aspects are working well, and (2) *summative* evaluations determine how effective a program has been in achieving its goals, which usually include the improvement of student outcomes. Both types of evaluations are important in the life cycle of a program and especially instrumental in any program improvement effort.[153]

For efficient program management, the panel believes that it is important for OST providers to have internal mechanisms to monitor staff performance and collect data related to program implementation. However, the panel believes that schools (or districts[154]) have a unique responsibility to conduct independent evaluations of program implementation and its impacts on students. The findings from these evaluations can be used to spot problems and develop potential solutions, identify conditions in which the program is most effective, or make comparisons with the performance of other programs. The findings can be especially valuable in making long-term decisions about which strategies and programs should be continued or replicated in other areas.

Level of evidence: Low

The panel judged the level of evidence supporting this recommendation to be *low*. Although the panel believes that monitoring and improving performance is important to ensure that the program is carrying out its intended objectives and adapting to changing needs and feedback, no direct evidence suggests that monitoring leads to increased academic achievement in OST programs. More research would be needed to isolate whether it is the monitoring itself or other components that lead to positive academic effects in those programs that do some form of monitoring.

Brief summary of evidence to support the recommendation

OST programs could consider using different kinds of assessments. The panel found seven programs relevant to this recommendation with studies that met WWC standards with or without reservations.[155] Of these seven, five included elements of fidelity monitoring in order to ensure that program implementation followed the program model,[156] one used fidelity monitoring and

153. A meta-analysis of summer programs suggests that programs that undergo monitoring of instruction and performance tend to produce larger effects than programs that do not (Cooper et al. 2000).

154. Throughout this recommendation, we refer to the school as the driving force behind the evaluation. However, it also is likely that districts will play this role, possibly because a program has wider coverage than just one school. Districts also may support schools in carrying out certain functions such as data collection or analysis, but that is a decision to be made collaboratively.

155. Early Risers—August et al. (2001); CHP—Langberg et al. (2006); Teach Baltimore—Borman and Dowling (2006); Chicago Summer Bridge—Jacob and Lefgren (2004); Enhanced Academic Instruction—Black et al. (2008); L.A.'s BEST—Goldschmidt, Huang, and Chinen (2007); YS-CARE—Bissell et al. (2002).

156. Early Risers—August et al. (2001); CHP—Langberg et al. (2006); Teach Baltimore—Borman and Dowling (2006); Chicago Summer Bridge—

ongoing external evaluations,[157] and one program used surveys of key stakeholders to gauge satisfaction with the program.[158] Of the six that used fidelity monitoring, all were considered to be doing so in a way that was largely consistent with the panel's recommendation, and five had either positive[159] or partially positive effects on academic achievement.[160] The program that also used external evaluators and the program with stakeholder surveys were both inconclusive with nonsignificant effects.[161] The one program that used stakeholder surveys was considered to have a lower level of consistency with this recommendation because it was unclear how it used the surveys to improve the program.

How to carry out this recommendation

1. Develop an evaluation plan.

An evaluation plan should present the evaluation objectives and research questions, as well as details for the data collection and analysis processes. This includes a decision about which type of evaluation is appropriate; formative evaluations are more relevant for new programs, whereas summative evaluations should be undertaken with more established programs[162] that have demonstrated successful and consistent implementation for at least three years.[163] The plan should contain information regarding the outcomes that will be used in the evaluation, the data that will be collected to measure those outcomes, and how data will be gathered. It also should outline the timeline for carrying out various components of the plan and describe how results will be disseminated and used. Since the process plays a defining role in the evaluation, the panel recommends that the school involve all stakeholders in the development of the plan, including teachers, parents, OST program administrators, and OST staff.

2. Collect program and student performance data.

Program implementation data, student outcome data, and feedback from other stakeholders regarding satisfaction with the program should be gathered.[164] Program activity should be monitored as closely as possible; the more detail available about implementation, the easier it will be to identify specific areas for improvement. The panel believes that the school OST coordinator is the natural person to have a lead role in program monitoring, as that person will have the best understanding of both the school's goals and the program's operation. Some suggestions for collecting monitoring and outcome data follow:

- *Observations of implementation.* Schools should observe OST instruction and student management,[165] recreational time, and the day-to-day operation of the program (e.g., transportation, parent interaction, collaboration with

Jacob and Lefgren (2004); Enhanced Academic Instruction—Black et al. (2008).

157. L.A.'s BEST—Goldschmidt, Huang, and Chinen (2007).

158. YS-CARE—Bissell et al. (2002).

159. Early Risers—August et al. (2001); CHP—Langberg et al. (2006).

160. Teach Baltimore—Borman and Dowling (2006); Chicago Summer Bridge—Jacob and Lefgren (2004); Enhanced Academic Instruction—Black et al. (2008).

161. L.A.'s BEST—Goldschmidt, Huang, and Chinen (2007); YS-CARE—Bissel et al. (2002).

162. This assumes that outcome data are available and the sample size is large enough to have adequate statistical power to measure impacts.

163. Fullan (2001) suggests that school reform interventions should not be expected to demonstrate significant positive change in the first two to three years of implementation.

164. A report by Ross, Potter, and Harmon (2006) provides useful guidance for states in evaluating SES providers, much of which can be applied to schools evaluating OST programs or providers.

165. Black et al. (2008); Stone et al. (2005); Langberg et al. (2006); Borman and Dowling (2006).

schoolteachers). Create standardized tools for observers to use in assessing program quality.[166] In designing or choosing an observation tool, the school should decide which aspects of the program are important for effective implementation, such as curriculum content, instructional delivery, and staff-student interaction.[167] Each component should have its own checklist of items that breaks down the actions that represent good practice.[168] Providers also should conduct their own ongoing monitoring to ensure proper implementation.

- *Student outcomes*. The panel recommends that the school and OST provider share responsibility for collecting student outcome data. The OST provider can track student attendance in the program, student performance on exercises or assessments conducted in the program, and student behavior such as engagement during instructional time or disciplinary incidences.[169] The school will have access to course grades and records from the school day, as well as scores on state or district assessments. Recommendation 1 emphasized the program coordinator's role as a facilitator in communicating between the school and the OST program regarding student academic needs and performance data. If needed, this role can be extended at the school level to recording data for evaluation purposes, including maintaining a central database of information collected from the OST program, district, and school staff regarding each student's progress.

- *Stakeholder satisfaction*. The evaluation should provide an opportunity for stakeholders such as the principal, classroom teachers, parents, and students to offer input on how the program is meeting their needs, such as whether the OST curriculum is complementing classroom teaching or whether students are getting enough individual attention from instructors.[170] At the basic level, the school could contact parents by phone to have an informal conversation about their child's experience with the OST program. Another option is to invite a small group of parents or teachers for a focus group discussion about program performance. Mailing surveys is another alternative, since this option makes it possible to reach many respondents in a limited time frame. However, the panel cautions that even the most complex surveys have limitations in terms of biased results and should be interpreted carefully. For example, surveys can be useful for identifying problematic trends in service delivery or areas for improvement, but they should not be interpreted as conclusive evidence of program effectiveness.

3. Analyze the data and use findings for program improvement.

The panel recommends that the school carefully analyze the data it has collected on implementation, student outcomes, and satisfaction and place findings in the context of how to improve the program. The school should look for inconsistencies between what OST providers proposed to do and how the program is actually implemented. They also should identify patterns in the data that suggest problem areas, such as irregular attendance on certain days of the week. Districts can use a

166. Sheldon and Hopkins (2008). For more resources on program quality assessment tools, see Yohalem et al. (2009) and publications by the Bureau of Public School Options, Florida Department of Education (2007, n.d.).

167. August et al. (2001).

168. Bureau of Public School Options (2007).

169. August et al. (2001); Borman and Dowling (2006).

170. Goldschmidt, Huang, and Chinen (2007); Bissell et al. (2002).

larger dataset to look for patterns across schools or across OST providers.

To encourage program growth, the panel recommends that the school share its evaluation results with the OST program. This also will allow suggestions for improvement or strategies to address areas of concern to be discussed collaboratively. For example, if observations of instruction indicate that teachers are not adequately covering content, targeted professional development may be necessary. A formative evaluation that indicates that the program is not improving might suggest moving in a different direction from the current program model or even ending the program.

4. Conduct a summative evaluation.

Once formative evaluations conclude that the program is being implemented as designed, a summative or impact evaluation is appropriate. If three years or more have elapsed, a summative evaluation might still be useful even without consistent implementation. The summative evaluation should be conducted in the most rigorous way possible given the resources available to the school (or district) and the level of cooperation from the OST provider. A rigorous evaluation is one of the best measurements of a program's success at raising student achievement, and positive results could boost participation in and funding for the program. An external evaluator can lend credibility to the evaluation and its findings.[171] A randomized experiment is ideal but not always practical for every OST program. The school should consider the next best evaluation design that will provide evidence of effectiveness.[172] For some larger districts, it might be feasible to conduct a district-wide, multischool evaluation, but for others the panel encourages participation in site-specific, independent evaluations. If a qualified evaluator is not available, the school should be cautious about concluding program effectiveness from the data collected for the evaluation. It could at least consider consulting with an experienced evaluator about evaluation plans and methods.

Potential roadblocks and solutions

Roadblock 5.1. *Staff time and expertise are not sufficient for collecting and analyzing data.*

Suggested Approach. If staff time and resources are already too constrained to apply to evaluation efforts, explore the availability of pro bono help from local colleges or universities or the parent-teacher association. These institutions and organizations may be able to provide observers or data collection and analysis services. Doctoral students might even be interested in conducting a full evaluation for their dissertation.

Roadblock 5.2. *The school and the program do not want to duplicate monitoring efforts.*

Suggested Approach. Both schools and OST providers need to be simultaneously collecting information on the program. The type of information each collects does not have be the same, and any overlapping responsibilities can be discussed in the evaluation planning stage. For example, providers may monitor attendance and collect data from their own instructors on assessments administered to students in OST, but schools will want to collect their own achievement data on the same students, including state assessments from the district. Both schools and OST providers should conduct their own observations of instruction in the program.

171. Goldschmidt, Huang, and Chinen (2007).

172. See the What Works Clearinghouse (WWC) Procedures and Standards Handbook for a guide to quality research methods: http://ies.ed.gov/ncee/wwc/references/idocviewer/doc.aspx?docid=19&tocid=1.

Appendix A. Postscript from the Institute of Education Sciences

What is a practice guide?

The health care professions have embraced a mechanism for assembling and communicating evidence-based advice to practitioners about care for specific clinical conditions. Variously called practice guidelines, treatment protocols, critical pathways, best practice guides, or simply practice guides, these documents are systematically developed recommendations about the course of care for frequently encountered problems, ranging from physical conditions, such as foot ulcers, to psychosocial conditions, such as adolescent development.[173]

Practice guides are similar to the products of typical expert consensus panels in reflecting the views of those serving on the panel and the social decisions that come into play as the positions of individual panel members are forged into statements that all panel members are willing to endorse. Practice guides, however, are generated under three constraints that do not typically apply to consensus panels. The first is that a practice guide consists of a list of discrete recommendations that are actionable. The second is that those recommendations taken together are intended to be a coherent approach to a multifaceted problem. The third, which is most important, is that each recommendation is explicitly connected to the level of evidence supporting it, with the level represented by a grade (e.g., strong, moderate, low).

The levels of evidence, or grades, are usually constructed around the value of particular types of studies for drawing causal conclusions about what works. Thus, one typically finds that a strong level of evidence is drawn from a body of randomized controlled trials, the moderate level from well-designed studies that do not involve randomization, and the low level from the opinions of respected authorities (see Table 1). Levels of evidence also can be constructed around the value of particular types of studies for other goals, such as the reliability and validity of assessments.

Practice guides also can be distinguished from systematic reviews or meta-analyses such as WWC intervention reviews or statistical meta-analyses, which employ statistical methods to summarize the results of studies obtained from a rule-based search of the literature. Authors of practice guides seldom conduct the types of systematic literature searches that are the backbone of a meta-analysis, although they take advantage of such work when it is already published. Instead, authors use their expertise to identify the most important research with respect to their recommendations, augmented by a search of recent publications to ensure that the research citations are up-to-date. Furthermore, the characterization of the quality and direction of the evidence underlying a recommendation in a practice guide relies less on a tight set of rules and statistical algorithms and more on the judgment of the authors than would be the case in a high-quality meta-analysis. Another distinction is that a practice guide, because it aims for a comprehensive and coherent approach, operates with more numerous and more contextualized statements of what works than does a typical meta-analysis.

Thus, practice guides sit somewhere between consensus reports and meta-analyses in the degree to which systematic processes are used for locating relevant research and characterizing its meaning. Practice guides are more like consensus panel reports than meta-analyses in the breadth and complexity of the topic that is addressed. Practice guides are different

173. Field and Lohr (1990).

from both consensus reports and meta-analyses in providing advice at the level of specific action steps along a pathway that represents a more-or-less coherent and comprehensive approach to a multi-faceted problem.

Practice guides in education at the Institute of Education Sciences

IES publishes practice guides in education to bring the best available evidence and expertise to bear on the types of challenges that cannot be addressed currently by single interventions or programs. Although IES has taken advantage of the history of practice guides in health care to provide models of how to proceed in education, education is different from health care in ways that may require that practice guides in education have somewhat different designs. Even within health care, for which practice guides now number in the thousands, there is no single template in use. Rather, one finds descriptions of general design features that permit substantial variation in the realization of practice guides across subspecialties and panels of experts.[174] Accordingly, the templates for IES practice guides may vary across practice guides and change over time and with experience.

The steps involved in producing an IES-sponsored practice guide are first to select a topic, which is informed by formal surveys of practitioners and requests. Next, a panel chair is recruited who has a national reputation and up-to-date expertise in the topic. Third, the chair, working in collaboration with IES, selects a small number of panelists to co-author the practice guide. These are people the chair believes can work well together and have the requisite expertise to be a convincing source of recommendations. IES recommends that at one least one of the panelists be a practitioner with experience relevant to the topic being addressed. The chair and the panelists are provided with a general template for a practice guide along the lines of the information provided in this appendix. They also are provided with examples of practice guides. The practice guide panel works under a short deadline of six to nine months to produce a draft document. The expert panel members interact with and receive feedback from staff at IES during the development of the practice guide, but they understand that they are the authors and, thus, responsible for the final product.

One unique feature of IES-sponsored practice guides is that they are subjected to rigorous external peer review through the same office that is responsible for the independent review of other IES publications. A critical task of the peer reviewers of a practice guide is to determine whether the evidence cited in support of particular recommendations is up-to-date and that studies of similar or better quality that point in a different direction have not been ignored. Peer reviewers also are asked to evaluate whether the evidence grade assigned to particular recommendations by the practice guide authors is appropriate. A practice guide is revised as necessary to meet the concerns of external peer reviewers and to gain the approval of the standards and review staff at IES. The process of external peer review is carried out independent of the office and staff within IES that instigated the practice guide.

Because practice guides depend on the expertise of their authors and their group decisionmaking, the content of a practice guide is not and should not be viewed as a set of recommendations that in every case depends on and flows inevitably from scientific research. It is not only possible but also likely that two teams of recognized experts working independently to produce a practice guide on the same topic would generate products that differ in important respects. Thus, consumers of practice

174. American Psychological Association (2002).

guides need to understand that they are, in effect, getting the advice of consultants. These consultants should, on average, provide substantially better advice than an individual school district might obtain on its own because the authors are national authorities who have to reach agreement among themselves, justify their recommendations in terms of supporting evidence, and undergo rigorous independent peer review of their product.

Institute of Education Sciences

Appendix B. About the authors

Panel

Megan Beckett, Ph.D., is a RAND sociologist who has worked on a range of topics related to families and children, aging, and demography. Dr. Beckett is a recognized expert on after-school programs and policies and has co-authored a number of important studies and overviews of the OST field. She has been invited to speak on the subject of after-school care with the Netherlands' minister for social affairs and employment and the Netherlands' secretary general for the Ministry of Social Affairs, the California congressional delegation, the California League of Women Voters, the child policy deputy for Los Angeles County, and Minnesota legislature members. She also has been cited in *Education Week* and the *Los Angeles Times*, has published several opinion pieces on after-school programs, and is a member of the IES-sponsored Study of Enhanced Academic Instruction in After-School Programs Technical Working Group.

Geoffrey Borman, Ph.D., is a professor of education at the University of Wisconsin–Madison and a senior researcher with the Consortium for Policy Research in Education. Dr. Borman's main substantive research interests revolve around social stratification and the ways in which educational policies and practices can help address and overcome inequality. His primary methodological interests include the synthesis of research evidence, the design of quasi-experimental and experimental studies of educational innovations, and the specification of school-effects models. He has been appointed as a methodological expert on a number of national research and development projects and was recently named to the 15-member Urban Education Research Task Force established to advise the U.S. Department of Education on issues affecting urban education. Among his various awards and honors, most recently Dr. Borman received the 2008 American Educational Research Association (AERA) Palmer O. Johnson Award and was recognized for his contributions to education research by selection as an AERA Fellow.

Jeffrey Capizzano is vice president of public policy and research at Teaching Strategies, Inc. Mr. Capizzano brings to the panel extensive research and evaluation experience in the areas of OST, youth development, and summer learning programs and is skilled in a variety of quantitative and qualitative data collection and analysis techniques. Mr. Capizzano was involved in an experimental evaluation of an accelerated learning summer program, Building Educated Leaders for Life (BELL), and is currently a member of the BELL 2008–10 Evaluation Advisory Board. Mr. Capizzano also has published a chapter in the *Handbook of Applied Developmental Science* that investigates the role of federal and state governments in child and family policy. Mr. Capizzano was formerly a research associate in the Urban Institute's Center on Labor, Human Services, and Population.

Danette Parsley, M.A., is the senior director of system and school improvement in Mid-continent Research for Education and Learning's (McREL) Field Services division and leads McREL's fieldwork in system improvement and OST. Ms. Parsley currently oversees several projects focused on OST programs, including a U.S. Department of Education–funded High-Quality Supplemental Educational Services and After-School Partnerships demonstration grant. She has extensive experience providing professional development and technical assistance to OST providers, schools, districts, and state departments of education and in developing products and tools to assist schools and districts engaging in continuous improvement. Ms. Parsley holds an M.A. in educational psychology, research, and evaluation methodology from the

University of Colorado at Denver. Before joining McREL, Ms. Parsley was a classroom teacher and adolescent counselor.

Steven M. Ross, Ph.D., is currently a senior research scientist and professor at the Center for Research and Reform in Education at Johns Hopkins University. Dr. Ross is the author of six textbooks and more than 120 journal articles in the areas of educational technology and instructional design, at-risk learners, educational reform, computer-based instruction, and individualized instruction. He is the editor of the research section of the *Educational Technology Research and Development* journal and a member of the editorial board for two other professional journals. Dr. Ross recently held the Lillian and Morrie Moss Chair of Excellence in Urban Education at the University of Memphis. He has testified on school restructuring research before the U.S. House of Representatives Subcommittee on Early Childhood, Youth, and Families and is a technical advisor and researcher on current federal and state initiatives regarding the evaluation of technology usage, supplemental educational services (SES), charter schools, Reading First, and the Comprehensive School Reform program.

Allen Schirm, Ph.D., is vice president and director of human services research at Mathematica Policy Research, Inc., and is a nationally recognized expert in program evaluation. In addition to his substantive knowledge of education programs targeting disadvantaged youth, Dr. Schirm has extensive experience in statistical methods and data analysis. He directed the random assignment evaluation of the Quantum Opportunity Program (QOP) demonstration, a multiservice program for high school–aged at-risk students, which included intensive mentoring and after-school academic support. Dr. Schirm also directed the National Evaluation of Upward Bound, a program that provides extensive educational support (including academic instruction, tutoring, and other services) for disadvantaged students preparing for college. He has served on four expert panels convened by the National Academy of Sciences' Committee on National Statistics and is a fellow of the American Statistical Association.

Jessica Taylor, M.S., is program director at the Bureau of School Improvement at the Florida Department of Education (FDOE), where she oversees a U.S. Department of Education pilot program for differentiated accountability in school improvement. Ms. Taylor has worked extensively with implementing SES in Florida, which provides services to more than 70,000 students statewide. Ms. Taylor has created several FDOE publications regarding parent outreach and program monitoring and has provided training to more than 270 SES providers. Additional work at FDOE includes overseeing parental involvement, public school choice, and magnet schools. Ms. Taylor holds an M.A. in science education from Florida State University. Prior to joining FDOE, Ms. Taylor worked in various K–12, nonformal science education programs.

Staff

Samina Sattar is a research analyst at Mathematica Policy Research, Inc. She has experience in qualitative and quantitative analysis and has provided data collection and implementation support for multisite evaluations of math curricula, intensive teacher induction programs, and teacher pay-for-performance incentives. She served as a school district liaison to collect student records and achievement data for two studies funded by the U.S. Department of Education. In this role, she participated in discussions with school districts about their data tracking and storage systems and their ability to respond to data requests. Ms. Sattar also has worked with school officials, publishers, and curriculum trainers to monitor program implementation and to coordinate onsite training of more than 1,000 teachers in elementary schools across the country. As part of a project to

provide analytic and technical assistance to the U.S. Department of Education, Institute of Education Sciences, Ms. Sattar contributed to white papers on evaluation methods with the goal of improving the quality of education research.

Virginia Knechtel is a research analyst at Mathematica Policy Research, Inc., and a former special education teacher. She has worked directly with OST programs for middle and high school students. She has researched existing principal-development pipelines in a large school district and developed two new programs to recruit and develop exceptionally qualified principal candidates to the district. Ms. Knechtel has experience working with quantitative data for the evaluation of a teacher incentive program funded by the U.S. Department of Education. She has worked with several teams to recruit districts and schools to participate in a U.S. Department of Education study of select alternative routes to teacher certification.

Elizabeth Potamites, Ph.D., received her doctoral degree in economics from New York University and is a researcher at Mathematica Policy Research, Inc. Her thesis was a quantitative exploration of why Black women work more than equivalent White women using data from the U.S. Census and the National Longitudinal Study of Mature Women. During her time at Mathematica, Dr. Potamites has had the opportunity to work on a variety of topics, including developing value-added models for ranking public schools as part of the teacher incentive program funded by the U.S. Department of Education. She is a WWC certified reviewer.

Appendix C. Disclosure of potential conflicts of interest

Practice guide panels are composed of individuals who are nationally recognized experts on the topics about which they are rendering recommendations. IES expects that such experts will be involved professionally in a variety of matters that relate to their work as a panel. Panel members are asked to disclose their professional involvements and to institute deliberative processes that encourage critical examination of the views of panel members as they relate to the content of the practice guide. The potential influence of panel members' professional engagements is further muted by the requirement that they ground their recommendations in evidence that is documented in the practice guide. In addition, the practice guide undergoes independent external peer review prior to publication, with particular focus on whether the evidence related to the recommendations in the practice guide has been appropriately presented.

There were no professional engagements or commitments reported by the panel members that were identified as potential conflicts of interest.

Appendix D. Technical information on the studies

A search for research on out-of-school time (OST) programs in the United States from 1988 to 2008 resulted in more than 1,000 studies. Of these, 130 studies examined academically focused school-based OST programs that serve elementary and middle school students and were reviewed according to What Works Clearinghouse (WWC) standards because they had a comparison group and were deemed more likely to meet standards. Studies that included evidence of initial similarity between their treatment group and comparison group or attempted to account for the possible bias introduced by self-selection into the treatment group were considered more likely to meet standards. Twenty-two studies of 18 programs met WWC evidence standards with or without reservations.

Table D1 contains descriptive information about each of these programs, and Table D2 summarizes their relevance to each recommendation. Although several studies contained practices that were similar to those recommended by the panel, in many cases, the studies did not describe them in sufficient detail to determine the degree to which the practices corresponded to those recommended by the panel. In other cases, there was evidence in the studies that the practices, although similar, were much less aligned with the panel's recommendations or missed key parts. For example, several studies implemented engaging activities but failed to link them to an academic goal.

It was challenging to determine the level of evidence for each recommendation because programs' actual practices coincide with the panel's recommendations to varying degrees, and many large OST programs have not demonstrated success in improving academic outcomes. Studies of some OST programs found positive academic effects; other studies found no effects or mixed effects. Furthermore, OST programs necessarily contain multiple components that are related to parts of the recommendations in this guide, and the effects of a program cannot usually be causally attributed to any particular component of that program. This creates a challenge for the guide, which aims to recommend specific practices rather than programs. To assess the importance of different components and their relevance to each recommendation, the panel reviewed implementation reports of programs with evaluations that met WWC evidence standards (see the Introduction for a discussion of the WWC standards and their relevance to this guide). The level of evidence for each recommendation was determined by considering the number of programs that were related to each recommendation, the degree to which the programs implemented the recommendation, and the programs' impacts on academic achievement.

In almost all cases, the information cited about each program comes from a single study; however, there were two cases in which different studies measured the effectiveness of a particular program (21st Century Community Learning Centers [21st CCLC] and supplemental educational services [SES]), and the panel relied on these to gather additional information on practices and impacts. In three other cases, more qualitative studies were consulted to gather additional descriptive evidence about a program with an impact study that met standards (Los Angeles's Better Educated Students for Tomorrow [L.A.'s BEST], Chicago Summer Bridge, and Developmental Mentoring). Finally, when the panel judged it useful, recommendations were supplemented by evidence from outside the scope of OST or with evidence from studies that did not meet WWC standards.

Table D1. Studies of OST programs that met WWC standards with or without reservations

Program and Study Details							
Brief Citation	**Program Type**	**Grades Studied[a]**	**Program Length**	**Sample Size (Analysis)**	**Sample Characteristics**	**Study Design**	**Academic Assessment Measure**
Positive Academic Effects							
KindergARTen, Borman, Goetz, & Dowling (2008)	Summer	K	6 hrs/day, 5 days/week, 6 weeks	98[b]	Urban, low-income, low-performing schools, largely non-White	RCT[c]	DIBELS[d], word lists, DRA[e], dictation
Summer Reading Day Camp, Schacter & Jo (2005)	Summer	1	9 hrs/day, 5 days/week, 7 weeks	118	Urban, low-income, largely non-White	RCT	Gates-MacGinitie and SAT[f] 9 Decoding and Comprehension
Early Risers, August et al. (2001)	Summer and school-year mentoring	K–2	4 days/week, 6 weeks in summer; once a week during school year, 2 years	201	Semi-rural, low to low-middle income, Caucasian	RCT	Academic Competence[g]
Developmental Mentoring, Karcher, Davis, & Powell (2002)	Summer and school-year mentoring	5	1 Saturday/month, September–May; 8 hrs/day, 6 days/week for 2 weeks in the summer	26	Low-performing school, largely non-White	RCT	WRAT-3[h] Spelling
Experience Corps/ Book Buddies, Meier & Invernizzi (2001)	After-school tutoring	1	45 min/session, ~8 sessions/month, 5–6 months	56	Urban, low-income, at-risk students	RCT	PALS[i]
Start Making a Reader Today (SMART), Baker, Gersten, & Keating (2000)	After-school tutoring	1–2	30 min/day, 2 days/week, 2 years	84	Low-performing schools, at-risk students, largely non-White	RCT	Woodcock Reading Mastery, Expressive One Word Picture Vocabulary, and three researcher-developed measures
Howard Street Tutoring, Morris, Shaw, & Perney (1990)	After-school tutoring	2–3	1 hr/day, 2 days/week, October–May	60	Urban, low-income, low-achieving	RCT	Word Recognition, Spelling, and Basal Passage Reading
Fast ForWord, Slattery (2003)	After-school computer tutoring	3–5	100 min/day, 5 days/week, ~6 weeks	60	Urban, low-income	RCT	Yopp-Singer Test of Phoneme Segmentation, Qualitative Reading Inventory II
Challenging Horizons Program (CHP), Langberg et al. (2006)	After school	6–7	2 hrs/day, 4 days/week, one semester only	48	At-risk with behavior problems, largely non-White	RCT	Teacher ratings of academic progress
Mixed Academic Effects							
Teach Baltimore, Borman & Dowling (2006)	Summer	K–2	6 hrs/day, 5 days/week, 7 weeks/summer for up to 3 summers	686	Urban, low-income, largely non-White	RCT/ QED[j]	CTBS[k] Reading Comprehension and Vocabulary
Chicago Summer Bridge, Jacob & Lefgren (2004)	Summer	3, 6	3 hrs/day, 6 weeks	~5000	Urban, at-risk students, largely non-White	RDD[l]	ITBS[m] Math and Reading
Enhanced Academic Instruction, Black et al. (2008)	After school	2–5	~3hrs/week, between 70 to 120 days during first year	1828 Reading; 1961 Math	Low-income, largely non-White	RCT	SAT 10 Math and Reading[n]

(continued)

Table D1. Studies of OST programs that met WWC standards with or without reservations *(continued)*

Program and Study Details							
Brief Citation	**Program Type**	**Grades Studied[a]**	**Program Length**	**Sample Size (Analysis)**	**Sample Characteristics**	**Study Design**	**Academic Assessment Measure**
No Detectable Academic Effects							
SES, McKay et al. (2008), Ross et al. (2008); Muñoz, Potter, & Ross (2008)	After-school tutoring	K-12[o]	Varies by program	Varies by state	Low-performing schools	QED	State achievement tests
Leap Frog, McKinney (1995)	After-school tutoring	1–2	2 hrs/day, 2 days/week, 9 months	44 Reading; 47 Math	Rural, low-achieving, largely non-White	RCT	SAT 8 Reading and Math
Nurturing Development Partnerships (NDP), Udell (2003)	After-school tutoring	2	~1 hr/day, 2 days/week, 10 weeks	27	Low-income, at-risk students, largely non-White	QED	Woodcock-Johnson–Revised
L.A.'s BEST, Goldschmidt, Huang, & Chinen (2007)	After school	K–6	5 days/week	5662	Urban, low-income, high ELL	QED	Normal Curve Equivalent scores of CTBS[p], SAT 9[q], and CAT 6[r]
21st CCLC, U.S. Department of Education (2003); Dynarski et al. (2004); James-Burdumy et al. (2005)	After school	K–8	2.5–3 hrs/day, 4–6 days/week, 9 months	Elementary: 1748; Middle: 4068	Low-performing schools, low-income	RCT/ QED[s]	Student records, SAT 9
Youth Services—Child Care, Academic Assistance, Recreation, and Enrichment (YS—Care), Bissell et al. (2002)	After school	1–5	4 hrs/day	660 Reading; 672 Math	Urban, low-income, low-achieving	QED	SAT 9 Reading and Math

a. For summer programs, refers to the grade participating students exited prior to the commencement of the summer program.
b. The sample size in the KindergARTen evaluation varied by outcome. The size of the treatment group was either 72 or 73 students for four out of five of the literacy outcomes tested and was 60 students for the Development Reading Assessment (DRA). The size of the control group varied from 23 to 27 students across the five outcomes.
c. RCT stands for randomized controlled trial.
d. Center on Teaching & Learning. (n.d.). *DIBELS data system*. Eugene, OR: University of Oregon. Retrieved May 29, 2009, from https://dibels.uoregon.edu/.
e. Beaver, J., & Varter, M. (n.d.). Developmental reading assessment (2nd ed.). Lebanon, IN: Pearson. Retrieved May 29, 2009, from http://www.pearsonschool.com/.
f. Gates-MacGinitie Reading Tests. (2000). *GMRT validity and reliability statistics*. Itasca, IL: Riverside Publishing.
g. Academic competence is a composite variable based on the Woodcock-Johnson–Revised and parent and teacher ratings. Woodcock, R. W., & Johnson, M. B. (1990). *Woodcock-Johnson Psychoeducational Battery—Revised: Tests of Achievement*. Allen, TX: DML Teaching Resources.
h. Jastak, S., & Wilkinson, G. (1994). *Wide Range Achievement Test* (3rd ed.). San Antonio, TX: The Psychological Corporation.
i. Curry School of Education. (n.d.). *Phonological Awareness Literacy Screening*. Charlestown, VA: University of Virginia. Retrieved May 29, 2009, from http://pals.virginia.edu/.
j. QED stands for quasi-experimental design.
k. McGraw-Hill. (n.d.). *Comprehensive Test of Basic Skills*. Monterey, CA: MacMillan/McGraw-Hill. Retrieved May 29, 2009, from http://www.ctb.com/.
l. RDD stands for regression discontinuity design. In this case, students who were right above the cutoff for mandatory summer school were compared to students who were right below the cutoff and, therefore, had to attend summer school. Since all tests have some margin of error in judging students' academic abilities, students near the cutoff could be very similar in actual abilities. Furthermore, the test score pre–summer school and other baseline characteristics are controlled for when looking at differences in students the next year.
m. College of Education. (n.d.). *Iowa Test of Basic Skills*. Iowa City, IA: The University of Iowa. Retrieved May 29, 2009, from http://www.education.uiowa.edu/itp/itbs/.
n. The Stanford Achievement Test, 10th ed., abbreviated battery for either math or reading was given to students in the beginning and end of school year. For 2nd and 3rd graders, the Dynamic Indicators of Basic Early Literacy Skills also was used. Harcourt Assessment. (n.d.). *Stanford Achievement Test Series, Tenth Edition–Abbreviated Battery, Areas of Assessment*. San Antonio, TX: Author. Retrieved September 9, 2007, from http://harcourtassessment.com/HAIWEB/Cultures/en-us/Productdetail.htm?Pid=SAT10A&Mode=summary&Leaf=SAT10A_2; Harcourt Assessment. (2003). *Stanford Achievement Test Series, Tenth Edition–Spring Multilevel Norms Book*. San Antonio, TX: Author.; Harcourt Assessment. (2004). *Stanford Achievement Test Series, Tenth Edition–Technical Data Report*. San Antonio, TX: Author.
o. Grades included in SES could be any from kindergarten to 12th grade. Typically, grades included in state or district evaluations are those that are more often tested statewide with tests that are comparable across grade levels, usually 3rd through 8th.
p. McGraw-Hill. (n.d.). *Comprehensive Test of Basic Skills*. Monterey, CA: MacMillan/McGraw-Hill. Retrieved May 29, 2009, from http://www.ctb.com/.
q. Pearson. (n.d.). *The Stanford Achievement Test, 10th ed*. San Antonio, TX: Author. Retrieved May 29, 2009, from http://pearsonassess.com.
r. McGraw-Hill. (n.d.). California Achievement Test. Monterey, CA: MacMillan/McGraw-Hill. Retrieved May 29, 2009, from http://www.ctb.com/.
s. Results for elementary students are from an RCT study, whereas the middle school study is a QED.

Table D2. Studies and corresponding recommendations

Program and Study Details			Recommendations[a]				
Brief Citation	**Program Type**	**Grades Studied[b]**	**1. Align**	**2. Attendance**	**3. Individualize**	**4. Engage**	**5. Assess**
Positive Academic Effects							
KindergARTen, Borman, Goetz, & Dowling (2008)	Summer	K		√	√	√√	
Summer Reading Day Camp, Schacter & Jo (2005)	Summer	1		√	√	√	
Early Risers, August et al. (2001)	Summer and school-year mentoring	K–2	√	√	√√	√√	√√
Developmental Mentoring, Karcher, Davis, & Powell (2002)	Summer and school-year mentoring	5				√√	
Experience Corps/Book Buddies, Meier & Invernizzi (2001)	After-school tutoring	1			√		
SMART, Baker, Gersten, & Keating (2000)	After-school tutoring	1–2		√	√		
Howard Street Tutoring, Morris, Shaw, & Perney (1990)	After-school tutoring	2–3		√	√√		
Fast ForWord, Slattery (2003)	After-school computer tutoring	3–5		√	√√		
CHP, Langberg et al. (2006)	After school	6–7	√√	√	√√		√√
Mixed Academic Effects							
Teach Baltimore, Borman & Dowling (2006)	Summer	K–2	√	√	√	√√	√√
Chicago Summer Bridge, Jacob & Lefgren (2004)	Summer	3, 6	√√		√	√	√√
Enhanced Academic Instruction, Black et al. (2008)	After school	2–5	√	√√	√√	√√	√√
No Detectable Academic Effects							
SES, McKay et al. (2008); Ross et al. (2008); Muñoz, Potter, & Ross (2008)	After-school tutoring	K-12[c]	√		√		
Leap Frog, McKinney (1995)	After-school tutoring	1–2	√√	√	√		
NDP, Udell (2003)	After–school tutoring	2	√	√	√	√	
L.A.'s BEST, Goldschmidt, Huang, & Chinen (2007)	After school	K–6	√	√		√	√√
21st CCLC, U.S. Department of Education (2003); Dynarski et al. (2004); James-Burdumy et al. (2005)	After school	K–8	√	√	√	√	
YS-CARE, Bissell et al. (2002)	After school	1–5	√	√		√	√

a. Indicates relevance of recommendation to program operation. "√√" indicates high relevance; "√" indicates lower relevance.

b. For summer programs, refers to the grade participating students exited prior to the commencement of the summer program.

c. Grades included in SES could be any from kindergarten to 12th grade. Typically, grades included in state or district evaluations are those that are more often tested statewide with tests that are comparable across grade levels, usually 3rd through 8th.

In the remainder of this appendix, we summarize the evidence relevant to each of the panel's recommendations. First, we briefly describe the level of evidence supporting each recommendation. Next, we provide a brief description of the characteristics and results of the studies that support each recommendation, the practices described in those studies, and the degree to which they align with the panel's recommendations.

In general, each description first describes the relevant studies that produced positive academic effects. Next, we review the studies that showed mixed effects (positive results in only some subgroups or, in the case of one study that used a mixed design, positive results from the quasi-experimental portion of the study but not the experimental portion). The studies that showed no positive effects on academic outcomes are described next, followed by supplemental evidence from studies that either were not eligible for WWC review or did not meet WWC standards.

Recommendation 1. Align the OST program academically with the school day

Level of evidence: Low

The level of evidence for this recommendation is *low*. There is no direct evidence that practices outlined in this recommendation contribute to improved academic outcomes. Although it was common for programs to include some components of the panel's recommendations, none tested the effectiveness of this recommendation individually, only in combination with the other components of OST programs. In the panel's opinion, collaboration can improve academic outcomes and in the studies reviewed for this guide, two independent evaluators recommended that collaboration between in-school time and OST be strengthened if possible.[175] However, we fully acknowledge that more research is required to explore whether there is a connection between collaboration and positive academic outcomes in practice.

Summary of evidence

Fifteen OST programs endeavored to collaborate with school-based staff or initiatives,[176] but, in general, these efforts were not core components of the programs, and three programs expressed difficulty or reluctance to coordinate more fully.[177] Of the 11 programs with studies that met WWC standards with or without reservations,[178]

175. Schacter and Jo (2005). Center for Applied Linguistics (1994) suggested the use of more collaboration when appropriate.

176. CHP—Langberg et al. (2006); Early Risers—August et al. (2001); Enhanced Academic Instruction—Black et al. (2008); Teach Baltimore—Borman and Dowling (2006); Chicago Summer Bridge—Jacob and Lefgren (2004); L.A.'s BEST—Goldschmidt, Huang, and Chinen (2007); YS-CARE—Bissell et al. (2002); 21st CCLC—U.S. Department of Education (2003); Leap Frog—McKinney (1995); NDP—Udell (2003); SES—McKay et al. (2008); SES—Ross et al. (2008); SES—Muñoz, Potter, and Ross (2008); Title I supplementary education—Borman (1997); TASC—Reisner et al. (2004); Project Adelante—Center for Applied Linguistics (1994); After school tutoring—Leslie (1998).

177. In James-Burdumy et al. (2005), the authors noted that 21st CCLC programs struggled to effectively coordinate homework help with the school; and in U.S. Department of Education (2003), 21st CCLC programs were found to be supportive but not "integrated" (p. 39) with the school. In Project Adelante (Center for Applied Linguistics 1994), program directors recommended closer coordination with school-day staff to collect data and share information on student progress but were concerned about the appropriateness of the school-day curriculum for the students that their program served. Similarly, Morris, Shaw, and Perney (1990) expressed reluctance to align their after-school tutoring to the school curriculum given that they observed that their students' classroom instruction was often above their current reading levels.

178. CHP—Langberg et al. (2006); Early Risers—August et al. (2001); Enhanced Academic Instruction—Black et al. (2008); Teach Baltimore—Borman and Dowling (2006); Chicago Summer Bridge—Jacob and Lefgren (2004); L.A.'s

only 3 documented practices that closely corresponded to the panel's recommendations: CHP, Leap Frog, and Chicago Summer Bridge (see Table D3).[179] In CHP and Leap Frog, coordination between schoolteachers and OST instructors was frequent and structured.[180] Content and skills taught during OST were intentionally designed to support students during their school-day instruction. CHP showed positive effects and Leap Frog did not.[181] The purpose of Chicago Summer Bridge was to help students achieve proficiency on state examinations that they had not mastered during the school year. Because it was a summer school program, coordination with individual teachers was limited, but the curriculum was designed by the district with the express purpose of helping students meet state standards and closely linked to that goal. It had significant persistent effects on both math and reading for 3rd graders but not for 6th graders.[182]

The remaining eight programs included some components similar to the action steps for this recommendation, but the nine studies of the programs indicated that the degree of coordination was much less, or not enough information was provided to determine the level of alignment between programs.[183] Of these, one program showed positive effects,[184] two showed mixed effects,[185] and five showed no detectable academic effects.[186] Although more of these programs failed to demonstrate effectiveness, Table D2 shows that there were seven effective programs that did not attempt coordination with schools. Given the absence of a clear pattern of effectiveness based on the level of coordination with schools and the small sample of programs with high levels of coordination, the panel decided that the level of evidence was *low*.

Positive evidence for alignment between in-school time and OST

Two small to medium randomized controlled trials of after-school programs, CHP and Early Risers, attempted to coordinate with the schools that their students attended and showed positive effects,[187] but only in CHP did its coordination practices seem to be both similar to the specific action steps recommended by the panel and an important part of the overall program.[188]

Langberg et al. (2006) used a randomized controlled trial to study small group CHP, which provided after-school academic remediation and study skills training for 6th and 7th graders with a combination of learning and behavior problems. The program showed no statistically significant

BEST—Goldschmidt, Huang, and Chinen (2007); YS-CARE—Bissell et al. (2002); 21st CCLC—U.S. Department of Education (2003); Leap Frog—McKinney (1995); NDP—Udell (2003); SES—McKay et al. (2008); SES—Ross et al. (2008); SES—Muñoz, Potter, and Ross (2008).

179. CHP—Langberg et al. (2006); Chicago Summer Bridge—Jacob and Lefgren (2004); Leap Frog—McKinney (1995).

180. CHP—Langberg et al. (2006); Leap Frog—McKinney (1995).

181. Ibid.

182. Jacob and Lefgren (2004).

183. Early Risers—August et al. (2001); Enhanced Academic Instruction—Black et al. (2008); Teach Baltimore—Borman and Dowling (2006); L.A.'s BEST—Goldschmidt, Huang, and Chinen (2007); YS-CARE—Bissell et al. (2002); 21st CCLC—U.S. Department of Education (2003); NDP—Udell (2003); SES—McKay et al. (2008); SES—Ross et al. (2008); SES—Muñoz, Potter, and Ross (2008).

184. Early Risers—August et al. (2001).

185. Enhanced Academic Instruction—Black et al. (2008); Teach Baltimore—Borman and Dowling (2006).

186. L.A.'s BEST—Goldschmidt, Huang, and Chinen (2007); YS-CARE—Bissell et al. (2002); 21st CCLC—U.S. Department of Education (2003); NDP—Udell (2003); SES—McKay et al. (2008); SES—Ross et al (2008); SES—Muñoz, Potter, and Ross (2008).

187. Langberg et al. (2006) had a sample size of 48 students; August et al. (2001) had 201 students.

188. Langberg et al. (2006).

Table D3. Studies of programs cited in recommendation 1 that met WWC standards with or without reservations

Program and Study Details				Strategies			
Brief Citation	**Program Type**	**Grades Studied[a]**	**Level of Relevance[b]**	**OST Coordinator Maintains Relations with School**	**School Staff Communicate with OST Program**	**OST Instruction Is Coordinated with School Goals**	**School Helped Identify Staff for OST Programs**
Positive Academic Effects							
Early Risers, August et al. (2001)	Summer and school-year mentoring	K–2	√	To support classroom teachers			
CHP, Langberg et al. (2006)	After school	6–7	√√	Weekly	Classroom teacher identified student problem areas	District determined academic content	
Mixed Academic Effects							
Teach Baltimore, Borman & Dowling (2006)	Summer	K–2	√			Reported alignment with school-year curricula	
Chicago Summer Bridge, Jacob & Lefgren (2004)	Summer	3, 6	√√			District designed curricula; intended to help students pass state tests	Principals selected teachers for summer program
Enhanced Academic Instruction, Black et al. (2008)	After school	2–5	√	Part-time OST coordinator at each site			Majority of OST instructors teach at school
No Detectable Academic Effects							
SES, McKay et al. (2008); Ross et al. (2008); Muñoz, Potter, & Ross (2008)	After-school tutoring	K–12[c]	√	Varies	Varies	Varies	Varies
Leap Frog, McKinney (1995)	After-school tutoring	1–2	√√	Weekly written comments to teachers	Teachers sent student assignments		
NDP, Udell (2003)	After-school tutoring	2	√			Reported alignment with school-day learning	
L.A.'s BEST, Goldschmidt, Huang, & Chinen (2007)	After school	K–6	√	Informal	Principal buy-in required before program starts		
21st CCLC, U.S. Department of Education (2003); Dynarski et al. (2004); James-Burdumy et al. (2005)	After school	K–8	√	Varies		Varies	Varies
YS-CARE, Bissell et al. (2002)	After school	1–5	√			Reported alignment with school-day curricula	

a. For summer programs, refers to the grade participating students exited prior to the commencement of the summer program.

b. Indicates relevance of recommendation to program operation. "√√" indicates high relevance; "√" indicates lower relevance.

c. Grades included in SES could be any from kindergarten to 12th grade. Typically, grades included in state or district evaluations are those that are more often tested statewide with tests that are comparable across grade levels, usually 3rd through 8th.

effects on teacher ratings of academic progress because of the small sample size, but the effect size (calculated using Hedges's *g*[189]) was positive at 0.45.[190] In order to acknowledge meaningful effects regardless of sample size, the panel followed WWC guidelines and considered a positive statistically significant effect or an effect size greater than 0.25 as an indicator of improved outcomes.

CHP was implemented as an alternative to the district-run after-school program in Columbia, South Carolina.[191] Sixth- and 7th-grade students were recruited based on poor performance on state exams. The first group was randomly assigned to participate in CHP the first semester, and the second group began participation in the second semester of the same year. The program staff undertook considerable efforts to maintain communication with, and support the services of, the school day to improve students' behavior, organization, and academic achievement. Districts determined the content of the program, which ensured that it was aligned with the district curriculum. Students in the program received extra privileges for correctly recording their homework assignments and keeping their school materials organized, encouraging the development of skills for school success. Students in various groups were required to demonstrate the use of learned skills at school, and interventions targeted problem areas identified by teachers. Each staff member in the OST program was assigned to maintain weekly contact with two teachers regarding upcoming assignments and classroom behavior.[192]

A study of Early Risers, a two-year tutoring and mentoring program that recruits children with early onset aggressive behavior at the end of kindergarten, showed positive academic effects but utilized different methods of collaboration than those discussed in this recommendation.[193] Program staff met regularly with classroom teachers to review student progress and discuss instructional practices, but they served more as a resource to teachers than vice versa. The study demonstrated significant increased academic competence for the treatment group relative to a comparison group, but behavioral effects were not significant.[194]

Mixed evidence for alignment between in-school time and OST

Three other larger studies of programs with varying degrees of school coordination had mixed yet potentially encouraging findings.[195] The first study with mixed effects was a regression discontinuity study of Chicago Summer Bridge, a mandatory summer school program for students in grades 3 and 6 who failed to meet standards for promotion on state tests.[196] The study compared the achievement gains of

189. See Appendix B of WWC Procedures and Standards Handbook.

190. Langberg et al. (2006).

191. Ibid.

192. Ibid.

193. August et al. (2001).

194. Ibid. Academic competence is a composite measure constructed by the authors using the Woodcock-Johnson Tests of Achievement–Revised (the broad reading and applied problems domains) and several components of the teacher and parent ratings. The teacher ratings included in the composite were the Learning Problems scale from the Behavioral Assessment System for Children–Teacher Rating Scale, the Cognitive Competence scale from the Teacher's Scale of Child's Actual Competence and Social Acceptance, and the Concentration Problems scale from the Teacher Observation of Classroom Adaptation–Revised. The parent rating was the Concentration Problems scale from the Parent Observation of Classroom Adaptation used to assess behavior at home.

195. Borman and Dowling (2006); Jacob and Lefgren (2004); Black et al. (2008).

196. Jacob and Lefgren (2004). The standards for promotion also apply to 8th graders in Chicago but only 3rd and 6th graders were included in the impact study.

students with June test scores just above and just below the cutoff for mandatory summer school in order to potentially be promoted to the next grade.[197] It showed positive effects on student achievement in both reading and math among the districts' lowest-performing 3rd-grade students, but not among 6th graders. In this program, coordination was fairly strong as the summer program was specifically designed to help students achieve the academic standards they failed to meet during the school year. Instructors used a centrally designed curriculum distributed by the district with lesson plans included, which emphasized the basic skills needed to pass the test at the end of the summer and be promoted.[198] Summer instructors were selected by principals.[199]

In two additional studies, alignment with schools was less strong or not described in the same detail. The second of the three studies with mixed effects was of Enhanced Academic Instruction in After-School Programs, which separately evaluated math and reading programs designed to improve the academic instruction in after-school instruction for children in grades 2 through 5.[200] Students were randomly assigned to receive the regular after-school-day offering (the comparison group) or either one of the structured enhanced curricula (Harcourt School Publishers' Mathletics at centers in the math study or Success for All Foundation's Adventure Island program at the reading centers). Managing sites were provided with funding for a part-time district coordinator who was familiar with the district and students served and who coordinated several management tasks associated with the implementation of the program. Three-quarters of the program instructors were classroom teachers from the school day in the school in which the program was located. In some cases, the program staff worked with classroom teachers and principals to identify eligible students. The curricula were tied to academic standards, but some participating instructors reported inconsistencies between the strategies and vocabulary used for instruction during the school day and those used during the enhanced OST program.

The enhanced program was characterized by increased instructional time and specific strategies regarding staffing, support for staff, and student attendance efforts that distinguished it from the regular program. The evaluation found a significant impact on math scores with an effect size of 0.06 and no significant impacts on reading scores.[201] Program impacts were measured relative to students who participated in a regularly offered after-school program that typically consisted of homework help or unstructured direct instruction. This study is not a general evaluation of the impacts of an after-school program; instead, it is a test of a particular program type—structured curricula in math or reading versus more typical after-school programming. Although the available evidence suggests that coordination with schools was a component of both the reading and math programs, the study does not suggest that these were a major component of either program. In general, program effects

197. Students took the state exam again at the end of the summer program. If they failed to meet standards a second time, they would be retained in the same grade level. Between the spring of 1997 and the spring of 1999, 43 percent of 3rd graders and 31 percent of 6th graders failed in either reading or math the first time in June. Of those who failed the first time, 48 percent of 3rd graders and 39 percent of 6th graders were ultimately retained (Jacob and Lefgren 2004).

198. Jacob and Lefgren (2004); supplementary information from Stone et al. (2005); Roderick, Jacob, and Bryk (2004).

199. Supplementary information from Roderick, Jacob, and Bryk (2004).

200. Black et al. (2008).

201. Based on classroom teacher surveys, the program was not associated with increased incidents of behavior problems or reduced homework completion during the school day.

cannot be attributed to specific program components, and, in this case in particular, school coordination efforts appear to be an equally minor component of both the math and reading studies.

Finally, a large study evaluated Teach Baltimore, a seven-week summer program designed to counter the "summer slide" effect[202] using undergraduate students as instructors for students in high-poverty schools, beginning in kindergarten and 1st grade and continuing over three summers.[203] The curricula were focused primarily on reading instruction and designed to align with what students were learning in their school-year classrooms. The evaluators noted that this likely helped convey to teachers and principals the potential benefits of the program, but there was not enough detail in the study to determine the extent of alignment with the school year. Instructors also maintained communication with their students during the school year.

However, the randomized controlled trial found no positive effects on reading that included all students assigned to the treatment group. The authors suggest that this result could be partially explained by the poor attendance of participating students, and they also include a quasi-experimental analysis of the average effect on students who attended more frequently.[204] Frequent attendance was defined as having above average attendance (above 39 percent) for at least two out of the three summers. A total of 202 treatment students (46 percent of the original treatment group) were compared to members of the control group who were weighted by their likely predicted probability of being a frequent attendee if they had been in the treatment group.[205] The analysis found statistically significant effects of the program for frequent attendees on their total reading scores from the Comprehensive Test of Basic Skills, 4th ed., and its two subtests: Vocabulary and Reading Comprehension.[206]

Inconclusive and cautionary evidence for alignment between in-school time and OST

Evaluations of six other after-school programs showed no significant positive academic effects, despite efforts by programs to coordinate to some degree with the in-school instruction.[207] However, the amount of coordination in practice in all but one of these programs appears to be relatively low. The exception is Leap Frog, an after-school tutoring program in which teachers and tutors have formalized mechanisms for frequent communication. The other five programs are the NDP, YS-CARE, L.A.'s BEST, 21st CCLC, and SES.

A small, randomized controlled trial study of Leap Frog, an after-school program providing one-on-one tutoring and homework assistance to 1st and 2nd graders, found

202. "Summer slide" refers to the effect, broadly recognized in the research, by which the achievement gap for low-income and minority students grows during the summer and stays constant while school is in session. See, for example, Heyns (1978); Alexander and Entwisle (1996); Cooper et al. (1996).

203. Borman and Dowling (2006).

204. Ibid.

205. Frequent attendance was predicted based on a model that included a baseline measure of a student's regular school-year attendance, whether a student moved during the course of the study, and the site that a control student would have attended if he or she had been in the treatment group. It is not known whether the frequent attendees were similar to the weighted sample of control group students in terms of their initial reading levels or other characteristics.

206. Effect sizes were 0.30 for total reading, 0.32 for vocabulary, and 0.28 for comprehension.

207. Udell (2003); McKinney (1995); Bissell et al. (2002); Goldschmidt, Huang, and Chinen (2007); U.S. Department of Education (2003); Dynarski et al. (2004); James-Burdumy et al. (2005); Ross et al. (2008); Muñoz, Potter, and Ross (2008).

no academic effects.[208] In the program, university student-volunteers tutored for one-hour sessions twice a week using work sent by the students' classroom teacher. Teachers and tutors communicated using a folder, which the tutee carried from school to the OST program. Teachers sent the tutors assignments or content areas to focus on, and tutors were required to send weekly comments to the classroom teacher about the tutoring sessions.[209]

A small quasi-experimental study of the NDP program, which provided one-on-two or one-on-one reading tutoring by undergraduate tutors with 2nd-grade students after school, found no effects on reading compared to a comparison group that received small group activities not related to literacy.[210] Although the author reported that tutors used techniques that supplemented the school-day instruction, no additional details were offered and cooperation with the school was not described as a key component of the program.[211]

A large evaluation of the YS-CARE afterschool program, which targeted California students with parents transitioning off welfare, found positive but insignificant findings in the first year.[212] The analysis used matched pairs to measure the effectiveness of the program.[213] Although YS-CARE program objectives included reinforcing the school curriculum, the authors did not describe the specific activities undertaken to promote collaboration, nor did they report on the actual level of cooperation implemented except for one survey question.[214] Sixty-four percent of surveyed staff reported that getting cooperation from schools was "not too difficult."[215]

In a quasi-experimental study of L.A.'s BEST, the authors compared treated students (those attending a minimum of four days per month) to two matched comparison groups (those who opted not to participate in the same school and those in similar schools that did not offer a program) and found no consistent positive effects.[216] The program was intended to raise academic achievement and reduce crime among students in high-crime, high-poverty neighborhoods in Los Angeles County. Another study used qualitative methods to gauge the implementation of L.A.'s BEST at six representative sites, identified by the main program office.[217] The researchers conducted observations, interviews, and focus groups of key stakeholders. Most principals reported cooperative working relationships with OST staff.[218] Although participating staff made some efforts to collaborate with the school day, including attending teacher meetings to promote the program, requiring principal support before a program was initiated at a school, and communicating regularly with teachers, these efforts were informal

208. McKinney (1995) had 47 students with pre- and posttests in math and 44 in reading.

209. Ibid.

210. Udell (2003) had 27 students in the analysis sample. The following subtests of the Woodcock Johnson–Revised were used to measure reading achievement: Word Attack, Letter-Word Identification, and Passage Comprehension.

211. Ibid.

212. Bissell et al. (2002). The program reached 567 students in grades 1 to 5 at 28 schools.

213. There were no baseline differences in the test scores of the treatment and comparison groups at the outset of the study, but there were some differences in student ethnicity. Also, some students in the comparison group reported that they did not attend because of responsibilities for caring for siblings, and it was not shown whether the treatment and comparison groups were initially equivalent in this way.

214. Bissell et al. (2002).

215. Ibid.

216. Despite the matching attempts, the second group (students at non–L.A.'s BEST schools) was not comparable in baseline achievement levels in math, so the focus is on the analysis with the comparison group from nonparticipating students at the same school (Goldschmidt, Huang, and Chinen 2007).

217. Huang et al. (2007).

218. Ibid.

and not necessarily implemented consistently across sites.[219]

A national evaluation of the 21st CCLC after-school program showed no consistent positive academic effects among elementary or middle school students. Elementary students were randomly assigned to either treatment or comparison groups in 26 centers across 12 districts. Participating elementary students reported feeling safer than the comparison group students reported feeling, but they also experienced increased incidents of negative behavior during the school day.[220] A matched pair, quasi-experimental analysis of the program's impacts on middle school students in 61 centers in 32 districts found similar results for behavior, although participating students did not report feeling safer than control students reported feeling.[221]

The 21st CCLC has awarded grants to support after-school programs with an academic component (including homework help) since 1998. The specifics of the program vary considerably by site. Although, on average, the programs were not found to be effective at improving academic achievement, the study reported that some OST coordinators would acquire lists of failing students from classroom teachers to identify which OST participants needed extra attention. Centers reported communicating regularly with host schools in setting the curricula, goals, and objectives and in providing feedback on students. Many principals of host schools also were actively involved in the planning of the program.[222]

Two quasi-experimental studies of SES in various cities in Tennessee and in Louisville, Kentucky, found overall null effects on achievement growth using matched pairs to measure the effects of individual providers.[223] In the study of SES provision in Tennessee, 36 percent of principals reported that SES providers communicated frequently with them, but in a similar study in Louisville, Kentucky, none of the surveyed principals reported frequent communication. Similarly, 34 percent of surveyed teachers in Tennessee reported frequent contact with SES providers compared to 7 percent in Louisville.[224] Both studies involved relatively small samples of principals (50 and 19, respectively) and teachers (128 and 56, respectively).

Supplemental evidence from other sources

Five other sources provided examples of practices for in-school and out-of-school alignment even though they either did not meet the OST protocol for inclusion or failed

219. Ibid.

220. James-Burdumy et al. (2005).

221. Dynarski et al. (2004).

222. U.S. Department of Education (2003).

223. Ross et al. (2008); Muñoz, Potter, and Ross (2008).

224. Furthermore, in Louisville, 72 percent of teachers reporting having no contact at all with SES providers, compared to 21 percent in Tennessee. Nevertheless, when teachers in Louisville were asked whether providers "adapted the tutoring services to this school's curriculum," 7 percent strongly agreed and 34 percent agreed. In Tennessee, 30 percent of teachers strongly agreed and 40 percent agreed. Very similar responses were given when asked if providers "integrated the tutoring services with classroom learning activities" (43 percent agreed or strongly agreed in Louisville and 68 percent did so in Tennessee) or "aligned their services with state and local standards" (41 percent agreed or strongly agreed in Louisville and 71 percent did so in Tennessee).

A similar survey was done in Virginia but included parents, SES providers, and SES coordinators in participating school divisions (McKay et al. 2008): 34 percent of SES coordinators (N = 41) agreed or strongly agreed that providers "adapted the tutoring services to this school's curriculum"; 24 percent agreed or strongly agreed that providers "integrated the tutoring services with classroom learning activities"; and 66 percent agreed or strongly agreed that providers "aligned their services with state and local standards." Of the 111 representatives from 16 SES providers, 28 percent reported frequent communication with teachers.

to meet WWC standards.[225] A study of the level of coordination between classroom instruction and Title I supplementary instruction found that curricular congruence (e.g., both the classroom and the supplemental instructor used the same curricular materials or content or taught at the same instructional level) was correlated with higher reading achievement in 1st-grade classrooms.[226]

The evaluation of The After-School Corporation (TASC) showed consistently positive effects for math, but not for reading.[227] Eighty-six percent of principals reported that the "after-school program solicits input from the principal and teachers on skills in which students need help and incorporates these topics into after-school activities."[228] Fifty-one percent of principals reported that OST instructors "coordinate homework assistance with classroom teachers," and the same percentage reported that the program coordinator "serves on a school planning team."[229] Almost as frequently, however, principals cited the following areas as in need of attention: "coordination/integration with the school curriculum" (41 percent) and "coordination with the school" (31 percent).[230]

In Project Adelante, a summer program and Saturday academy for Hispanic students, the project coordinator sent weekly progress reports to participating students' school counselors, coordinated a parent night and invited classroom teachers, and received data on English as a Second Language (ESL) students and academic achievement scores from the district.[231] In a study of an after-school tutoring program for rural middle school students, tutors met with classroom teachers prior to each tutoring session to discuss the students' homework and problem areas in class.[232] Finally, in a newsletter documenting OST programs' attempts to create connections with the school day, authors cite strategies including sharing common planning periods with school-day teachers, attending workshops with teachers, asking teachers to help develop programs and deliver instruction, and sharing homework completion logs with classroom teachers.[233]

Recommendation 2. Maximize student participation and attendance

Level of evidence: Low

The panel judged the level of evidence supporting this recommendation to be *low* because there is no conclusive evidence that following the action steps in this recommendation will lead to higher attendance or increased academic achievement. Given the voluntary nature of most OST programs and other barriers discussed in this recommendation, regular attendance appears a difficult goal for many programs to reach. Some programs have devoted considerable resources and seem to have made efforts to implement the action steps described in this recommendation and still have trouble getting students to attend regularly (see Table D4).

225. Borman (1997); Reisner et al. (2004); Center for Applied Linguistics (1994); Leslie (1998); Bouffard, Little, and Weiss (2006).

226. Borman (1997). This study was ineligible for review because the supplementary instruction took place during the school day. Analysis was limited to students in classrooms with two or more students receiving Title I supplementary instruction and at least two students not receiving it.

227. Reisner et al. (2004) could not be rated by WWC reviewers because it was not clear if the treatment and control groups were equivalent in achievement levels before the program began.

228. Reisner et al. (2004).

229. Ibid.

230. Ibid.

231. Center for Applied Linguistics (1994). This study was not eligible for review because it did not contain a comparison group.

232. Leslie (1998). This study was not eligible for review because it did not contain a comparison group.

233. Bouffard, Little, and Weiss (2006). This newsletter was not eligible for review because it was not a study of the effectiveness of these strategies.

Table D4. Studies of programs cited in recommendation 2 that met WWC standards with or without reservations

Study Details				Strategies for Recruiting and Promoting Attendance					
Brief Citation	**Program Type**	**Grade[a]**	**Average Attendance Rates[b]**	**Recruiting Students/ Targeting**	**Provide Snacks/ Meals**	**Located in School/ Transportation Provided**	**Enrichment and Other Activities[c]**	**Monitor Attendance**	**Incentive Systems**
Positive Academic Effects									
KindergARTen, Borman, Goetz, & Dowling (2008)	Summer	K	72% among students who attended at least for 1 day (55% overall)	Teachers, principals	Yes	Yes	Recreation, cultural		
Early Risers, August et al. (2001)	Summer and school-year mentoring	K–2	50% averaged across different program components[d]	Teachers	Yes	Yes	Recreation, cultural, interpersonal	Yes	
Summer Reading Day Camp, Schacter & Jo (2005)	Summer	1		Target schools	Yes	Yes	Recreation, cultural		
SMART, Baker, Gersten, & Keating (2000)	After-school tutoring	1–2		Teachers		Yes			
Howard Street Tutoring, Morris, Shaw, & Perney (1990)	After-school tutoring	2–3		Teachers	Yes	Yes	Recreation		
Fast ForWord, Slattery (2003)	After-school computer tutoring	3–5		Students reading below grade level	Yes	Yes			
CHP, Langberg et al. (2006)	After school	6–7		Teachers, parents, student testing	Yes	Yes	Recreation	Yes	
Mixed Academic Effects									
Teach Baltimore, Borman & Dowling (2006)	Summer	K–2	39%, includes yearly no-shows	Target schools	Yes	Yes	Recreation, cultural	Yes	
Enhanced Academic Instruction, Black et al. (2008)	After school	2–5	77% math; 73% reading	School staff	Yes	Yes	Recreation	Yes	Yes
No Detectable Academic Effects									
L.A.'s BEST, Goldschmidt, Huang, & Chinen (2007)	After school	K–6	66% of participants were active[e]	Target schools, teachers	Yes	Yes	Recreation, cultural	Yes	
21st CCLC for elementary school students, Dynarski et al. (2004); U.S. Department of Education (2003)	After school	K–8	44% among students who attended at least 1 day[f]	Teachers	Yes	Yes	Recreation, cultural, interpersonal	Yes	Yes

(continued)

Table D4. Studies of programs cited in recommendation 2 that met WWC standards with or without reservations *(continued)*

Study Details				Strategies for Recruiting and Promoting Attendance					
Brief Citation	**Program Type**	**Grade[a]**	**Average Attendance Rates[b]**	**Recruiting Students/ Targeting**	**Provide Snacks/ Meals**	**Located in School/ Transportation Provided**	**Enrichment and Other Activities[c]**	**Monitor Attendance**	**Incentive Systems**
No Detectable Academic Effects *(continued)*									
Leap Frog, McKinney (1995)	After-school tutoring	1–2		Teachers, principals	Yes	Yes	Recreation, cultural		
YS-CARE, Bissell et al. (2002)	After school	1–5			Yes	Yes	Recreation, cultural, interpersonal		
NDP, Udell (2003)	After-school tutoring	2		School staff	Yes	Yes		Yes	Yes

a. For summer programs, refers to the grade participating students exited prior to the commencement of the summer program.

b. Studies with blank cells did not report any information on attendance rates.

c. Examples of recreational activities include soccer, karate, and dance. Cultural activities include music, arts, and field trips. Interpersonal activities include conflict management and relationship building.

d. August et al. (2001) calculated summer school attendance and family program attendance as the percentage of days attended out of total days offered over the course of two years. They took a simple average of these two attendance rates with a third "rate," which they used to measure the "percentage" of FLEX contact time each family received. FLEX contact time was meant to provide preventative case management as needed. Actual contact time ranged from 20 minutes to more than 5 hours total, excluding the initial 2-hour home visit to all participants. A full dosage of FLEX time was capped at 2 hours (based on the assumption of two more 1-hour contacts); 22 percent of families received the full dosage of FLEX time.

e. Active participation is defined as attending the program more than 36 days a year. This participation rate is from our calculations using the information in Table 3 in Goldschmidt, Huang, and Chinen (2007) from 1994 to 1997, the years included in their impact study. Their sample was restricted to schools with more than 20 students with program attendance information.

f. Estimated based on information in Table II.1 in Dynarski et al. (2004). Sample size is 980 students who attended an elementary school center for at least one day.

However, given that actual attendance is a precursor to an OST program's promoting student learning, the panel believes it is particularly important for programs to enhance their efforts to get students in the door.

Summary of evidence

The importance of emphasizing participation has been pointed out by many experts in OST.[234] Although it seems logical that students need to attend to receive the benefits of a program, no rigorous evidence demonstrates that the steps recommended here will lead to increased participation, and limited evidence indicates that academic achievement is increased through more exposure to OST programs. A meta-analysis of 53 OST studies by Lauer et al. (2004) found larger effect sizes in both math and reading for interventions that consisted of at least 45 hours of programming.[235] The panel believes that if a program is aligned academically with the school day (recommendation 1), provides engaging learning experiences (recommendation 3), and adapts instruction to individuals and groups (recommendation 4), greater exposure to that program will yield higher academic achievement.

Since a student's *actual* program attendance, as a percentage of hours of programming offered, is likely to be correlated with unobservable characteristics such as motivation or family circumstances, it is not advisable to draw causal conclusions from most studies on the relationship between attendance and outcomes. Four evaluations of programs met WWC standards with or without reservation for their academic impact studies and also looked at the possible relation between amount of program attendance and academic achievement.[236] Only one found a positive correlation between higher attendance and greater program effects.[237]

The other evidence that influences this recommendation is less direct. Fourteen programs had studies that discussed practices similar to the action steps recommended by the panel (such as using teachers to recruit students, locating within schools, offering snacks, and including enrichment activities) and also met WWC standards with or without reservations.[238] Of the 14, only 6 reported some information on attendance rates.[239] Even when programs reported attendance, it was not possible to isolate which, if any, components of the program affected attendance, forcing the panel to use its judgment regarding which practices contributed to increased attendance and improved academic outcomes. In terms of overall academic effects, 7 of the 14 programs showed positive

234. Cooper et al. (2000); Granger and Kane (2004); Lauver, Little, and Weiss (2004).

235. The meta-analysis also found that, on average, programs with high durations (more than 100 hours for math and 210 hours for reading) did not have effects significantly different from zero.

236. Teach Baltimore—Borman and Dowling (2006); Early Risers—August et al. (2001); L.A.'s BEST—Goldschmidt, Huang, and Chinen (2007); 21st CCLC—U.S. Department of Education (2003).

237. Teach Baltimore—Borman and Dowling (2006).

238. CHP—Langberg et al. (2006); Fast ForWord—Slattery (2003); Howard Street Tutoring—Morris, Shaw, and Perney (1990); SMART—Baker, Gersten, and Keating (2000); Summer Reading Day Camp—Schacter and Jo (2005); KindergARTen—Borman, Goetz, and Dowling (2008); Early Risers—August et al. (2001); Enhanced Academic Instruction—Black et al. (2008); Teach Baltimore—Borman and Dowling (2006); L.A.'s BEST—Goldschmidt, Huang, and Chinen (2007); YS-CARE—Bissell et al. (2002); 21st CCLC—U.S. Department of Education (2003); Leap Frog—McKinney (1995); NDP—Udell (2003).

239. Early Risers—August et al. (2001); KindergARTen—Borman, Goetz, and Dowling (2008); Enhanced Academic Instruction—Black et al. (2008); Teach Baltimore—Borman and Dowling (2006); L.A.'s BEST—Goldschmidt, Huang, and Chinen (2007); 21st CCLC—U.S. Department of Education (2003).

effects,[240] 2 showed mixed effects,[241] and 5 others showed no effects.[242] Despite the lack of consistent evidence linking the panel's suggestions to increased academic achievement, the panel believes these recommendations, faithfully implemented and taking into consideration the unique constraints and student populations of each program, can increase student attendance and, therefore, contribute to achievement gains.

Only one study provided direct evidence on increasing attendance. Black et al. (2008) randomly assigned students to either a less-structured business-as-usual after-school program or an enhanced math or reading program that included monitoring and incentive systems to increase attendance. Students in the enhanced program attended significantly more days than did control students.[243]

240. CHP—Langberg et al. (2006); Fast ForWord—Slattery (2003); Howard Street Tutoring—Morris, Shaw, and Perney (1990); SMART—Baker, Gersten, and Keating (2000); Summer Reading Day Camp—Schacter and Jo (2005); KindergARTen—Borman, Goetz, and Dowling (2008); Early Risers—August et al. (2001).

241. Teach Baltimore—Borman and Dowling (2006); Enhanced Academic Instruction—Black et al. (2008).

242. L.A.'s BEST—Goldschmidt, Huang, and Chinen (2007); YS-CARE—Bissell et al. (2002); 21st CCLC—U.S. Department of Education (2003); Leap Frog—McKinney (1995); NDP—Udell (2003).

243. Students in their math treatment group attended 12 days more over the course of the year compared to students in the regular program who attended 61 days on average. In their reading study, students attended 7 more days compared to the treatment group, which attended 64 days. Both of these differences are statistically significant at the 5 percent level and represent a 20 percent increase and 11 percent increase in days attended, respectively.

Four studies on the effects of attendance on achievement

As discussed in recommendation 1, a randomized controlled trial of Teach Baltimore, a summer school program, found no positive effects on reading for all participants, but the quasi-experimental evaluation found positive effects on students who attended frequently.[244] Although it is encouraging that there were effects among the frequent attendees, the fact that the average attendance rate across all three summers was only 39 percent and that only 46 percent of the original treatment group could be classified as frequent attendees is an important cautionary note as the Teach Baltimore program does include some elements that the panel recommends to encourage attendance. For example, staff in the program served lunch to all program participants during the seven-week summer program. After lunch, there was time for sports and enrichment activities such as music and drama and weekly field trips to museums and cultural events.

It also is important to note that three studies did not find higher impacts on academic achievement for higher attendees. The Early Risers program did find positive academic impacts overall, but students who were classified as receiving less than half of the "program dosage" improved at the same rate as those who received half or more.[245] The other two programs, 21st CCLC and L.A.'s BEST, failed to find academic impacts either overall or for higher attendees. The evaluations of both L.A.'s BEST and Early Risers used regression approaches to control for observable differences between high attendees and low attendees. However, unobserved

244. Borman and Dowling (2006). Frequent attendance was defined has having above average attendance (above 39 percent) for at least two out of the three summers. The average attendance rate for the program includes students who did not participate for an entire summer.

245. August et al. (2001).

characteristics may be driving the null results, and their analysis should not be interpreted as causal.

In the second- and third-year reports from the national study of 21st CCLC, fixed effects analysis was used to evaluate whether more frequent attendance had a positive impact on a wide variety of outcomes.[246] This analysis uses two years of data on the same students; therefore, time-invariant unobservable characteristics cannot be driving the results.[247] It tests whether the changes in an individual student's attendance are related to changes in outcomes; therefore, it depends on there being sufficient variation in both attendance and outcomes.[248] Only small insignificant marginal effects were found on year-end grades for both the elementary[249] and middle school samples.[250,251]

Goldschmidt, Huang, and Chinen (2007) found no positive effects for active participation in an L.A.'s BEST after-school program on achievement scores or growth in either reading or math, measured at the beginning of middle school after students had spent up to five years participating in L.A.'s BEST in elementary school.[252,253] In hierarchical linear models similar to those used to estimate the overall treatment effects, the authors also controlled for exposure to L.A.'s BEST (years of program attendance) and intensity of exposure (natural log of daily attendance rate in years attended). The estimated coefficients on these variables in all four models (levels and growth in both math and reading) were always small and never significantly different from zero.

It appears that the authors also examined the correlations of academic outcomes with either program exposure or intensity using only program participants. The magnitude of effects is not reported, and, overall, the results appear mixed. Both exposure and intensity are reported to be insignificant for reading achievement level at the beginning of middle school but marginally significant for reading growth.[254] Exposure is not found to have a significant effect on either math levels or growth, and intensity is reported to be significantly related to math levels but not to math growth.

Indirect evidence on recruitment and ways to encourage attendance

Other studies provided supplementary examples of *how* to promote attendance

246. Dynarski et al. (2004); James-Burdumy et al. (2005).

247. However, time-varying ones still could be responsible. The first-year report of 21st CCLC (Department of Education 2003) considered using statistical techniques with their middle school sample to account for the possibility that there could be unobservable factors responsible for influencing both attendance and academic outcomes, but they could not find a suitable instrumental variable that was both related to attendance but not independently related to academic outcomes. Mother's employment status was not correlated with program attendance.

248. James-Burdumy et al. (2005), p. 80.

249. Ibid., p. 83.

250. Dynarski et al. (2004), p. 131.

251. Nonlinear models were used to calculate the marginal effect of attending the program for 10 more days on both an average student with a low level of attendance (10 days a year) and a student who attended for 30 days. Neither case showed significant improvement in year-end grades in any subject whether in elementary or middle school.

252. Active participation was defined as attending at least 36 days a year. From 1994 to 1997, 66 percent of students who ever attended an L.A.'s BEST program during the course of a school year attended at least 36 days that year. The average number of days attended of all students from 1994 to 1997 was 72.

253. They ran the same models using a second comparison group consisting of matched students at non–L.A.'s BEST schools. However, despite the matching attempts, the second group was not comparable in baseline achievement levels in math, so we focus on the analysis with the first group.

254. $p<.10$

at OST programs. Examples that support the panel's recommendations appear in 14 programs that had studies that met WWC standards with or without reservations.[255] Seven of those programs had positive effects on academics,[256] two had mixed effects,[257] and five had no effect on academic achievement.[258] In general, this information should be interpreted cautiously: there is no direct evidence that the practices used by these programs were directly linked to improvements in either attendance or academic achievement, and many of the practices were observed both in programs that produced positive academic effects and in those that did not.

Table D4 compares several of the panel's suggestions for promoting attendance in OST programs to the components discussed by evaluators in studies of the 12 programs that provided evidence for this recommendation. Of the 9 studies that found positive or mixed academic treatment effects, 6 used teachers, principals, or school staff to recruit students.[259] Two programs targeted schools with particular characteristics,[260] and one randomly chose among all students reading below grade level.[261] All but one[262] provided snacks or meals, and all either took place in the students' school or provided transportation to students.[263] All but two[264] included some recreational component for participating students. Three also provided cultural components,[265] and one provided interpersonal development activities for students.[266] Four of the programs monitored attendance,[267] and one had an incentive system to promote attendance.[268]

In studies of the five programs that demonstrated no treatment effects on academic achievement, researchers highlighted many of the same components.[269] All but one program[270] relied on teachers, principals, and school staff to identify students for participation. All provided a snack and were either located in the students' schools or provided transportation to the program site.[271] Four of the programs provided recreational and cultural activities,[272] and two provided interpersonal activities.[273]

255. Langberg et al. (2006); Slattery (2003); Morris, Shaw, and Perney (1990); Baker, Gersten, and Keating (2000); Schacter and Jo (2005); Borman, Goetz, and Dowling (2008); August et al. (2001); Black et al. (2008); Borman and Dowling (2006); Goldschmidt, Huang, and Chinen (2007); Bissell et al. (2002); U.S. Department of Education (2003); McKinney (1995); Udell (2003).

256. Langberg et al. (2006); Slattery (2003); Morris, Shaw, and Perney (1990); Baker, Gersten, and Keating (2000); Schacter and Jo (2005); Borman, Goetz, and Dowling (2008); August et al. (2001).

257. Black et al. (2008); Borman and Dowling (2006).

258. Goldschmidt, Huang, and Chinen (2007); Bissell et al. (2002); U.S. Department of Education (2003); McKinney (1995); Udell (2003).

259. Langberg et al. (2006); Morris, Shaw, and Perney (1990); Baker, Gersten, and Keating (2000); Borman, Goetz, and Dowling (2008); August et al. (2001); Black et al. (2008).

260. Schacter and Jo (2005); Borman and Dowling (2006).

261. Slattery (2003).

262. Baker, Gersten, and Keating (2000).

263. Langberg et al. (2006); Morris, Shaw, and Perney (1990); Baker, Gersten, and Keating (2000); Schacter and Jo (2005); August et al. (2001); Black et al. (2008); Borman and Dowling (2006); Borman, Goetz, and Dowling (2008); Slattery (2003).

264. Slattery (2003); Baker, Gersten, and Keating (2000).

265. Schacter and Jo (2005); August et al. (2001); Borman and Dowling (2006).

266. August et al. (2001).

267. Langberg et al. (2006); August et al. (2001); Black et al. (2008); Borman and Dowling (2006).

268. Black et al. (2008).

269. Treatment effects refer to the overall academic program impact, not to whether the impact varied with level of attendance.

270. Bissell et al. (2002).

271. Goldschmidt, Huang, and Chinen (2007); Bissell et al. (2002); U.S. Department of Education (2003); McKinney (1995); Udell (2003).

272. Goldschmidt, Huang, and Chinen (2007); Bissell et al. (2002); U.S. Department of Education (2003); McKinney (1995).

273. Bissell et al. (2002); U.S. Department of Education (2003).

Three studies indicated that program staff monitored attendance,[274] and two documented providing incentives to increase attendance.[275]

Overall, only 6 of the 14 programs provide some information on attendance rates, and the information they provide is not all directly comparable.[276] Together, the studies suggest that given the evidence base, it is not possible to attribute causal effects on attendance to the strategies that the panel recommended. Furthermore, there is little evidence in the studies to suggest that the programs that show positive academic effects are doing something fundamentally different to increase program attendance. Nevertheless, the studies that report attendance rates highlight how difficult it is for programs to achieve full participation, implying the need for a recommendation from the panel on encouraging participation.

Supplemental evidence from other sources

Four additional studies that did not meet WWC standards looked at interventions that incorporated some parts of the action steps from this recommendation. The Building Education Leaders for Life (BELL) program, which was a summer program for students in grades 1–7, was purposefully located on school campuses.[277] The BELL organizers reported that obtaining and maintaining the school space was one of the most challenging aspects of running the program, yet each summer they were located in schools. The after-school tutoring projects run by TASC were similarly located in the schools attended by participants.[278] The evaluation of the TASC program found that projects also targeted the students most likely to benefit from the program, encouraged high student attendance, and achieved a median attendance rate of 85 percent.

Project Adelante provided supervised transportation during the summer to the college campus where tutoring, counseling, and mentoring services were provided to Latino middle and high school students.[279] Students in the target population were recruited from the regular school day by school staff. Program staff also were actively involved in promoting student attendance, first by requiring parents to sign a contract stating that they would support attendance, and then by following up with students who missed sessions.

The Broward County Boys and Girls Club, although not a school-based program, also promoted program attendance by providing incentives to students in the form of points that could be redeemed for field trips or events or used toward the purchase of books and supplies.[280]

274. Goldschmidt, Huang, and Chinen (2007); U.S. Department of Education (2003); Udell (2003).

275. U.S. Department of Education (2003); Udell (2003).

276. Borman, Goetz, and Dowling (2008); August et al. (2001); Black et al. (2008); Borman and Dowling (2006); Goldschmidt, Huang, and Chinen (2007); U.S. Department of Education (2003).

277. Capizzano et al. (2007). The randomized controlled trial evaluation of BELL by Chaplin and Capizzano (2006) did not meet WWC standards because it suffered from attrition greater than 20 percent and had not measured the initial achievement levels and could not demonstrate that the treatment and control groups were equivalent initially. Furthermore, the posttest achievement tests for students in the control group were administered at a different date than the treatment group and are, therefore, not directly comparable.

278. Reisner et al. (2004). This study could not be rated by WWC reviewers because it was not clear if the treatment and control groups were equivalent in achievement levels before the program began.

279. Center for Applied Linguistics (1994). This study did not meet standards because it was a qualitative evaluation of the program.

280. Brown (2002). This study was ineligible for review because it did not use a comparison group in the analysis.

In addition to these studies of interventions, a national survey by Public Agenda of a random sample of students and parents of school-age children explored what students do when they are not in school, and what students and parents want from out-of-school time.[281] The survey found that student participation is affected by access to and convenience of programs, as well as by the attractiveness of the services provided.

Recommendation 3. Adapt instruction to individual and small group needs

Level of evidence: Moderate

The panel judged the level of evidence supporting this recommendation to be *moderate*. Learning environments that are adaptive to individual and small group needs are widely believed to be effective in fostering achievement.[282] Within the context of OST, however, the literature is not definitive, and, in general, positive effects cannot be directly attributed to the use of the strategies outlined in this recommendation. Looking more closely at the actual implementation of practices related to this recommendation, however, there does appear to be a pattern of positive academic effects associated with programs that more closely correspond to this recommendation. Therefore, the panel believes OST programs can be more successful if they attempt to understand the academic needs of the students they serve and adapt their programs to those needs.

Summary of evidence

Of the 15 programs related to this recommendation with evaluations that met WWC standards with or without reservations,[283] 5 were judged to be in close correspondence with more than one aspect of this recommendation (see Table D5).[284] Of these, 4 had evaluations that found positive effects on academic achievement,[285] and one had mixed but potentially encouraging effects.[286] Of the other 10 programs,[287] 6 still showed positive or mixed effects on academics.[288]

281. Duffett et al. (2004).

282. See Slavin (2006) in general and Lauer et al. (2004) for OST programs in particular.

283. KindergARTen—Borman, Goetz, and Dowling (2008); Early Risers—August et al. (2001); Summer Reading Day Camp—Schacter and Jo (2005); Experience Corps—Meier and Invernizzi (2001); SMART—Baker, Gersten, and Keating (2000); Howard Street Tutoring—Morris, Shaw, and Perney (1990); Fast ForWord—Slattery (2003); CHP—Langberg et al. (2006); Teach Baltimore—Borman and Dowling (2006); Enhanced Academic Instruction—Black et al. (2008); Chicago Summer Bridge—Jacob and Lefgren (2004); Leap Frog—McKinney (1995); NDP—Udell (2003); 21st CCLC—U.S. Department of Education (2003); 21st CCLC—Dynarski et al. (2004); 21st CCLC—James-Burdumy et al. (2005); SES—McKay et al. (2008); SES—Ross et al. (2008); SES—Muñoz, Potter, and Ross (2008).

284. Early Risers—August et al. (2001); Howard Street Tutoring—Morris, Shaw, and Perney (1990); Fast ForWord—Slattery (2003); CHP—Langberg et al. (2006); Enhanced Academic Instruction—Black et al. (2008).

285. Howard Street Tutoring—Morris, Shaw, and Perney (1990); Early Risers—August et al. (2001); Fast ForWord—Slattery (2003); CHP—Langberg et al. (2006).

286. Enhanced Academic Instruction—Black et al. (2008).

287. KindergARTen—Borman, Goetz, and Dowling (2008); Summer Reading Day Camp—Schacter and Jo (2005); Experience Corps—Meier and Invernizzi (2001); SMART—Baker, Gersten, and Keating (2000); Teach Baltimore—Borman and Dowling (2006); Chicago Summer Bridge—Jacob and Lefgren (2004); 21st CCLC—U.S. Department of Education (2003); 21st CCLC—Dynarski et al. (2004); 21st CCLC—James-Burdumy et al. (2005); SES—McKay et al. (2008); SES—Ross et al. (2008); SES—Muñoz, Potter, and Ross (2008); Leap Frog—McKinney (1995); NDP—Udell (2003).

288. KindergARTen—Borman, Goetz, and Dowling (2008); Summer Reading Day Camp—Schacter and Jo (2005); Experience Corps—Meier and Invernizzi (2001); SMART—Baker, Gersten, and Keating (2000); Teach Baltimore—Borman and Dowling (2006); Chicago Summer Bridge—Jacob and Lefgren (2004).

Table D5. Studies of programs cited in recommendation 3 that met WWC standards with or without reservations

Program and Study Details				Strategies			
Brief Citation	**Program Type**	**Grades Studied[a]**	**Level of Relevance[b]**	**Use Assessments to Inform Teaching**	**One-on-One/ Small Group**	**Professional Development**	**Type of Staff Used**
Positive Academic Effects							
KindergARTen, Borman, Goetz, & Dowling (2008)	Summer	K	√	Yes		Initial and ongoing	Certified teachers and college student interns
Summer Reading Day Camp, Schacter & Jo (2005)	Summer	1	√		Small group for some activities		Certified teachers
Early Risers, August et al. (2001)	Summer and school-year mentoring	K–2	√√	Yes	Small group	Initial and ongoing	
Experience Corps/ Book Buddies, Meier & Invernizzi (2001)	After-school tutoring	1	√	Yes	One-on-one		Volunteers
SMART, Baker, Gersten, & Keating (2000)	After-school tutoring	1–2	√		One-on-one		Volunteers
Howard Street Tutoring, Morris, Shaw, & Perney (1990)	After-school tutoring	2–3	√√	Yes	One-on-one	Ongoing	Volunteers
Fast ForWord, Slattery (2003)	After-school computer tutoring	3–5	√√	Yes	One-on-one computer work		Certified teachers
CHP, Langberg et al. (2006)	After school	6–7	√√		Small group for some activities	Initial	Certified teachers and CHP specialists
Mixed Academic Effects							
Teach Baltimore, Borman & Dowling (2006)	Summer	K–2	√	Yes	Small group	Initial	College students
Chicago Summer Bridge, Jacob & Lefgren (2004)	Summer	3, 6	√				Certified teachers
Enhanced Academic Instruction, Black et al. (2008)	After school	2–5	√√	Yes	Small group	Initial and ongoing	Certified teachers
No Detectable Academic Effects							
SES, McKay et al. (2008); Ross et al. (2008); Muñoz, Potter, & Ross (2008)	After-school tutoring	K-12c	√		One-on-one		Varies
Leap Frog, McKinney (1995)	After-school tutoring	1–2	√		One-on-one	Initial	College students and volunteers
NDP, Udell (2003)	After-school tutoring	2	√	Yes	One-on-one	Initial and ongoing	College students
21st CCLC, U.S. Department of Education (2003); Dynarski et al. (2004); James-Burdumy et al. (2005)	After school	K–8	√		Varies from small to large groups		Varies

a. For summer programs, refers to the grade participating students exited prior to the commencement of the summer program.

b. Indicates relevance of recommendation to program operation. "√√" indicates high relevance; "√" indicates lower relevance.

c. Grades included in SES could be any from kindergarten to 12th grade. Typically, grades included in state or district evaluations are those that are more often tested statewide with tests that are comparable across grade levels, usually 3rd through 8th.

Of the four programs with lower levels of relevance and without detectable effects on academic achievement, two deserve special mention because they are the two major sources of federal funding for academically focused OST programs: 21st CCLC and SES, which are mandated as part of NCLB.[289] The national study of 21st CCLC programs found no positive academic effects for either elementary or middle school students.[290] However, implementation varied widely, and although some programs reported tutoring in small groups with fewer than 10 students, most programs did not seem to be providing direct or adaptive instruction that was geared to the individual needs of all their students. Although SES is a newer program relative to 21st CCLC and less often studied, it appears to be implemented typically as one-on-one or small group tutoring (again implementation varies widely), and the results from the states that have attempted to evaluate the effects of SES, as mandated by law, do not show significant impacts on state assessments.[291]

In summary, the evidence demonstrates positive effects associated with a total of eight programs that adapted instruction to individual and small groups to some degree[292] and mixed effects in three other programs;[293] however, because adapting instruction was always a component of a multicomponent intervention and because adapting instruction did not consistently demonstrate significant positive effects across every study reviewed,[294] the panel is cautious and acknowledges that the level of evidence is *moderate*.

Positive evidence for individualizing instruction in OST programs

The eight randomized controlled studies of OST programs that included individualized instruction and showed positive effects looked at after-school study skills programs, mentoring programs, summer programs, and literacy programs (either one-on-one with a tutor or with a computer), or some combination.[295] The grades studied were elementary in all programs except one,[296] and six out of the eight elementary school programs were for grades K–3. The sample sizes for all of these studies were relatively small; all but two of the nine had fewer than 100 students in their total analysis sample.[297]

The four programs judged to be in higher correspondence include two after-school tutoring programs (Howard Street Tutoring

289. Zimmer et al. (2007).

290. U.S. Department of Education (2003); Dynarski et al. (2004); James-Burdumy, Dynarski, and Deke (2007).

291. Tennessee—Ross et al. (2008); Kentucky—Muñoz, Potter, and Ross (2008); Virginia—McKay et al. (2008).

292. KindergARTen—Borman, Goetz, and Dowling (2008); Early Risers—August (2001); Summer Reading Day Camp—Schacter and Jo (2005); Experience Corps—Meier and Invernizzi (2001); SMART—Baker, Gersten, and Keating (2000); Howard Street Tutoring—Morris, Shaw, and Perney (1990); Fast ForWord—Slattery (2003); CHP—Langberg et al. (2006).

293. Enhanced Academic Instruction—Black et al. (2008); Teach Baltimore—Borman and Dowling (2006); Chicago Summer Bridge—Jacob and Lefgren (2004).

294. Leap Frog—McKinney (1995); NDP—Udell (2003); 21st CCLC—U.S. Department of Education (2003); 21st CCLC—Dynarski et al. (2004); 21st CCLC—James-Burdumy, Dynarski, and Deke (2007); SES—McKay et al. (2008); SES—Ross et al. (2008); SES—Muñoz, Potter, and Ross (2008).

295. KindergARTen—Borman, Goetz, and Dowling (2008); Early Risers—August et al. (2001); Summer Reading Day Camp—Schacter and Jo (2005); Experience Corps—Meier and Invernizzi (2001); SMART—Baker, Gersten, and Keating (2000); Howard Street Tutoring—Morris, Shaw, and Perney (1990); Fast ForWord—Slattery (2003); CHP—Langberg et al. (2006).

296. Langberg et al. (2006).

297. Schacter and Jo (2005) had 118 students in their first follow-up of participants in a summer reading day camp, and August et al. (2001) had 201 students in their summer program with school-year mentoring.

and Fast ForWord), an after-school study skills program (CHP), and a summer program with mentoring. August et al. (2001) studied Early Risers, a summer school and school-year mentoring program for 1st and 2nd graders. Program staff members monitored the academic, behavioral, and social progress of each student. They assessed students after each session by rating aspects of their performance such as engagement and task completion. Staff were trained to do the student assessment and monitoring required by Early Risers through preprogram training, manuals, and ongoing support. The study demonstrated significant increased academic competence for the treatment group relative to a comparison group.

Langberg et al. (2006) studied CHP, which provided academic remediation in small groups for 6th and 7th graders with a combination of learning and behavior problems. CHP limited class sizes to 12 students per instructor but also broke classes into smaller groups of 3 students for skill development exercises. The staff members were provided with training and manuals to guide their instruction. The program showed no statistically significant effects on teacher ratings of academic progress because of the small sample size, but the effect size (calculated using Hedges's *g*,[298] a difference-in-differences method) was positive at 0.45.[299] In order to acknowledge meaningful effects regardless of sample size, the panel followed WWC guidelines and considered a positive statistically significant effect or an effect size greater than 0.25 as an indicator of positive effects.

In the Howard Street tutoring program, instructors constantly adapted the pace and content of instruction with their assessment of the student's current skill level, advancing or reviewing depending on each student's development.[300] Furthermore, all volunteer tutors were given continued support via ongoing monitoring by the reading specialist supervisor, who also planned each student's lessons individually. The Morris, Shaw, and Perney (1990) evaluation included five literacy measures. After adjusting for multiple comparisons, only on reading Basal Passages did the treatment group do significantly better than the control group on the posttest, but effect sizes were greater than 0.25 on all five posttest measures.

Finally, among the higher correspondence programs, Slattery (2003) studied the Fast ForWord computer program in an after-school context that was chosen by the school so that students in need of extra help would not miss any instruction during the school day. Fast ForWord is a computer program specifically designed to monitor individual performance on a daily basis and to modify the activities suggested to each student accordingly. Slattery (2003) found large positive significant effect sizes for both literacy measures that she used.

The main reason why four of these programs were judged to be in lower correspondence was a lack of detail in the evaluations describing these types of practices. For instance, in two cases, the programs used one-on-one tutoring, but there is no indication if tutors were trained to do formative assessments of their students and to use these assessments to guide their instruction.[301] Similarly, in two summer programs with small groups, it simply was not known how adaptive the programs were in their actual implementation.[302]

298. See Appendix B of WWC Procedures and Standards Handbook, http://www.ies.ed.gov/ncee/wwc/references/idocviewer/Doc.aspx?docId=19&tocId=8.

299. Langberg et al. (2006).

300. Morris, Shaw, and Perney (1990).

301. Experience Corps—Meier and Invernizzi (2001); SMART—Baker, Gersten, and Keating (2000).

302. Schacter and Jo (2005); Borman, Goetz, and Dowling (2008).

Nevertheless, they may have been, and it is notable that all the programs detailed in this section did find positive effects on some measures of academic achievement.

The Meier and Invernizzi (2001) study of Experience Corps and the Baker, Gersten, and Keating (2000) evaluation of SMART were both studies of after-school one-on-one tutoring programs in reading with 1st graders. In the Experience Corps Book Buddies program, tutoring sessions were designed to adapt to the tutee's individual learning pace and needs and to evolve with the progress in their learning.[303] After just one semester of tutoring (approximately 40 sessions lasting 45 minutes each), the first treatment group significantly outperformed the control group on early literacy measures.[304] The SMART program in Oregon is a two-year, one-on-one tutoring program in reading. The tutors were volunteers and were given minimal initial training and usually received very little or no ongoing support. The authors reported positive academic effects on various reading measures, but after applying WWC standards for multiple comparisons, these effects were no longer statistically significant.[305] However, their effect sizes were larger than 0.25; therefore, the impacts are considered substantively important following WWC guidelines.

303. Meier and Invernizzi (2001).

304. In the next semester, the groups switched places and the control group received 40 sessions of tutoring. By June, control group students had caught up with those in the original treatment group. The authors point out that although it is encouraging that students could benefit from the tutoring during either semester of the first year, it is curious that students in the first treatment group were not able to build on the tools that they received from the extra tutoring and outpace the original controls. They concluded that the question is outside the scope of their study, but they do point out that even though both groups made progress, at the end of their first year at school, even with 40 sessions of one-on-one tutoring, both groups were essentially only at a pre-primer level.

305. Baker, Gersten, and Keating (2000).

Schacter and Jo (2005) studied a seven-week reading summer camp for 1st graders. Exercises during reading time were designed to address specific skill sets; for certain exercises, students were matched according to their skill levels for paired and small group reading instruction. The study found large positive effects on decoding and reading comprehension in follow-up test scores from September.

Borman, Goetz, and Dowling (2008) randomly assigned exiting kindergarten students to participate in either a six-week summer program or a no-treatment control group. The program found positive effects on some literacy skills.[306] Class sizes were limited to 10, and the pacing of the morning literacy block was determined by student needs. College student interns, who worked with certified teachers, participated in weekly professional development workshops with the teachers and other experts. They also had a four-week training program on curricula/instruction, assessment, classroom management, parent involvement, and team building before the summer camp began.

Inconclusive evidence for one-on-one tutoring in OST programs

Two other small sample studies on after-school one-on-one or one-on-two programs

306. Borman, Goetz, and Dowling (2008) had five measures of early literacy: letter naming, phoneme segmentation, word list, developmental reading instruction (DRA), and dictation. There were no significant differences found between the treatment and control groups on letter naming, phoneme segmentation, or dictation. After controlling for multiple comparisons following WWC guidelines, the average pre-to-post difference for word lists was significantly greater for the treatment group compared to the control group. Also, both word lists and DRA had estimated effect sizes greater than 0.25 using Hedges's *g* (for technical details on both computations, see http://ies.ed.gov/ncee/wwc/references/iDocViewer/Doc.aspx?docId=20&tocId=6).

found no effects but were judged to have lower levels of correspondence.[307] McKinney (1995) conducted a randomized controlled trial on Leap Frog, an after-school program in which university students provided one-on-one tutoring and homework assistance to 1st and 2nd graders, but since teachers from the school assigned topics and assignments for the tutors to cover, this program could be only as adaptive as the teachers were. Udell (2003) used a quasi-experimental design to study the NDP program, which provided one-on-two reading tutoring to 2nd-grade students after school. Student assessment and progress monitoring were emphasized in the program, and tutors were trained to assess their students' strengths and needs and to determine appropriate educational objectives and lessons based on those assessments. The tutors also were trained in effective instructional and motivational strategies, and they were provided with ongoing coaching from an experienced schoolteacher. However, this was a relatively short program consisting of fewer than 20 hours of literacy tutoring.

Mixed evidence on individualizing instruction in OST programs

The next three programs are larger studies of two summer school programs (Teach Baltimore and Chicago Summer Bridge) and one after-school program (Enhanced Academic Instruction). Only the Enhanced Academic Instruction program was considered highly relevant to this recommendation.

Borman and Dowling (2006) failed to find overall effects of the Teach Baltimore program on reading despite attempts to individualize instruction, but they did find positive academic effects when comparing high attendees to students whom they judged more likely to have been high attendees (see discussion in this appendix for recommendation 2). This could be interpreted as a somewhat cautionary note of support for some elements of the program. It is not possible to disentangle which components of the Teach Baltimore program are responsible for its success with high attendees. Whether this should be attributed to the adaptive nature of the instruction, the engaging elements of the instruction, the longevity of the program (available to students for three summers in a row after 1st, 2nd, and 3rd grades), interactions of various components, or something else entirely is not known.

The Teach Baltimore summer program used a curriculum that was designed to be adaptive to varying levels of achievement and provided instructors with materials they could use to supplement core instruction based on students' progress. The program also provided three weeks of training to its instructors (undergraduate students) prior to the program and the maximum class size was held to eight students.[308]

Jacob and Lefgren (2005) studied Chicago's Summer Bridge program and found effects in math and reading for 3rd graders but not for 6th graders. The program was designed to provide remedial instruction in small classes of around 16 students.[309] In a qualitative study of twenty-six 6th graders who participated in Summer Bridge, some students reported receiving individualized instruction, and a few reported frustration with the overall slow pace of the classes, and their resulting inability to learn according to their needs.[310] Despite the relatively small class sizes compared to in-school instruction, the program was narrowly focused on pacing and keeping

307. McKinney (1995); Udell (2003).

308. Borman and Dowling (2006).

309. Roderick, Jacob, and Bryk (2004).

310. Stone et al. (2005). Of the twenty-six 6th graders interviewed, 10 were classified as having positive experiences, 13 with neutral experiences, and 3 with negative experiences. Only the ones with overall negative experiences mentioned frustration with the pacing.

up with a specific, highly structured, centrally dictated curriculum and may not actually have been adequately adaptive to student needs.

Black et al. (2008) studied an after-school program of Enhanced Academic Instruction in math and reading (separate treatment groups) and found small positive effects for the math curriculum but not for the reading curriculum. Both curricula were designed to assess students before and after lessons, provide instruction in small groups (an average of nine students could be broken down into smaller groupings) separated by grade or skill, as well as time for students to work independently with self-monitoring and supervision from an instructor. Instructors were provided with training, manuals, and multiple sources of ongoing support to enable effective implementation of the program. However, the comparison group also received after-school programming with a low teacher-to-student ratio.[311] Nevertheless, a definite service contrast between the treatment group and the control group was the use of formative diagnostic testing to influence the direction of the instruction, since after-school programs were specifically chosen to host the Enhanced Academic Instruction program only if they did not use diagnostic tests to guide their programming in their regular offerings.

Cautionary evidence on individualizing instruction in out-of-school time programs

This section discusses the 21st CCLC programs and SES, neither of which has demonstrated positive academic effects.

A large number of 21st CCLC programs were evaluated in the national study.[312] As expected, the implementation of the program was not consistent across all the programs. Although an academic component was mandated by law, in practice, many programs put a strong emphasis on recreation because it was more attractive to students.[313] Programs that did focus on academics often provided tutoring in small groups of 5 to 7 students or test preparation classes in groups of 7 to 10. They also may have made an effort to monitor student progress in the program and at school and aligned instruction with input from the schoolteacher. Many programs required students to participate in the academic session before any recreational activities, but the academic session could have been as simple as unstructured time to complete homework with minimal follow-up from a staff member.

The literature on SES, an intervention that is typically but not always provided one-on-one or in small groups, is not encouraging. Zimmer et al. (2007) found some positive effects in a large national study that does not meet WWC standards because the treatment and comparison groups were not equivalent initially.[314] Three quasi-experimental studies that met WWC standards with reservations found no academic effects; the authors of two of these studies suggest that the dosages of SES provided in the locales they studied (cities in Tennessee and in Louisville, Kentucky)

311. In the math study, the treatment group ratio was 1:9 compared to 1:11 in the regular after-school program. In the reading study, the treatment group ratio was 1:9 compared to 1:14 for the regular group.

312. U.S. Department of Education (2003); Dynarski et al. (2004); James-Burdumy, Dynarski, and Deke (2007).

313. U.S. Department of Education (2003).

314. As mandated by law, if all students eligible for SES cannot receive services, schools must prioritize lower-performing students to receive services first. Zimmer et al. (2007), in their study of SES in nine large, urban districts, did find that at baseline, the eligible students who received SES had significantly lower achievement levels than their comparison group peers, eligible students who did not receive SES.

were insufficient.[315] However, the dosages (30–40 extra hours a year) are comparable to at least one of the programs with positive effects mentioned earlier, the Experience Corps Book Buddies program.[316] The authors also suggest that the lack of results could result from a lack of sensitivity of standardized state tests to small changes in achievement levels.[317]

Supplemental evidence from other sources

Three studies were gleaned for illustrations of practices relevant for individualizing instruction even though they did not pass WWC screens for this guide.[318] One study looked at the Early Start to Emancipation Preparation (ESTEP) tutoring program, which was organized at community colleges instead of by a school or district.[319] The program incorporated frequent assessment of students, including diagnostics, weekly progress tests, and other periodic checks. It also emphasized instructing students at their own pace and trained tutors accordingly. The Project CARES (Career Awareness Resources for Exceptional Students) program also did diagnostic needs assessments of students and included student-paced instruction and computer-assisted adaptive teaching.[320] The study of the Boys and Girls Club of Broward County program described the instructors grouping students by achievement levels whenever possible during academic instruction.[321]

Three programs with explicit staff development practices provided concrete examples for implementation strategies even though the evaluations of these programs either did not pass WWC screens[322] or did not meet WWC standards.[323] Evaluations of Communities Organizing Resources to Advance Learning (CORAL) have been purely qualitative or lacked a comparison group.[324] The evaluations of the other two programs, Building Educated Leaders for Life (BELL) and Partnership Education Program (PEP), either did not measure initial achievement levels (BELL)[325] or had treatment and comparison groups that were not equivalent

315. Tennessee—Ross et al. (2008); Louisville, Kentucky—Muñoz, Potter, and Ross (2008). The third study, McKay et al. (2008), did not provide any information on dosage.

316. The Experience Corps Book Buddies program in the Bronx, New York (Meier and Invernizzi 2001) found positive effects of forty 45-minute tutoring sessions (30 hours total) over the course of a semester. The Howard Street Tutoring Program (Morris, Shaw, and Perney 1990) met with students twice a week for one hour. The program lasted from early October until late May; potentially, the tutees had as much as 54 hours of extra instructional time over the course of the school year (2 hours a week for 32 weeks but subtracting 2 weeks for the winter holidays, 1 each for spring break and for the first and last weeks of the eight-month time span). Unfortunately, data on actual extra tutoring time are not provided.

317. Tennessee—Ross et al. (2008); Louisville, Kentucky—Muñoz, Potter, and Ross (2008).

318. Courtney et al. (2008); New York City Board of Education (1991); Brown (2002).

319. Courtney et al. (2008). This study was out of the scope for the practice guide because of age range.

320. New York City Board of Education (1991). The study did not pass screens because it lacked a comparison group and seemed to be targeting high school students.

321. Brown (2002). The study did not have a comparison group nor was it school based.

322. Arbreton et al. (2008); Sheldon and Hopkins (2008).

323. Chaplin and Capizzano (2006); Tucker (1995).

324. Arbreton et al. (2008) and Sheldon and Hopkins (2008) did not pass WWC screens for this reason.

325. Chaplin and Capizzano's (2006) randomized controlled trial did not meet standards because it suffered from high attrition and had not measured the initial achievement levels, so it could not demonstrate that the treatment and control groups were equivalent at baseline. Furthermore, the posttest achievement tests for students in the control group were administered on a different date than those for the treatment group and were, therefore, not directly comparable.

before the program began (PEP).[326] Hence, neither study met WWC standards.

In the BELL program, instructors were provided with training and manuals to prepare them for teaching in the summer program.[327] In PEP, there was a strong emphasis on observing after-school instruction of students and monitoring for quality, as well as coaching instructors in the proper instructional practices.[328] CORAL, an after-school literacy program for grades K–8, provided individualized training and coaching to its instructors by grouping them by experience and prior training and tailoring the training to the needs of the instructors.

Recommendation 4. Provide engaging learning experiences

Level of Evidence: Low

The panel judged the level of evidence for this recommendation to be *low*. Studies of the types of activities covered in this recommendation have demonstrated that they are effective in laboratory and school-day settings. However, the evidence for whether these practices are effective is mixed in the OST context. Although many programs identified making instruction engaging as a key program goal, very few demonstrated consistently positive effects, and none linked positive effects directly to the use of the strategies outlined in this recommendation. The panel believes programs can be more successful if they implement engaging learning strategies that are integrated into the programs' academic components.

Summary of evidence

Several studies, conducted outside of the OST arena, have examined the effectiveness of different strategies to increase student motivation, engagement, and academic success.[329] In the OST context, however, the evidence supporting the use of engaging activities has been mixed (see Table D6). Five programs documented practices highly aligned with those recommended by the panel; these either made a deliberate effort to integrate engaging practices with academic content or intentionally developed relationships between students and OST staff with the objective of engaging students with school and learning.[330] Of these, three programs demonstrated positive academic effects,[331] and two showed mixed effects.[332] Six other programs had practices similar to the panel's recommendations, but they either did not provide enough descriptive evidence to determine whether they were highly aligned with the panel's recommendations or contained some evidence that the strategies were used in a way that was inconsistent with the panel's recommendations.[333] One of these showed positive effects,[334] one

326. Tucker (1995).

327. Capizzano et al. (2007).

328. Tucker (1995).

329. Cordova and Lepper (1996); Anderson (1998); Guthrie et al. (1999); Guthrie, Wigfield, and VonSecker (2000); Battistich et al. (1997); Klem and Connell (2004); Helme and Clark (2001); Blumenfeld and Meece (1988); Connell and Wellborn (1991).

330. Early Risers—August et al. (2001); Developmental Mentoring—Karcher, Davis, and Powell (2002); Enhanced Academic Instruction—Black et al. (2008); Teach Baltimore—Borman and Dowling (2006); KindergARTen—Borman, Goetz, and Dowling (2008).

331. Early Risers—August et al. (2001); Developmental Mentoring—Karcher, Davis, and Powell (2002); KindergARTen—Borman, Goetz, and Dowling (2008).

332. Enhanced Academic Instruction—Black et al. (2008); Teach Baltimore—Borman and Dowling (2006).

333. Summer Reading Day Camp—Schacter and Jo (2005); Chicago Summer Bridge—Jacob and Lefgren (2004); L.A.'s BEST—Goldschmidt, Huang, and Chinen (2007); YS-CARE—Bissell et al. (2002); 21st CCLC—U.S. Department of Education (2003); NDP—Udell (2003).

334. Summer Reading Day Camp—Schacter and Jo (2005).

Table D6. Studies of programs cited in recommendation 4 that met WWC standards with or without reservations

Program and Study Details				Strategies			
Brief Citation	**Program Type**	**Grades Studied[a]**	**Level of Relevance[b]**	**Integrated Engaging Components with Academic Components**	**Examples of Activities Used to Make Learning Relevant**	**Examples of Active Learning Experiences**	**Fostered Positive Adult-Student Relationships to Increase Engagement in Learning**
Positive Academic Effects							
KindergARTen, Borman, Goetz, & Dowling (2008)	Summer	K	√√	Yes	Themes, field trips	Collaborative learning	
Summer Reading Day Camp, Schacter & Jo (2005)	Summer	1	√		Personalize learning to student experiences	Hands-on, exploratory learning	
Early Risers, August et al. (2001)	Summer and school-year mentoring	K–2	√√			Participation, role-play	Teachers, parents
Developmental Mentoring, Karcher, Davis, & Powell (2002)	Summer and school-year mentoring	5	√√		Themes, personalize learning to student experiences		Teachers, parents
Mixed Academic Effects							
Teach Baltimore, Borman & Dowling (2006)	Summer	K–2	√√	Yes	Field trips	Hands-on, games	
Chicago Summer Bridge, Jacob & Lefgren (2004)	Summer	3, 6	√			Interactive questioning, collaborative learning	
Enhanced Academic Instruction, Black et al. (2008)	After school	2–5	√√	Yes	Personalize learning to student experience	Hands-on, games, computers	
No Detectable Academic Effects							
NDP, Udell (2003)	After-school tutoring	2	√				Program staff
L.A.'s BEST, Goldschmidt, Huang, & Chinen (2007)	After school	K–6	√			Recreational activities—non-linked	
21st CCLC, U.S. Department of Education (2003); Dynarski et al. (2004); James-Burdumy et al. (2005)	After school	K–8	√	No		Engaging programming	
YS-CARE, Bissell et al. (2002)	After school	1–5	√		Choice	Enrichment activities	

a. For summer programs, refers to the grade participating students exited prior to the commencement of the summer program.

b. Indicates relevance of recommendation to program operation. "√√" indicates high relevance; "√" indicates lower relevance.

showed mixed effects,[335] and four showed no effects.[336] Although the evidence is somewhat mixed, on average, those with positive or mixed effects seemed to be more closely aligned with the strategies recommended by the panel.

Evidence from non-OST studies

Engagement is a multidimensional concept that can refer to behavior (ranging from following classroom rules to actively participating in class and the school community),[337] emotions (affectations related to learning including excitement and boredom or identification with school),[338] and cognition (effort and motivation to learn).[339] Many studies have shown that engagement is correlated with improved academic outcomes for students[340] and that behavioral disengagement is associated with poor academic performance.[341] Activities that include choice and cooperation between staff and students have been linked theoretically to student engagement and connection to school.[342] Likewise, teacher support and caring are associated with increased engagement.[343] There is some evidence that autonomy and choice encourage students to persist and engage more with learning activities.[344] Other researchers have argued that collaboration, "opportunities for fun," "novel tasks that have personal meaning," hands-on activities, and tasks that build on individual talents can increase engagement.[345]

In a study using student records and survey data, Klem and Connell (2004) looked at how student engagement and levels of teacher support for students correlated with future academic achievement in six elementary and three middle schools in an urban district. They found that more highly engaged students had higher achievement than did those who were less engaged (based on self and teacher reports of engagement). Additionally, the authors found that when students perceived their teachers to be supportive, the students tended to be more engaged in school.[346]

The panel also considered two specific experimental studies to supplement the evidence on this recommendation. The first examined adding personalized components (such as the student's name or birthday), choice, and embellishments designed to pique student interest in a computer game designed to teach order of operations. When the game included these components, students demonstrated increased engagement in and learning from the tasks.[347] In the second study, students in six classrooms at two schools were randomly assigned to either a control condition that received the traditional science textbook or one of three treatment conditions. One treatment group received interesting texts about the animals

335. Chicago Summer Bridge—Jacob and Lefgren (2004).

336. L.A.'s BEST—Goldschmidt, Huang, and Chinen (2007); YS-CARE—Bissell et al. (2002); 21st CCLC—U.S. Department of Education (2003); NDP—Udell (2003).

337. See Finn (1993); Finn, Pannozzo, and Voelk (1995) for more on behavioral engagement.

338. See Finn (1989), Connell and Wellborn (1991), and Skinner and Belmont (1993) for more on emotional engagement.

339. See Connell and Wellborn (1991) and Newmann et al. (1992) for more on cognitive engagement.

340. Connell, Spencer, and Aber (1994); Marks (2000); Wellborn and Connell (1990); Connell and Wellborn (1991).

341. Finn, Pannozzo, and Voelkl (1995); Finn and Rock (1997).

342. Newmann et al. (1992).

343. Battistich et al. (1997); Klem and Connell (2004).

344. Turner (1995); Perry (1998).

345. See, for example, Newmann (1991); Helme and Clark (2001); Blumenfeld and Meece (1988); Guthrie, Wigfield, and VonSecker (2000); Connell and Wellborn (1991). Most of the information in this paragraph is drawn from Fredricks, Blumenfeld, and Paris (2004), which reviews the available research on student engagement in school environments.

346. Klem and Connell (2004).

347. Cordova and Lepper (1996).

students were studying, another was given time to observe animals, and the third received both the interesting texts and the observation opportunities. All groups were instructed by the researcher and rotated to work with her in small groups in a separate classroom over the course of a one-week intervention.[348] The researcher reported increased conceptual knowledge among students receiving the interesting texts and the combination of observation and interesting texts, relative to the control group, but not among the students in the observation alone group. This study provides some evidence for the use of engaging instructional materials and opportunities for real-world interactions, but it is limited by a small sample, short duration, and possible contamination of the groups when students returned to the school-day classroom and had opportunities to discuss their experiences in small groups.[349]

Finally, two correlational studies provide additional support for the incorporation of science observation and engaging instruction into classroom learning. Concept-Oriented Reading Instruction (CORI) integrates science content and engaging instruction (including real-world, hands-on activities and collaboration) into reading instruction.[350] Guthrie et al. (1999) found that students instructed using these methods showed greater concept learning and comprehension gains than did students in traditional instruction classrooms. In another study, the same strategies produced gains in motivation and engagement for participating students.[351]

348. Anderson (1998) acknowledges the possibility of experimenter effects unintentionally influencing the results of the study.

349. Ibid.

350. Guthrie et al. (1999).

351. Guthrie, Wigfield, and VonSecker (2000).

Positive OST evidence for engaging instruction

Four programs with engaging instruction showed positive effects in randomized controlled trials.[352] Three of the four evaluations discussed practices that were closely related to this recommendation,[353] and the fourth study did not contain enough detail to judge the level of integration of engaging practices in the academic instruction.[354] Two of the closely related programs that showed positive effects worked intentionally to engage and connect students with learning by developing positive adult and peer relationship through mentoring and outreach to parents, as recommended by the panel in the third action step for this recommendation.[355]

Early Risers is a two-year tutoring and mentoring program that recruits children with early onset aggressive behavior at the end of kindergarten.[356] The study was conducted in two locations each with 10 schools randomly assigned to treatment and control groups and found consistently positive academic effects. The program includes a six-week summer component and additional support for students, families, and teachers during the school year. Students were paired with peer mentors to collaborate daily on specific tasks designed to develop social skills but which also might have contributed to the development of relationships and positive engagement within a school environment

352. August et al. (2001) evaluated a summer program with year-round mentoring; Karcher, Davis, and Powell (2002) and Karcher (2005) studied a developmental mentoring program; Borman, Goetz, and Dowling (2008) and Schacter and Jo (2005) evaluated different summer programs.

353. August et al. (2001); Karcher, Davis, and Powell (2002); Borman, Goetz, and Dowling (2008).

354. Schacter and Jo (2005).

355. August et al. (2001); Karcher, Davis, and Powell (2002); Karcher (2005).

356. August et al. (2001).

that the panel believes will promote academic success. The program also provides teachers and parents with strategies to manage children's behavior, ultimately intending to develop stronger relationships with other adults. Fidelity-monitoring checklists measured whether summer staff members encouraged student participation or used role-play, both components of the engaging instruction recommended by the panel.[357]

Two studies looked at the effectiveness of a Saturday and summer school program that used developmental mentoring to increase connectedness and academic achievement.[358] The first study demonstrated small positive academic effects, and the second study showed that the program increased students' connectedness on multiple dimensions. In Karcher et al. (2002), 30 average or above average achieving 5th-grade students from three schools with high dropout rates were randomly assigned to either a no-treatment comparison group or to the program, which consisted of monthly Saturday programming and a two-week summer session with high school mentors. The program included academic enrichment and social connectedness components. Participating students integrated math, science, writing, and computer skills into a final project over the summer. Students also completed writing projects that incorporated social and cultural experiences, future careers, and negotiation and cooperation. The program encouraged parents to attend programming and field trips. A second study of a similar program produced greater connectedness to school and learning but did not measure whether there were academic achievement gains.[359]

The other closely related program documented an intentional effort to integrate field trips and activities with the academic goals of the program.[360] Borman, Goetz, and Dowling (2008) randomly assigned exiting kindergarten students to participate in either a six-week summer program or a no-treatment control group. The program found positive effects on some literacy skills.[361] The program, intended to "build a love of learning," included weekly field trips and theme-based afternoon activities designed to build background and content knowledge for the literacy instruction conducted each morning.[362] Poetry and songs, thematic learning, and collaborative learning activities were regular program components.

Finally, Schacter and Jo (2005) studied a seven-week summer reading day camp in which students exiting 1st grade in three high-poverty schools with large minority populations in south Los Angeles were instructed using writing activities that incorporated everyday life experiences and creative writing opportunities.[363] Play and exploration were encouraged. Students were randomly assigned either to participate in the camp (maximum enrollment was limited to 72 students because of the amount of funding) or to serve as a control group. The study found large positive effects on

357. Ibid.

358. Karcher, Davis, and Powell (2002); Karcher (2005).

359. Karcher (2005).

360. Borman, Goetz, and Dowling (2008).

361. Borman, Goetz, and Dowling (2008) had five measures of early literacy: letter naming, phoneme segmentation, word list, developmental reading instruction (DRA), and dictation. There were no significant differences found between the treatment and control groups on letter naming, phoneme segmentation, or dictation. After controlling for multiple comparisons following WWC guidelines, the average pre-to-post difference for word lists was significantly greater for the treatment group compared to the control group. Also, both word lists and DRA had estimated effect sizes greater than 0.25 using Hedges's *g* (for technical details on both computations, see http://ies.ed.gov/ncee/wwc/references/iDocViewer/Doc.aspx?docId=20&tocId=6).

362. Borman, Goetz, and Dowling (2008), p. 2.

363. Schacter and Jo (2005).

decoding and reading comprehension in follow-up test scores from September.

Mixed support for engaging instruction in OST

Three large studies provide mixed support for the use of engaging instructional practices in OST.[364] In two, engaging instructional techniques were intentionally integrated with the academic content of the program.[365] In the third, supplemental information from qualitative interviews with students suggests that engaging instruction in the OST offering might be more common than during school, but this was not represented as a core objective of the program.[366]

Chicago Summer Bridge showed positive effects on student achievement among the districts' lowest-performing 3rd-grade students, but not among 6th graders.[367] Participating students reported improved relationships with teachers and indicated that they received more encouragement to achieve from summer instructors than from their teachers during the school year. Student interviews also suggested that some instructors were able to keep students engaged by using interactive questioning to gauge student understanding and collaborative pairing to support the needs of both struggling and more advanced students; however, none of these components was presented as a major or consistent component of Chicago Summer Bridge.[368]

A randomized controlled trial of the Teach Baltimore program showed no positive effects on reading, but a quasi-experimental component showed positive significant effects for students who attended the summer program more frequently. In the program, students participated in hands-on math and science learning projects and education games in the afternoon and also learned new skills and knowledge through field trips to museums, which were integrated with classroom activities. Students also incorporated experiences beyond the classroom and neighborhood into the learning.[369]

A study of Enhanced Academic Instruction in After-School Programs randomly assigned students to receive either a structured enhanced curriculum or a regular after-school day offering. The instructional materials and program were intentionally designed to be engaging and related to academic standards, which led to the inclusion of games, hands-on activities, and computers, and program staff members were evaluated on instructional techniques, including whether they made efforts to link academic concepts to student experiences. The program demonstrated small math effects; however, a parallel intervention for reading, which included many similar features and also was intended to engage students with academic content, showed no effects. This suggests caution in interpreting the study findings as evidence for the effectiveness of engaging instruction.[370]

Inconclusive evidence for engaging instruction in OST

Four programs at least partially implemented the panel's recommendations and showed no effects, but studies of each either provide evidence that engaging activities were not clearly linked to academic instruction or do not contain enough detail for the panel to judge their alignment with

364. Borman and Dowling (2006); Black et al. (2008); Jacob and Lefgren (2004).

365. Borman and Dowling (2006); Black et al. (2008).

366. Stone et al. (2005).

367. Jacob and Lefgren (2004).

368. Stone et al. (2005); Roderick et al. (2004).

369. Borman and Dowling (2006).

370. Black et al. (2008).

the recommended practices.[371] A quasi-experimental study of the NDP program, which provided one-on-two or one-on-one reading tutoring from undergraduate tutors to 2nd-grade students after school, found no effects compared to a comparison group that received small group activities not related to literacy.[372] The study sample was small (27 students in the treatment and control groups combined), and the treatment duration was short (twice a week for 10 weeks). In the program, tutors used opportunities for creative expression to supplement reading instruction. Based on qualitative reflections from tutors, the researcher observed that as the tutors developed relationships with their students, they were better able to engage them in the instruction. However, these relationships were brief and not described as a goal of the program. There is no information in the study to determine whether fostering engagement with school or learning was an intentional or widespread component of the program.[373]

Like NDP, studies of L.A.'s BEST and YS-CARE do not provide enough detail to determine the level of integration between academic and engaging components of the program.[374] A quasi-experimental study of L.A.'s BEST found no consistent positive academic effects.[375] Although some engaging activities were not strongly tied to academic programming (recreational activities included cooking, holiday activities and crafts, for example[376]), promoting student engagement was identified as a program goal in supplementary studies of L.A.'s BEST,[377] and academic activities were intended to promote a "love of learning" and build relationships between students and staff.[378] Reports on L.A.'s BEST do not contain enough details about the actual implementation to judge the degree to which engaging activities were explicitly linked to academic instructions.[379] Similarly, an evaluation of the YS-CARE found positive but nonsignificant findings in the first year.[380] The program included diverse enrichment programs intended to broaden students' knowledge base, among other objectives, and the enrichment staff traveled from site to site, but the specifics of these practices were not outlined in sufficient detail to determine the degree to which engaging practices were implemented in the program.[381]

Finally, an evaluation of the 21st CCLC after-school program showed no consistent positive academic effects among elementary or middle school students but contains details that suggest that engaging practices were not fully integrated with the academic components of the programs. Participating middle school teachers reported improved relationships with students. Middle school site observations by the evaluation team revealed that student engagement was often higher during recreational and cultural activities, which were often intentionally disconnected from academic components, than during academic classes. In most programs, students were allowed to select activities to increase program appeal, but choice often was limited to the recreation and cultural components. Although all programs offered some sort of academic assistance, it often was limited to homework help sessions during which students worked independently

371. Udell (2003); Bissell et al. (2002); Goldschmidt, Huang, and Chinen (2007); U.S. Department of Education (2003).

372. Udell (2003).

373. Ibid.

374. Goldschmidt, Huang, and Chinen (2007); Bissell et al. (2002).

375. Goldschmidt, Huang, and Chinen (2007).

376. Ibid.

377. Huang et al. (2007).

378. Goldschmidt, Huang, and Chinen (2007), p. 9.

379. Huang et al. (2007); Goldschmidt, Huang, and Chinen (2007).

380. Bissell et al. (2002).

381. Ibid.

with little direct support from instructors. In elementary school, homework sessions were similarly structured and sometimes chaotic. In short, although many programs strove to provide engaging experiences for participants, these experiences often were disconnected from the academic components of the centers.[382]

Supplemental evidence from other sources

Other studies provided examples of engaging practices, but they either did not meet the OST protocol for inclusion or failed to meet WWC standards with or without reservations. A number of meta-analyses have reviewed the effectiveness and characteristics of different OST programs.[383] One found that programs that used social and real-world examples had a positive impact on math.[384] Another reviewed 73 reports with control groups on afterschool programs that sought to improve personal and social skills. The authors found the strongest predictor of programs with increased academic achievement was that the program had an academic component.[385] The authors also found that programs that were active or included opportunities such as role-play and hands-on practice were among those that produced changes in student outcomes.

In Project Adelante, a summer program and Saturday academy for recent Latino immigrants, promoting positive cultural identity was incorporated across courses and enrichment activities. All programming was aligned with a yearly theme. Students worked with mentors and instructors from similar backgrounds who served as role models of successful Latino professionals to improve student aspirations and expose them to real-world careers. The program coordinated parent nights that included staff from the students' schools, as well as meetings with parents to help them address concerns about the situations their children faced in school and to help them effectively manage conflicts that emerged as their children adapted to a new culture.[386]

The BELL program includes considerable academic instruction, described by the study authors as "culturally relevant"[387] and arranged around specific themes, field trips, and guest speakers to supplement academic content.[388] Members of the panel reported observing particularly dynamic instructional settings.

The TASC program showed consistently positive effects for math, but not for reading.[389] Roughly three-quarters of the site coordinators reported using a theme to link different program activities across years 2 to 4 of the project and that students participated in group work.[390] Although homework help was reported as the activity with the most intense emphasis across TASC programs, recreational reading, math

382. U.S. Department of Education (2003).

383. Meta-analyses are ineligible for review under current WWC standards.

384. Lauer et al. (2004).

385. Durlak et al. (2007).

386. Center for Applied Linguistics (1994). This study failed to pass WWC screens because it did not contain a comparison group.

387. Chaplin and Capizzano (2006), p. 5.

388. Chaplin and Capizzano (2006). This randomized controlled trial did not meet standards because it suffered from high attrition and had not measured the initial achievement levels and could not demonstrate that the treatment and control groups were equivalent initially. Furthermore, the posttest achievement tests for students in the control group were administered on a different date than those for the treatment group and were, therefore, not directly comparable.

389. Reisner et al. (2004). This study found positive and significant math gains for participants, but no effects for language arts. Because baseline equivalence of the treatment and control groups was not reported, WWC reviewers were unable to assign a rating to the study.

390. Ibid.

games, and word games were among the top 5 out of 12 activities measured.[391]

A qualitative study of the Philadelphia Beacon Centers combined surveys of students and staff with observations of program offerings to identify practices that engaged students and observers. The study found the use of cooperative learning and choice was associated with student enjoyment and desire to participate in activities.[392] A study of the Voyager TimeWarp model, implemented in 13 middle and elementary schools for low-achieving students, includes collaborative learning as a key component.[393] In another small program, professional women with careers in the physical sciences mentored minority girls in classroom settings designed to give them hands-on experience with science and provide them with role models in the field.[394] Related field trips showed the classroom lessons in action.

When implementation data suggested that the CORAL program (designed primarily for elementary students in low-performing schools in California) was poorly implemented on average and consisted mostly of homework help and enrichment activities that were disconnected from academic content, the program tried to improve program quality and student engagement.[395] As the program implemented changes, specifically enhancing the academic component of the program, most CORAL students reported having adults they could talk to and who cared about them, and that they liked literacy activities at the centers. Teachers reported efforts to make literacy activities fun, including making connections between the stories they read and the students' real-life experiences and engaging the students in conversations about the material. In some locations, enrichment staff rotated from site to site.[396]

391. Ibid.

392. Grossman, Campbell, and Raley (2007). This study failed to pass WWC screens because it did not attempt to measure program impacts on academic achievement.

393. Roberts and Nowakowski (2004). This study failed to pass WWC screens because it did not have a comparison group.

394. Ferreira (2001). This study was not eligible for WWC review because it did not have a comparison group.

395. Arbreton et al. (2008). This study was not eligible for review because it did not include a comparison group.

Recommendation 5. Assess program performance and use the results to improve the quality of the program

Level of evidence: Low

The panel judged the level of evidence supporting this recommendation to be *low*. Although the panel believes that monitoring and improving performance are important to ensure that the program is carrying out its intended objectives and adapting to changing needs and feedback, no direct evidence suggests that monitoring leads to increased academic achievement in OST programs. More research would be needed to isolate whether it is the monitoring itself or other components that lead to positive academic effects in those programs that do some form of monitoring.

Summary of evidence

OST programs could consider using different kinds of assessments. Seven programs relevant to this recommendation had studies that met WWC standards with or without reservations (see Table D7).[397] Of these seven, five included elements of

396. Ibid.

397. Early Risers—August et al. (2001); CHP—Langberg et al. (2006); Teach Baltimore—Borman and Dowling (2006); Chicago Summer Bridge—Jacob and Lefgren (2004); Enhanced Academic Instruction—Black et al. (2008); L.A.'s BEST—Goldschmidt, Huang, and Chinen (2007); YS-CARE—Bissell et al. (2002).

Table D7. Studies of programs cited in recommendation 5 that met WWC standards with or without reservations

Program and Study Details			Brief Description of Strategies Used
Brief Citation	**Program Type**	**Grades Studied[a]**	**Strategies Used for Evaluating Program Performance**
Positive Academic Effects			
Early Risers, August et al. (2001)	Summer and school-year mentoring	K–2	Fidelity monitoring: Fidelity technicians observed instruction for content presentation, style of delivery, and staff comportment through unannounced visits. Checklists were used to assess the alignment of staff behavior along three dimensions: (a) elicits participation and shows enthusiasm, (b) uses skills training or reinforces skill use, and (c) uses behavior management techniques. Tracking student participation: Staff recorded attendance and material covered in logbooks, and level of engagement and homework completion in rating forms.
CHP, Langberg et al. (2006)	After school	6–7	Fidelity monitoring: Group leaders kept a folder for each child in which they recorded progress and behavior each time they met with a child. Staff supervisors reviewed the folders and identified problems during weekly supervision sessions.
Mixed Academic Effects			
Teach Baltimore, Borman & Dowling (2006)	Summer	K–2	Fidelity monitoring: Instruction was observed to make sure it was being delivered as prescribed. Tracking student participation: Student attendance also was monitored.
Chicago Summer Bridge, Jacob & Lefgren (2004)	Summer	3, 6	Fidelity monitoring: Monitors visit the classroom regularly to observe instructors and make sure that they are teaching within the curriculum and pace guidelines.
Enhanced Academic Instruction, Black et al. (2008)	After school	2–5	Fidelity monitoring: Local district coordinators were responsible for observing instruction. Representatives from the curriculum publishers also visited sites twice a year to observe instruction.
No Detectable Academic Effects			
L.A.'s BEST, Goldschmidt, Huang, & Chinen (2007)	After school	K–6	Fidelity monitoring: The program's office of evaluation has an internal evaluation team that regularly meets with field staff and administrators to share thoughts on program operation. Ongoing external evaluations: External evaluations are performed to measure the effect of the program on short- and long-term outcomes. Site-specific results are shared with site coordinators and used to evaluate individual site performance. Surveys of key stakeholders: Evaluations gather feedback from program staff, school-day teachers, parents, and students.
YS-CARE, Bissell et al. (2002)	After school	1–5	Surveys of key stakeholders: Evaluation surveys were administered to students, parents, school-day teachers, and YS-CARE staff to gauge satisfaction with the program.

a. For summer programs, refers to the grade participating students exited prior to the commencement of the summer program.

fidelity monitoring in order to ensure that program implementation followed the program model,[398] one used fidelity monitoring and ongoing external evaluations,[399] and one program used surveys of key stakeholders to gauge satisfaction with the program.[400] Of the six that used fidelity monitoring, all were considered to be doing so in a way that was largely consistent with the panel's recommendation, and five had either positive[401] or partially positive effects on academic achievement.[402] The program that also used external evaluators and the program with stakeholder surveys were both inconclusive with small nonsignificant effects.[403] Only the program that used just stakeholder surveys was considered to have a lower level of consistency with this recommendation because it was unclear how it used the surveys to improve the program.

Two studies that monitored program implementation and had positive academic effects

One randomized controlled trial of a summer tutoring and school-year mentoring program (Early Risers) for exiting kindergarten students with early onset aggressive behavior showed positive significant effects on academic competence.[404] Program monitoring was structured to ensure continuing fidelity with the model and included instructor logs of student attendance, their progress toward instructional objectives, and any changes in the implementation of the program curriculum. Monitors conducted periodic unscheduled visits to observe staff compliance with program components, including checks on student engagement. Monitors used checklists to evaluate staff compliance with program standards. August et al. (2001) reported that the monitoring results indicated that the Early Risers program was implemented as intended.[405]

Langberg et al. (2006) also used a randomized controlled trial to study CHP, which provided academic remediation and study skills training in small groups after school for 6th and 7th graders with a combination of learning and behavior problems. The program showed no statistically significant effects on teacher ratings of academic progress because of the small sample size, but the effect size was 0.45, large enough to be considered positive evidence by WWC guidelines.[406] To monitor fidelity to the CHP model, group leaders were required to keep a folder on each CHP participant. The group leaders recorded the percentages of binder, book bag, and locker organization in the folder each time they met with a student. These folders were reviewed by the staff supervisors, and problems were addressed during weekly supervision. Also, staff supervisors were onsite every program day and observed counselors leading groups. Supervisors then addressed any program-adherence issues with counselors during the weekly group supervision.[407]

398. Early Risers—August et al. (2001); CHP—Langberg et al. (2006); Teach Baltimore—Borman and Dowling (2006); Chicago Summer Bridge—Jacob and Lefgren (2004); Enhanced Academic Instruction—Black et al. (2008).

399. L.A.'s BEST—Goldschmidt, Huang, and Chinen (2007).

400. YS-CARE—Bissell et al. (2002).

401. Early Risers—August et al. (2001); CHP—Langberg et al. (2006).

402. Teach Baltimore—Borman and Dowling (2006); Chicago Summer Bridge—Jacob and Lefgren (2004); Enhanced Academic Instruction—Black et al. (2008).

403. L.A.'s BEST—Goldschmidt, Huang, and Chinen (2007); YS-CARE—Bissel et al. (2002).

404. August et al. (2001).

405. Ibid.

406. Langberg et al. (2006).

407. Ibid.

Mixed evidence for monitoring program implementation

Three programs had mixed academic effects but contained elements of fidelity monitoring. Whether they found positive academic effects depended on the analysis methods used and subgroups studied (Teach Baltimore),[408] the student grade level (Chicago Summer Bridge),[409] or the subject content area (Enhanced Academic Instruction in After-School Programs).[410] In the Teach Baltimore program, monitoring of instruction and student attendance was designed to ensure fidelity to the program model.[411] In Chicago Summer Bridge, monitors provided frequent oversight to ensure that instructors were implementing the desired curriculum and pacing, as well as to provide technical support.[412] In the Enhanced Academic Instruction in After-School Math and Reading programs, biannual visits were conducted by curriculum publishers and independent evaluators to monitor instruction and pacing, as well as program implementation, and to provide feedback and follow-up training. Weekly phone calls with district coordinators were used to problem-solve challenges associated with implementation of the model and to pass on implementation concerns that had been raised in the weekly meetings with the OST instructors.[413]

Inconclusive evidence for fidelity or other types of monitoring

Two programs, L.A.'s BEST and YS-CARE, were evaluated by quasi-experimental studies that found positive but small and nonsignificant effects on academic achievement.[414] L.A.'s BEST internal evaluators regularly monitored staff to gather and share information on best practices. The program also commissioned external evaluators to gather feedback from program stakeholders and measure program effects. The data from these evaluations were shared with site coordinators to inform program improvements and monitor site performance.[415] The YS-CARE program administered surveys to program stakeholders (students, parents, in-school teachers, and program staff) to gauge their impressions of the program.[416]

Supplemental evidence from other sources

For this recommendation, the panel supplemented the studies that met WWC standards with sources that discussed formative and summative evaluations of OST programs and program quality assessment. A meta-analysis of summer programs provides some evidence that programs that conduct implementation monitoring may have larger effects compared to programs that do not.[417] Although

408. Borman and Dowling (2006) found no effects on reading in an intent-to-treat randomized controlled treatment design that included all students but did find significant positive effects on reading using a quasi-experimental design that looked at the effects of the program only on the high attendees. See this appendix for recommendation 1 for more detail.

409. Jacob and Lefgren (2004) found significant positive effects in both math and reading for 3rd graders but not for 6th graders.

410. Black et al. (2008) found that their math curriculum had small but significant positive effects on student achievement for 2nd through 5th graders, but their reading curriculum did not.

411. Borman and Dowling (2006).

412. Stone et al. (2005). Summer Bridge showed positive achievement effects for 3rd graders but not for 6th graders in Jacob and Lefgren (2004).

413. Black et al. (2008).

414. Goldschmidt, Huang, and Chinen (2007); Bissell et al. (2002). Neither study reported sufficient detail for effect sizes to be computed.

415. Goldschmidt, Huang, and Chinen (2007).

416. Bissell et al. (2002).

417. Cooper et al. (2000). This meta-analysis showed positive effects for fidelity monitoring using fixed effects analysis, but not random

this finding is not fully generalizable, it provides some support for this recommendation, which the panel believes should be an important component of a successful OST program.

A qualitative study of the CORAL program provided a few examples of how to carry out implementation monitoring.[418] The program created tools for all observers of program instruction to use in rating the quality of teaching. The tools were used not only as a basis for providing targeted feedback for instructors, but also as a mechanism for measuring improvement over time in instruction and other aspects of the program.

Other sources provided guidance for how and when to conduct more formal performance evaluations. Fullan (2001) suggests that two to three years are necessary for programs to begin to see representative positive effects, based on his research of school reform interventions.[419] Ross, Potter, and Harmon (2006) provide guidance on the components of an effective evaluation and monitoring system for SES programs; the panel believes that this guidance is applicable to other academically focused OST programs.[420] Many publicly available resources that offer tools for assessing and monitoring program quality, either through observations or surveys, also are available.[421]

effects. Therefore, the authors caution that their findings should not be generalized beyond programs similar to those included in the meta-analysis. Furthermore, they point out, "These associations may be due to the impact that surveillance can have on the rigor with which programs are delivered. Or, they may simply indicate that the extra care that monitoring of programs implies is associated with other evaluation features, for example, care in data collection, related to the evaluation's likelihood of uncovering an effect" (p. 97).

418. Sheldon and Hopkins (2008).

419. Fullan (2001) is a research synthesis to which WWC standards are not applicable.

420. Ross, Potter, and Harmon (2006) does not look at the effectiveness of any programs.

421. For just two examples of what is available, see Yohalem et al. (2009) or the Bureau of Public School Options, Florida Department of Education (2007, n.d.).

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