



Investing in Successful Summer Programs

A Review of Evidence Under the Every Student Succeeds Act

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Preface

Summer is an opportune time to offer programming for children and youth. Such programs may be designed to provide academic support, enrichment opportunities, occasions for social and emotional growth, health benefits, or other positive outcomes. Public funding for summer programs often targets children and youth with particular needs, such as children from low-income families who tend to be disadvantaged during the summer in terms of academic growth, nutritious meals, and access to enriching programs in general. Although summer programs can benefit children and youth who attend, not all programs have demonstrated effective outcomes. Program providers and funders who must decide how best to invest limited resources to meet goals for children and youth in the summer are increasingly encouraged by policymakers to base their decisions on research evidence. Notably, the Every Student Succeeds Act (ESSA), which reauthorized the Elementary and Secondary Education Act, requires schools and districts to adopt evidence-based interventions when those interventions are supported by certain federal funding streams (Public Law 114-95, 2015).

This report, which provides a systematic review of the evidence supporting summer programs as well as examples of evidence-based programs, is intended to provide guidance regarding the effectiveness of summer interventions. It intentionally provides guidance on interventions that meet ESSA evidence criteria but should also provide useful information for decisionmakers examining programmatic options regardless of funding source. Commissioned by The Wallace Foundation, this evidence review summarizes a variety of priority topics in education that meet ESSA evidence criteria. Other Wallace-funded reviews have addressed educational after-school programs (Neild, Wilson, and McClanahan, 2019), leadership development (Herman et al., 2017), arts integration (Ludwig, Boyle, and Lindsay, 2017), and social and emotional learning interventions (Grant et al., 2017).

This research was undertaken by RAND Education and Labor, a division of the RAND Corporation that conducts research on early childhood through postsecondary education programs, workforce development, and programs and policies affecting workers, entrepreneurship, and financial literacy and decisionmaking.

This study was sponsored by The Wallace Foundation. Its current objectives are to improve the quality of schools, primarily by developing and placing effective principals in high-need schools; improve the quality of and access to after-school programs through coordinated city systems and by strengthening the financial management skills of providers; explore how children benefit when schools and after-school programs work together to align and improve experiences and climate to build social and emotional skills; strengthen access for disadvantaged children to high-quality summer learning programs; expand access to after-school arts learning; and build audiences for the arts. For more information and research on

these and other related topics, please visit The Wallace Foundation's Knowledge Center at www.wallacefoundation.org.

More information about RAND can be found at www.rand.org. Questions about this report should be directed to Jennifer McCombs (jennifer_mccombs@rand.org), and questions about RAND Education and Labor should be directed to educationandlabor@rand.org.

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Summary

The United States has a persistent and substantial student achievement gap based on family income. On the 2017 National Assessment of Educational Progress, 22 percent of fourth-grade students eligible for free or reduced-price lunch (an indicator of low family income) scored at or above the proficient level in reading, compared with 52 percent of students not eligible for the lunch program. Similar proficiency gaps exist for mathematics and other grade levels. There are also substantial achievement gaps between white and black students, white and Hispanic students, and native English speakers and English language learners. These achievement gaps are troubling because they translate into attainment gaps, whereby students from low-income families are less likely than peers from higher-income families to graduate from high school (70 percent versus 85 percent) and college (10 percent versus 60 percent) (National Center for Education Statistics, 2015, and Calahan and Perna, 2015).

Research evidence suggests that summer contributes to income-based achievement and opportunity gaps. A seminal meta-analysis of summer learning found that all students lost mathematics and reading knowledge over the summer (Cooper, Nye, et al., 1996). This study also indicated that losses were larger for low-income students, particularly in reading. Although recent studies are inconclusive on the absolute loss of achievement over the summer, they provide additional evidence that low-income students experience greater setbacks over the summer relative to their wealthier peers. Family income affects students' summer experiences. For instance, a recent study of children in the summer after they attended kindergarten found that 38 percent of children from households above the federal poverty level attended a day camp in the summer compared with 13 percent of children from near-poor families and 7 percent of children from poor families.

The summer time frame also has implications for the health of students from lower-income families. Namely, it is a time of greater food insecurity. A 2018 study found that only 15 percent of students who receive free or reduced-price lunches during the school year consistently received lunch in summer 2017 (Anderson et al., 2018). Summer is also a time when many students are at greater risk for increases in weight and body mass index, and underweight students display less-healthy growth patterns, relative to the school year.

Given the public interest in promoting achievement, opportunity, and wellness among all children and youth, it is not surprising that summer is looked to as a time to offer programming to achieve those goals. Summertime can be used to provide programs that support an array of goals for children and youth, including improved academic achievement, physical health, mental health, social and emotional well-being, the acquisition of skills, and the development of interests, so it is not surprising that there is a diverse array of programs in which youth participate. Summer programs serve a variety of student populations (e.g., low-income, special education, limited English-proficient, gifted, and general education students) and age

ranges, and are offered in a variety of settings, including schools, camps, community-based organizations, churches, workplaces, and homes.

Although summer programs can benefit children and youth who attend, not all programs result in improved outcomes. Program providers and funders must decide how best to invest limited resources to meet goals for summer programming. Policymakers increasingly expect that these decisions will be based on research evidence. Notably, the Every Student Succeeds Act (ESSA), which reauthorized the Elementary and Secondary Education Act, directs schools and districts to adopt programs that are supported by research evidence if those programs are funded by specific federal streams (Public Law 114-95, 2015).

This report is intended to provide practitioners, funders, and policymakers current information about the effectiveness of summer programs designed for children and youth entering grades K–12 so that they can make evidence-based investments. We summarize the evidence in Section One of this report and provide detailed information on each of the identified summer programs that meet ESSA evidence criteria in Section Two.

We focus on the evidence linking summer programs with outcomes and classify it according to the following three evidence tiers defined under ESSA and subsequent federal regulatory guidance:

- **Tier I represents strong evidence** and equates to well-conducted experimental studies, such as a randomized controlled trial, conducted in multiple sites with more than 350 students.
- **Tier II represents moderate evidence** and equates to rigorous quasi-experimental research, which approximates experimental research by identifying a valid comparison group that is similar to the intervention group participants on observed preintervention characteristics (e.g., test scores, grade, race, and gender), conducted in multiple sites with more than 350 students.
- **Tier III represents promising evidence** and equates to correlational studies with strong controls or randomized controlled trials and quasi-experiments not meeting all the requirements of Tier I or Tier II.

We do not classify evidence according to the fourth tier. Tier IV is fundamentally different from the first three tiers because it does not require existing evidence that an intervention causes specified outcomes. Because this review focused on assessing the strength of research evidence based on published findings, which is required for Tiers I–III but not for Tier IV, we assessed programs and interventions only for Tiers I through III. However, we encourage practitioners to propose implementing programs with Tier IV evidence, particularly because meeting Tier IV evidence requires that there is an ongoing evaluation of the program. As we argue later, the field in general would benefit from more evaluations of summer programs—particularly those endeavoring to benefit students in nonacademic realms.

We mapped study findings to ESSA evidence tiers because we expect that many readers will apply for ESSA funding to support summer programming. Several federal formula and grant programs require that proposed interventions are supported by Tier I, II, or III evidence. For example, ESSA Title I (Improving Basic Programs Operated by State and Local Education Agencies), Part A (Improving Basic Programs Operated by Local Educational Agencies), Sections 1003, 1008, and 1009 require using funds for programs associated with evidence at

these highest three tiers. However, information on program effectiveness should be useful to decisionmakers regardless of funding source.

We note that our evidence tier determination signals the level of confidence in the strength of the evidence that the studied outcomes improved as a result of the program. It does not signal the value of a program. In other words, simply because there might be strong evidence for one type of program, such as for a summer reading intervention, there might be stronger parent or youth demand for other types of summer programs, such as science programs, for which there might be less evidence. Neither does the strength of the evidence tell us about the magnitude of the benefits that accrue from the programming. For example, a summer reading program might lead to higher test scores in the treatment group compared with a comparison group, but that test score advantage might be modest.

We reviewed evaluations of summer programs implemented in the United States and serving students in the summer before kindergarten through the summer before 12th grade. Studies had to have a treatment and a comparison group and measure an outcome related to academic achievement, academic attainment, career preparation, engagement with schooling, social and emotional competencies, physical health, mental health, or the avoidance of risky behaviors.

Our report examines the following three research questions:

- What summer programs serving K–12 students in the U.S. education system have been recently evaluated?
- What summer programs have yielded evidence that meets ESSA Tier I–III standards?
- What are the characteristics of summer programs that meet ESSA Tier I–III standards?

We intended to examine a fourth research question investigating the factors that led to greater program effectiveness. However, due to missing and inconsistent information provided in documents regarding program content and implementation, we were unable to do so.

Findings About Program Effectiveness

Summer Programs Can Be an Effective Mechanism to Address the Needs of Children and Youth

Within our pool of rigorously studied programs, most of them succeeded in improving at least one youth outcome. This finding aligns with past research demonstrating program effectiveness. The summer timeframe presents an opportunity for meeting several types of children and youth needs, including academic, social, and emotional needs.

We Identified More Than 40 Summer Programs That Met ESSA’s Evidence Standards

The 43 programs we identified represent numerous options for practitioners and funders to consider. In Section Two, we describe each of these programs in detail to help guide decisionmaking. These summaries provide information about the content of the intervention, the research evidence behind it, the characteristics of children and youth who have benefited from it, and the study description and locale. Although few of these programs can be purchased “off the shelf,” the components of these programs can be replicated.

Many Types of Summer Programs Have Evidence of Effectiveness

We found evidence that academic learning, at-home learning, social and emotional well-being, and employment and career summer programs were effective in terms of improving youth outcomes (Figure S.1). Further, there is evidence of effective programs offered to all grade levels. These findings demonstrate that many different types of summer programs can benefit children and youth.

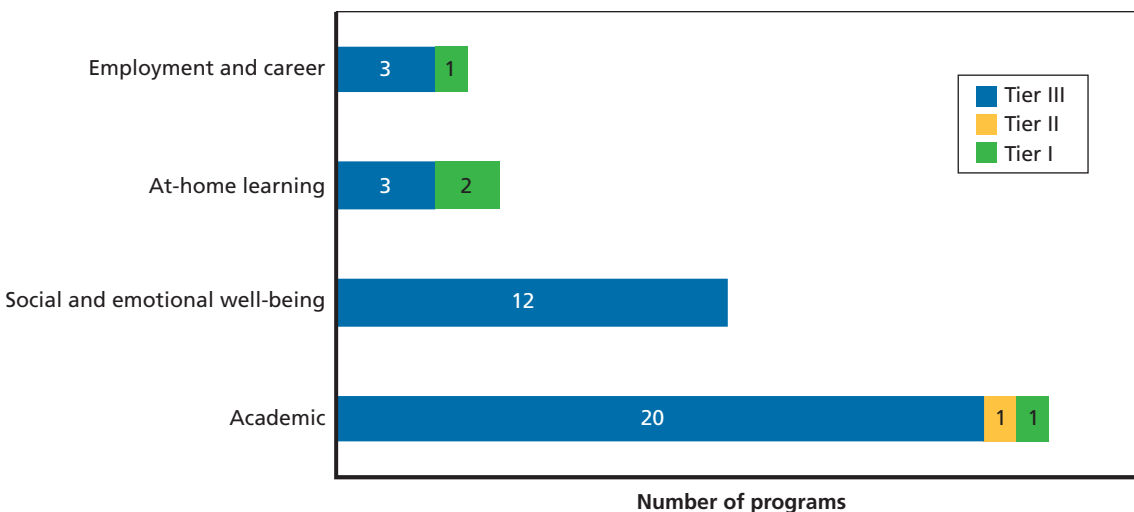
There Is More Promising Than Strong Evidence for Summer Programs Due to Study Designs

We found more promising (Tier III) than strong (Tier I) evidence for summer programs. Four reviewed programs met Tier I (strong) evidence of effectiveness, one met Tier II (moderate), and 38 programs met Tier III (promising) evidence criteria. The four programs that met Tier I evidence criteria include a program focused on academic learning, two books at home programs, and one summer employment program. One mandatory academic summer learning program reviewed met Tier II (moderate) evidence criteria. We note that almost half of the Tier III programs met the evidence statute for study design at Tier I or II but were moved to Tier III based on federal guidance recommendations regarding sample size and the number of sites studied.

Most of the Rigorously Evaluated Summer Programs Did Not Achieve All of the Measured Goals

Few programs were effective in meeting all measured outcomes. When we reviewed the outcomes from programs found to be effective, we saw that only 34 percent of all of the measured outcomes were significant and positive. We do not know if the number of measured outcomes reflects program goals or researcher interests. It may be that developers and researchers should temper expectations for what programs can accomplish in a short period of time. It might also be the case that program developers or researchers decide to measure an outcome in case it is affected even if the program content does not directly promote it. For example, one might think that a science program might affect reading outcomes because the students are reading,

Figure S.1
Number of Programs with ESSA Tier I–III Evidence, by Program Type



even if the program does not include direct instruction in reading. A researcher might therefore decide to measure reading comprehension, although the likelihood of a science program affecting reading comprehension scores in such a short time period is low.

Programs Promoting Social and Emotional Well-Being for Special Populations of Children and Youth Were Particularly Effective

All ten of the rigorous evaluations of programs intending to improve social and emotional well-being for specialized populations yielded only positive and significant findings. We hypothesize that the efficacy of these programs might be tied to the intense targeting of the program content to the needs of specific children and youth.

Findings About the Research Base

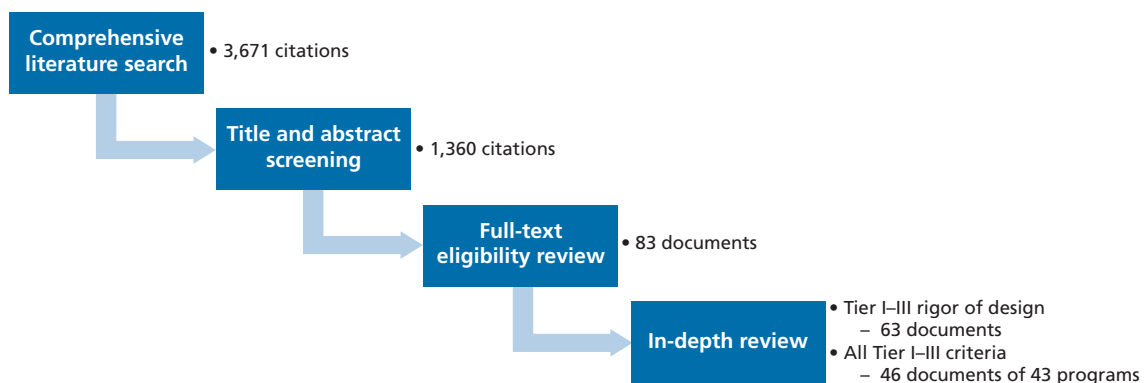
Articles Written About Summer Programs Far Outnumber Rigorous Studies Examining Outcomes

Our broad initial literature search for studies of summer programs yielded 3,671 citations. We excluded more than 2,000 of these based on a review of the article's abstract and conducted a full-text review of 1,360 documents. We identified 83 documents that met our eligibility criteria for an in-depth review. After the in-depth evidence review, we identified 46 documents that met evidence criteria for Tiers I–III. These 46 documents represent 43 separate programs (three programs had two studies with positive findings associated with them) (Figure S.2).

The Evidence Base Is Not Representative of the Summer Programming Available to Children and Youth

Although a diverse array of summer programs is available to children and youth, academic learning programs focused on reading were the most studied. There is much less evidence available on other types of programs and other outcomes. Some popular activities, such as sleep-away camps, have no associated rigorous evidence. Even within the academic programs, we found far more evaluations of reading than of mathematics, writing, or science. We expect the rigorous literature is more representative of public investment than of programming, and

Figure S.2
Review Process



we may see more evaluations of reading programs because the literature specifies that summer learning loss in reading disproportionately affects low-income students.

Recommendations

Decisionmakers Should Consider Summer a Viable Time to Promote Outcomes for Children and Youth

Summer is an opportune time to create programs that benefit children and youth, and we find evidence that many types of summer programs can be effective. That said, not all programs are effective. We encourage decisionmakers to create and invest in programs only if they are intentionally designed to meet specific needs, are of sufficient dosage, and can be well implemented.

Decisionmakers Should Carefully Consider Program Effectiveness for Particular Outcomes and Children and Youth Needs

We found evidence of program effectiveness for the majority of programs that were rigorously studied; however, programs were rarely effective in meeting all of the studied goals. For instance, it could be that a program designed to lessen risk-taking behaviors associated with drug and alcohol use was only effective in lessening the drug-related behaviors. If youth in a community struggle more with alcohol than drug use, the intervention might not be a good match, even though this review would classify the entire program as evidence-based. Further, the effectiveness we observed for social and emotional well-being programs targeted to special populations of students may indicate the importance of intentionally linking program content to student needs. When selecting or developing summer programs, practitioners should consider the participant information (and setting) provided in the intervention summaries in Section Two to assess whether a program might be a good fit.

Funders of Research and Researchers May Want to Focus Future Studies on Understudied Programs

We have far more research on academic programs focused on reading achievement than we do on other types of programs. There is less evidence on the efficacy of programs focused on mathematics, science, social and emotional well-being, career preparation, or physical health—all of which might be successfully addressed by summer programs.

Researchers Should Consistently Gather and Provide Program and Implementation Features When Reporting Study Findings

Many of the articles we reviewed lacked information that would have enabled us to evaluate whether certain implementation features were consistently associated with improved outcomes. Implementation features include staff qualifications, cost, training provided, teacher-participant ratios, participant attendance rates, and the like. Some documents contained insufficient detail about the intervention program content as well. We encourage researchers to include this information in future evaluations, not only to support evidence reviews and meta-analyses, but also to guide practitioners on program selection and implementation.

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Abbreviations

ANCOVA	analysis of covariance
ERIC	Education Resources Information Center
ESSA	Every Student Succeeds Act
GPA	grade point average
IRR	inter-rater reliability
LEA	local educational agency
OST	out-of-school time
QED	quasi-experimental design
RCT	randomized controlled trial
RDD	regression discontinuity design
SEL	social and emotional learning
STEM	science, technology, engineering, and mathematics
USDOE	U.S. Department of Education
WWC	What Works Clearinghouse

SECTION ONE
Evidence Review

Introduction

Summertime—which makes up about one-quarter of the calendar year—can be used to provide programs that support an array of goals for children and youth, including improved academic achievement, physical health, mental health, social and emotional well-being, the acquisition of skills, and the development of interests. There are many types of summer programs designed to meet such goals. Summer programs serve an array of student populations (e.g., low-income, special education, limited English-proficient, gifted, and general education students) and age ranges in a variety of settings, including schools, camps, community-based organizations, workplaces, and homes.

Although summer programs can benefit children and youth, not all programs have demonstrated evidence of improving youth outcomes. Program providers and funders who must decide how best to invest limited resources to meet goals for children and youth in the summer are increasingly encouraged by policymakers to base their decisions on research evidence. Notably, the Every Student Succeeds Act (ESSA), which reauthorized the Elementary and Secondary Education Act, requires schools and districts to adopt programs that are supported by research evidence when supporting those programs with funding from most federal sources (Public Law 114-95, 2015).

This report, which provides a systematic review of the literature on summer programming, is intended to provide guidance regarding summer interventions that, in our estimation, will satisfy the ESSA evidence requirements. This review should help program providers (even those not applying for ESSA funding), policymakers, and funders make evidence-based investment decisions regarding summer programs for children and youth.

Why Invest in Summer Programs?

Public and philanthropic funding for summer programs is driven by a desire to fill the academic and opportunity gaps that exist between children and youth from lower- and higher-income families and support the acquisition of valuable skills and experiences, particularly for students who otherwise would not have access to such opportunities.

The United States has a persistent and substantial student achievement gap based on family income. On the 2017 National Assessment of Educational Progress, 22 percent of fourth-grade students eligible for free or reduced-price lunch (an indicator of low family income) scored at or above the proficient level in reading, compared with 52 percent of students not eligible for the lunch program. Similar proficiency gaps exist in mathematics and for other grade levels. There

are also substantial achievement gaps between white and black students, white and Hispanic students, and native speakers and English language learners.

These achievement gaps are troubling because they translate into attainment gaps, whereby students from lower-income families graduate at lower rates than peers from higher-income families from high school (70 percent versus 85 percent) and college (10 percent versus 60 percent) (National Center for Education Statistics, 2015, and Calahan and Perna, 2015). Closing the achievement gap could increase the economic mobility of youth from low-income families.

Lower-income and higher-income students also have different opportunities and experiences outside of school throughout their lives. For instance, approximately 59 percent of school-aged children from low-income families participate in sports, compared with 84 percent of children from wealthier families (i.e., those with annual incomes of \$75,000 or more). These types of opportunity gaps exist for private lessons (e.g., piano lessons) and engagement in clubs as well (Pew Research Center, 2015).

Summer contributes to income-based achievement and opportunity gaps. A seminal meta-analysis of summer learning found that all students lost mathematics and reading knowledge over the summer, although the loss in mathematics knowledge was generally greater than in reading (Cooper, Nye, et al., 1996). This meta-analysis also indicated that losses were larger for low-income students, particularly in reading. Although recent studies are inconclusive on the absolute loss of achievement over the summer, they provide additional evidence that low-income students experience greater setbacks over the summer relative to their wealthier peers. Most studies have found that low-income students learn less *relative* to their wealthier peers even if they do not experience knowledge losses over the summer (Downey, von Hippel, and Broh, 2004; McCoach et al., 2006; Benson and Borman, 2010; Ready, 2010; Augustine et al., 2016; and von Hippel and Hamrock, 2019). Studies have also found that students in low-income neighborhoods (Benson and Borman, 2010) and schools (White et al., 2014, and Atteberry and McEachin, 2016) experience larger losses over the summer relative to peers in wealthier neighborhoods or schools.

We also know that family income affects students' summer experiences, as it does out-of-school time (OST) experiences in general. For instance, a recent study found that 38 percent of rising first-grade children from households above the federal poverty level attended a day camp in the summer compared with 13 percent of children from near-poor families and 7 percent of children from poor families. Children from lower-income families were also less likely to have engaged in such experiences as visiting the beach, a state or national park, a zoo or aquarium, or an amusement park (Redford, Burns, and Hall, 2018). Another analysis examining children's time use during the summer months found that children from lower-income households watched more television and spent less time talking with parents than children from higher-income households (Gershenson, 2013).

Summer is also associated with health concerns. It is a time of greater food insecurity for children and youth from low-income families. A 2018 study found that only 15 percent (three million students) of the 20 million who receive free and reduced-price lunches during the school year consistently received summer lunches in 2017 (Anderson et al., 2018). Summer is also a time when all students are at greater risk for increases in weight and body mass index, and underweight students display less-healthy growth patterns, relative to the school year.

Given the public interest in promoting achievement, opportunity, and wellness among all children and youth, it is not surprising that summer is looked to as a time to offer program-

ming to achieve those goals. Indeed, research provides some evidence that summer programs can achieve some of these goals. Meta-analyses of academic programs have found benefits of programs intended to improve student academic achievement (Cooper et al., 2000; Kim and Quinn, 2013; and Knopf et al., 2015). Also, a meta-analysis of research on summer camps for students with chronic health challenges found benefits to self-perception (Odar, Canter, and Roberts, 2013). Further, individual research studies have found positive benefits from some mandatory summer academic programs, voluntary summer academic programs, read-at-home programs, youth employment programs, and summer camps for special student populations. This report summarizes these findings, describing the evidence to date undergirding specific types of summer programs.

ESSA Funding Can Support Summer Programming

Because many readers of this report may want to consult ESSA as a source of funding for summer programs, we used the legislation and accompanying guidance as the standard by which to evaluate the strength of evidence for studied interventions. Box 1.1 lists some of the ESSA funding streams that may be leveraged to support some types of summer programs. Some of this funding comes from block grants distributed to states, which then distribute monies to local educational agencies (LEAs) via formulas. Many ESSA funding streams, referred to as Title I, Title II, etc., provide latitude to states, districts, and schools in the form of flexible block-style grants to support specific student populations. Other funding comes in the form of competitive grants. The largest competitive federal funding stream focused on OST programming is the 21st Century Community Learning Centers grant (21st CCLC; ESSA, Title IV, Part B). These funds flow by formula to states and then by competition to school or community providers who work with students outside of the normal school day, including before school, after school, during the weekend, and in the summer—or in expanded learning time programs that extend the school day. The grants are intended to improve academic achievement but also to provide students with a broad array of activities and programs that complement academics and engage their families. The discretionary competitive grants listed in Box 1.1 are not targeted at summer programming but should be eligible sources of funding. For example, the LEARN state literacy grants can be used for OST instruction. Applicants must use the funds for developing and implementing comprehensive literacy instruction plans primarily during the regular school day, but instruction may be augmented by OST programming (ESSA Title II[B][2] Sec. 2224[c][1][C] and ESSA Sec. 2224[e][2]).

Box 1.1

Examples of Federal Funding Streams Through ESSA That Can Support Summer Programs

- Improving Basic Programs Operated by Local Educational Agencies (Title I, Part A)
- Migrant Education Program (Title I, Part C)
- Improving Teacher Quality State Grants (Title II, Part A)
- Literacy Education for All, Results for the Nation (LEARN) State Literacy Discretionary/Competitive Grant (Title II, Part B)
- Student Support and Academic Enrichment Program (Title IV, Part A)
- 21st Century Community Learning Centers Grants (Title IV, Part B)
- Promise Neighborhoods Discretionary/Competitive Grant (Title IV, Part F)
- Full Service Community Schools Program Discretionary/Competitive Grant (Title IV, Part F)

ESSA Legislation Defines “Evidence-Based”

ESSA legislation includes several provisions that require interventions to be supported by evidence when a state, LEA, or school uses federal funds to pay for interventions. The policy defines four *tiers* of evidence that reflect varying degrees of methodological rigor. ESSA legislation categorizes the first three tiers as *strong* (Tier I), *moderate* (Tier II), and *promising* (Tier III).

Tier IV is fundamentally different from the first three tiers because it does not require demonstrated evidence that links an intervention to targeted outcomes.¹ Instead, Tier IV requires “demonstrating a rationale” for the intervention achieving its intended goals and an ongoing evaluation that aims to analyze the effects of the intervention. Because this review focused on assessing strength of research evidence based on published findings, which is required for Tiers I–III but not for Tier IV, we assessed programs and interventions only for Tier I–III evidence.

These tiers signal the level of confidence that the studied outcomes improved due to the program. That is, if a study’s resulting evidence does not meet the requirements of Tiers I–III, there is little confidence that the program is responsible for the change in the studied outcome.

The ESSA legislation gives considerable flexibility to states and LEAs in deciding which “activity, strategy, or intervention” to implement and allows for funding of commercially available interventions (those created by developers) and locally developed interventions. Practitioners might also choose to replicate the key features of a commercially available intervention while adapting other elements of that intervention to address local needs and priorities.

The Department of Education Issued Nonbinding Guidance on Determining Evidence

Because the ESSA legislation does not fully define what qualifies as “well-designed” or “well-implemented” for Tier I–III evidence, the U.S. Department of Education (USDOE) issued *non-regulatory* (i.e., nonbinding) guidance that provides recommended practices (USDOE, 2016). The guidance relies on standards established by the What Works Clearinghouse (WWC), a USDOE-run organization that reviews existing research on programs, products, practices, and policies in education to provide educators with information needed to make evidence-based decisions. Based on the legislation and the guidance,

- **Tier I represents strong evidence** and comes from a rigorous experimental design for causal inference, such as a randomized controlled trial (RCT). In an RCT, participants are randomly assigned to either receive the intervention or participate in a comparison group that does not receive the intervention.
- **Tier II represents moderate evidence** and must come from rigorous quasi-experimental design (QED), which approximates an experimental design by identifying a comparison

¹ ESSA (Title VIII, Sec. 8101[21][A]) defines Tier IV as “(ii) (I) demonstrates a rationale based on high-quality research findings or positive evaluation that such activity, strategy, or intervention is likely to improve student outcomes or other relevant outcomes; and (II) includes ongoing efforts to examine the effects of such activity, strategy, or intervention.” Although our review does not identify interventions that meet Tier IV evidence, we do encourage practitioners to propose programs meeting this tier. By doing so, they will identify or develop programs that are also being evaluated, which will add to the knowledge base of what works for youth in the summer.

group that is equivalent to the intervention group on observed preintervention characteristics (e.g., test scores, grade, race, and gender).

- **Tier III represents promising evidence** and comes from studies that include a comparison group that did not receive the intervention, but the comparison group participants are not as rigorously matched to intervention group participants as required for Tier II evidence. To address selection biases that may result, statistical techniques must be used to reduce or account for differences between the intervention and comparison groups, such as controls for students' prior test scores.

In order to satisfy Tier I–III requirements, an intervention's evidence should also show a statistically significant and positive effect of the intervention and not be overridden by statistically significant and unfavorable effects from Tier I or Tier II studies.

Tier I and Tier II interventions should satisfy the following additional criteria related to the size and composition of the study sample(s):

- The evidence should be based on a large sample (at least 350 students or 50 or more groups that each contain ten or more students) and be conducted in multiple sites—i.e., LEAs (e.g., districts), localities, or states.
- For practitioners to use the evidence to support funding for an intervention, they should also show that the evidence is based on a demographic sample or setting (or both) that reflects the population of students or schools set to receive the intervention to satisfy Tier I (or Tier II) requirements.

Table 1.1 summarizes the evidence constructs from both the legislation and the subsequent guidance. We list the constructs presented in either the legislation or the guidance first, specify the question each is addressing, and list the source for the construct, the federal stipulation, and the relevant tiers.

Some ESSA Funding Streams Require Stronger Evidence Than Others

With some exceptions, ESSA leaves to each state the decisions about which level of evidence to require for different activities under the law. For some programs, such as Title II, Part A (“Supporting Effective Instruction”), the evidence tier required depends on the use of the funds and each state's individual determination of whether or not evidence is reasonably available for a specific evidence-based use of funds. By contrast, Title I, Part A (“Improving Basic Programs Operated by State and Local Educational Agencies”) does not permit the use of Tier IV evidence for one of its available funding sources. Title I school improvement plans (comprehensive and targeted) must include at least one intervention meeting Tier I–III evidence to receive Section 1003 funds.

Study Purpose and Research Questions

Although we use ESSA evidence standards in this review, this report is intended to be useful to support decisionmaking regardless of funding source. Programs might draw on private

Table 1.1
Summary of Evidence Requirements from ESSA Legislation and Recommendations from U.S. Department of Education Guidance

Construct	Key Question	Source	Requirement or Recommendation	Relevance to Tiers
Criteria Used in the Tier Assessments Presented in This Report				
Rigor of study design	Can the study provide a credible assessment of whether the program is responsible for the outcomes?	ESSA	Study must use a well-designed and well-implemented experimental, quasi-experimental, or correlational design.	Tiers I–III
	Does the evidence meet WWC requirements?	Guidance	Tier I–II studies must meet WWC standards with or without reservations.	Tiers I–II
Positive result	Did the program improve any outcomes?	ESSA	There must be at least one statistically significant improvement.	Tiers I–III
Broad application	Has the program demonstrated its effectiveness in multiple places and with a sufficiently large group of students?	Guidance	A study (or studies) must involve a large sample ($n > 350$) and more than one site (school district).	Tiers I–II
Absence of harm	Is there any evidence from rigorous (Tier I or II) studies that this program harms students?	Guidance	There should be no negative findings that would cast doubt on the overall benefit of the program for students.	Tiers I–III
Overall effectiveness	Considering all the evidence from rigorous studies of this program, how effective is the program?	Guidance	Decisionmakers should consider the overall body of evidence on the program.	Tiers I–III
Additional Determination to Be Considered by Decisionmakers				
Similarity	Has this program improved outcomes for similar students or in a similar context?	Guidance	Evidence should be from a similar population (of students) and/or context (e.g., locale, type of education setting).	Tiers I–II

funding—from parents, foundations, or corporate donors—or on public funding from federal, state, or local governments, and some programs draw on multiple sources. We intend to provide practitioners, funders, and policymakers current information about summer programs designed for children and youth entering grades K–12 so that they can make evidence-based investments. Our evidence review addressed the following research questions:

- What summer programs serving K–12 students in the U.S. education system have been recently evaluated?
- What summer programs have yielded evidence that meets ESSA Tier I–III standards?
- What are the characteristics of summer programs that meet ESSA Tier I–III standards?

We summarize the evidence in Section One of this report and provide detailed information on each of the identified evidence-based summer programs in Section Two. Most of these programs are not commercially available programs that could be purchased from a provider. We attempt to provide enough information on these programs in Section Two so that they could be replicated in other settings.

Report Organization

We began Section One of this report by discussing how summer programming can be used to close achievement and opportunity gaps and to support goals, such as academic achievement and attainment, social and emotional development, mental and physical health, and skills acquisition. Chapter Two details our literature review methods and how we applied ESSA legislation and guidance to determine the tiers of evidence for the programs. We then discuss the results of our systematic evidence review, describing evidence-based summer programs (Chapter Three). We conclude the report with overarching findings from the evidence review and recommendations for policymakers, practitioners, and researchers (Chapter Four).

Section Two contains summaries for each intervention that has rigorous evidence and positive findings associated with it. These summaries provide information about the content of the intervention, the research evidence behind the intervention, the characteristics of children and youth that have benefited from it, and the study description and locale. These intervention summaries should be helpful to those looking to learn more about specific types of evidence-based summer programs.

The Appendix presents additional detail on the literature search and the in-depth document reviews.

Review Methods

The previous chapter provided an overview of the ESSA statute and the nonregulatory guidance from the USDOE. This chapter starts with a description of how we applied the statute and guidance in our review. The rest of the chapter summarizes the eligibility criteria that determined the scope of our review. These criteria were set to limit the reviewed evidence to summer programs with outcomes relevant to ESSA. Technical aspects of our approach are described in detail in the Appendix. We conclude this chapter by addressing our first research question: What summer programs serving K–12 students in the U.S. education system have been recently evaluated?

Applying ESSA Evidence Tiers

Our review considered the ESSA evidence tiers at the following three levels:

- **Finding:** the estimated effect of an eligible intervention on an eligible outcome presented in a document or publication that met all eligibility requirements (which are described in more detail later in this chapter). This is our unit of analysis, i.e., each finding is assigned an ESSA tier rating.
- **Study:** For the purposes of our review, a study is defined as research that was conducted on an intervention by a specific research team (or a specific researcher), in a specific location, and using a specific sample. In cases where a study had multiple documents reporting results for the same sample (e.g., for different outcomes and/or at different time points), we considered the collective evidence based on all eligible findings presented in all eligible documents. A study is then assigned the highest rating across all of its relevant findings.
- **Program:** cumulative assessment of evidence across all studies that evaluated the same program or intervention. The ESSA tier of a program is determined based on collective evidence reviewed across all eligible studies that evaluated that program.

We should note that the nested review approach described above is not a requirement of the ESSA statute or guidance. We followed this approach to facilitate the characterization of the evidence base at the different levels as researchers, practitioners, and policymakers may be more (or less) interested in results at each level.

As described in Chapter One, our application of the Tier I and Tier II ratings directly followed the ESSA legislation and the USDOE’s nonregulatory guidance.¹ Specifically, we relied on WWC evidence standards when assessing whether the finding is produced by a research design and/or statistical method that minimized the influence of unrelated factors (or confounders) to allow the presented evidence to be attributable to the program being investigated (“rigor of the study design” criterion). For Tiers I through III, we required meeting two additional criteria related to (1) whether the result was positive and statistically significant (“positive result” criterion) and (2) the absence of any credible evidence that suggests the program may have negatively affected some relevant outcomes (“absence of harm” criterion). For Tiers I and II, we also required the study to have used a large sample that covered multiple sites (“broad application” criterion).² It is important to note that a study may meet the rigor, positive result, and absence of harm criteria for Tier I or II but may not meet the broad application criterion. Although our review procedures allowed an intervention with multiple studies to meet the latter criterion based on the collective size and composition of each study’s sample, we did not encounter such a case in our review.

The ESSA legislation and the nonregulatory guidance are less clear about how to assess the rigor of the study design criterion for Tier III. The law requires evidence from “a correlational study that statistically controls for selection bias,” but the term *correlational study* is very broad. The department’s guidance defines a correlational study as one that “uses sampling and/or analytic methods to reduce or account for differences between the intervention group and a comparison group” (USDOE, 2016, p. 9). We operationalized this definition to include studies that used RCTs or QEDs that did not meet WWC standards for design issues but applied appropriate statistical adjustments to alleviate these issues. For example, an RCT that encountered high levels of attrition that distorted the equivalence of the treatment and control groups or a quasi-experimental study that failed to achieve WWC’s threshold for equivalence on key baseline covariates related to selection could meet the Tier III rigor criterion by controlling for the key baseline covariates in regression models. More details about how study ratings were determined is provided in the Appendix.

In sum, the three tiers of evidence based on ESSA and accompanying guidance can be summarized as follows:

- **Strong** (Tier I): emerging from well-conducted experimental studies conducted in multiple sites with more than 350 students
- **Moderate** (Tier II): emerging from well-conducted quasi-experiments conducted in multiple sites with more than 350 students
- **Promising** (Tier III): emerging from correlational studies with strong controls or RCTs and quasi-experiments not meeting all the requirements of Tier I or Tier II.

¹ The reviews conducted for this report are not official or formal WWC reviews and the decisions regarding whether study findings align with the ESSA tiers should be seen as unofficial determinations made by the study team. It is also important to note that each state educational agency, and some LEAs, have autonomy to determine how to best assess the existing body of research against the ESSA evidence standards. Thus, the results presented in our review may not perfectly align with how others classify these same programs and studies.

² As mentioned in Chapter One, Tiers I and II impose additional criteria pertaining to the match between the characteristics of a locality and the demographic and setting characteristics of the study that generated the evidence supporting the program that the locality would implement. We do not assess these criteria and leave that assessment to the stakeholders in that locality.

Limitations to Our Approach

We focus on the evidence linking summer programs with outcomes and classify it according to the ESSA evidence tiers. Tiers I and II require studies done on large samples and across multiple sites. Program evaluations can be combined to achieve large samples and multiple sites, but we do not have instances of this. As new research is conducted, programs classified as Tier III in this report may meet higher tiers of evidence by combining sample sizes or sites across studies. Similarly, some manuscripts do not provide sufficient information on study methods for us to classify their evidence as meeting Tiers I or II. The evidence in these reports might be stronger than we can detect, although we would classify the evidence as meeting Tier III. Also, we intended to look across rigorous studies and draw conclusions about program features and implementation practices. Although we do conduct this analysis, the reviewed manuscripts contain thin and inconsistent information on implementation, prohibiting us from drawing comprehensive conclusions.

Eligible Interventions

Our review included commercially available and locally developed summer programs that

- were implemented and evaluated in the United States
- served students in the summer before kindergarten through the summer before grade 12
- offered at least half of the services during the summer.

The first two eligibility criteria reflect ESSA's emphasis on the relevance of the study settings and participants to the settings and populations that will receive the program in the future. The second criterion was also motivated by the funding streams available through ESSA, which focus on students at the elementary and secondary levels. The third criterion aimed to limit the review to programs whose primary activities were delivered in the summer and exclude year-long programs for which effects of summer activities could not be isolated from those delivered during the school year.

Consistent with the other ESSA-based evidence reviews conducted by RAND (Herman et al., 2017, and Grant et al., 2017), this review *did not* impose an eligibility criterion related to whether an intervention is “branded” (i.e., created and marketed commercially by a developer) or “nonbranded” (i.e., a set of activities or services, some of which could resemble those of branded interventions but are typically developed locally and are not marketed under a specific name). The ESSA legislation does not specify any restrictions or preference related to the name or label of an intervention to be implemented by a state educational agency or LEA as long as it meets the relevant evidence requirements of the funding source. Based on the authors' personal communication with the USDOE, Herman et al. (2017, p. 15) provides support for this argument: “The label or brand attached to a program or intervention included in a research study is less important than the activities, strategies, and practices that constitute that program or intervention.”

Eligible Outcome Domains and Measures

ESSA provides wide flexibility for what are considered *relevant outcomes*. We reviewed the legislation to appropriately determine the set of eligible outcome domains and associated measures. Table 2.1 lists the resulting set of outcome domains covered by our review and presents some sample measures included in each domain.

Other Eligibility Criteria

Our review used the following additional eligibility criteria related to documents and study designs:

- The document must have been publicly available, in English, and published from 2000 to July 2017.
- Study analyses must have compared the outcomes of two distinct groups of students.
- The comparison condition must have been no summer program participation, business as usual (i.e., the study did not manipulate what the comparison students did during the summer), or receipt of some summer services that were not expected to influence the outcomes targeted by the focal summer intervention.

Table 2.1
Outcome Domains and Sample Measures

Outcome Domain	Sample Measure Included
Academic achievement: math	<ul style="list-style-type: none"> • Scores from standardized assessments (e.g., state tests, commercial standardized assessments) • Course grades
Academic achievement: reading	
Academic achievement: science	
Academic achievement: writing	
Academic achievement: general	<ul style="list-style-type: none"> • Grade point average (GPA)
Academic and career attainment	<ul style="list-style-type: none"> • Grade retention and progression • High school graduates and dropouts • High school credits earned by the end of tenth grade • College enrollment
Engagement with schooling	<ul style="list-style-type: none"> • Attendance • Attitudes toward school, academic engagement • Interest in science, technology, engineering, and mathematics (STEM)
Social and emotional competencies	<ul style="list-style-type: none"> • Intrapersonal and interpersonal competencies (e.g., leadership skills, academic self-efficacy, self-esteem, social skills)
Physical health	<ul style="list-style-type: none"> • Physical activity • Nutrition and healthy eating • Weight management (e.g., body mass index)
Mental health	<ul style="list-style-type: none"> • Anxiety • Depression
Avoidance of risky behavior	<ul style="list-style-type: none"> • Avoidance of alcohol • Avoidance of risky sexual behavior • Violent or drug crime arrests

We imposed the second criterion to exclude “pre-post” studies that compare the outcomes of the same students before and after participating in the summer program because such analyses do not meet ESSA evidence standards. The third criterion aimed to ensure that evidence presented in a document isolated the outcomes associated with a specific intervention and excluded studies contrasting two summer interventions or two versions of the same intervention delivered in different manners that targeted the same outcome measures.

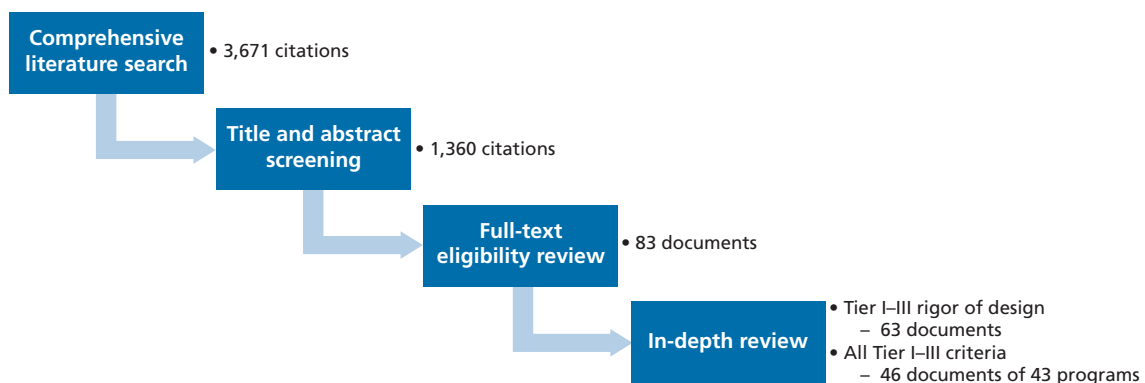
Literature Search and In-Depth Document Reviews

Figure 2.1 illustrates the progressive stages of our review process. We started with a comprehensive search of the major electronic databases of the scientific literature for documents of summer programs. This search yielded 3,671 unique citations. Reviewers then screened the titles and abstracts of these citations against the eligibility criteria pertaining to interventions and outcome domains described above. At the conclusion of this step, 1,360 citations remained. Reviewers then completed full-text reviews of these documents with respect to the remaining eligibility criteria (e.g., whether outcomes of two distinct groups were contrasted and what constituted the comparison condition) and identified 83 documents that were subject to in-depth reviews. In the in-depth reviews, reviewers applied the ESSA evidence-based definitions to conclude that 63 documents represented studies that satisfied the rigor criterion for Tiers I–III. Of these 63, 46 satisfied all criteria required to meet our operationalization of the ESSA Tier I–III evidence standards. These 46 documents examined 43 programs. Further details of the literature search and the in-depth document reviews can be found in the Appendix.

State of the Rigorous Literature

Before we discuss the programs we identified that met an ESSA evidence tier of I to III, we describe the state of the literature on summer programming. We classified studied interventions based on the content of the intervention or its specified goals as reported by document authors. The interventions were classified into five categories: (1) academic learning, (2) at-home learn-

Figure 2.1
Review Process



ing, (3) employment experiences and preparation, (4) social and emotional well-being, and (5) physical health. Academic learning studies included those that specifically offered programming related to reading, mathematics, science, or other academic subjects. Studies examining at-home learning were differentiated from the academic learning programs because they occurred outside of the classroom, although they are generally designed to improve reading (with some aimed at improving math). These included programs in which children participated in book fairs and then read during the summer and programs in which children were sent books during the summer. These may have had a home visit over the summer, or a library meeting, but included no classroom or instruction time. Employment experiences and preparation studies were those focused on summer jobs or trying to interest youth in certain career paths. Studies of social and emotional well-being programs included those targeting positive life skills, such as self-sufficiency, self-regulation, and social skills; the promotion of mental health (e.g., reducing anxiety); or the avoidance of risky behaviors, such as drug use or sexual activity. Physical health studies included programs targeting children's physical health, such as maintaining a healthy weight.

As noted above, we identified 63 rigorous studies of summer programs. Of the rigorous studies we identified, we found the following results:

- **There are few well-conducted experimental and quasi-experimental studies that met the multisite and large sample criteria.** Only four studies met all the requirements for providing Tier I evidence. One study met Tier II evidence standards.
- **The rigorous literature is not representative of the variety of summer programming, the children and youth participating in all summer programs, or the potential outcomes summer programs target.** About half of the 63 studies evaluated programs focused on academic learning, followed by programs promoting social and emotional well-being (19 percent), at-home learning (17 percent), and youth employment and career training (8 percent). We only identified one study examining a program focused on improving physical health. Because the majority of studied programs were academic (often targeting reading exclusively), reading achievement was by far the most-studied outcome domain.

Almost half of the studies (45 percent) examined programs offered to elementary school children, with high school programs studied in one-fifth of the studies. Some types of programs may be particularly relevant and intentionally target specific grade levels. For instance, all examined employment and career programs targeted high school students. Other types of programs were studied across multiple grade levels. However, at-home learning programs, for the most part, targeted elementary grade students. Although the academic learning programs studied were most often offered to elementary school students, this type of program has been studied at all grade levels. All studied programs offered to children prior to kindergarten were academic learning programs.

About half of the studies were of programs in which a majority of the participants were low income (51 percent). The majority of academic learning and at-home learning programs targeted either low-income students, which may result from the public interest in closing the achievement gap between lower-income youth and their higher-income peers, or students performing below grade level.

- **Although the majority of studies found evidence of effectiveness, studies did not typically find evidence that programs were effective in producing all measured outcomes.** Studies had from one to 26 findings, and the 63 rigorous studies measured a total

of 288 outcomes; however, only 97 of those outcomes (34 percent) were positive and statistically significant.

In Chapter Three, we take a closer look at the programs with evidence meeting ESSA Tiers I–III.

Evidence-Based Summer Programs

Chapter Two described our method for conducting the evidence review and the status of the research base. In this chapter, we focus on the 43 summer programs that align with the ESSA evidence standards. Each of these programs led to at least one positive youth outcome, but few programs were found to improve all of the outcomes tested. Because of study design and the sample size and multisite guidance criteria for well-implemented and well-designed studies, we identified more promising (Tier III) than strong (Tier I) or moderate (Tier II) evidence.

What Level of ESSA Tier I–III Evidence Exists for Summer Programs?

We found that 43 programs, approximately 75 percent of the rigorously studied programs, had evidence that aligned with ESSA Tiers I–III. A program’s level of evidence was classified by the highest tier of evidence assigned to any of its outcomes. Therefore, a program that produced findings at the strong and promising levels of evidence was classified as having strong evidence. Similarly, a program that produced promising levels of evidence in one study but null results in another was classified as having promising evidence. Four programs met Tier I evidence standards, one met Tier II standards, and 38 met Tier III standards.

The four programs that met Tier I evidence, featured in Box 3.1, include a program focused on academic learning, two programs focused on at-home learning, and one employment program. Two of these programs examined findings in multiple domains, and the two at-home learning programs solely focused on reading achievement.

Of the 38 programs that met Tier III evidence standards, a little under half met the evidence statute for study design at Tier I or II but were moved to Tier III based on guidance recommendations for sample size and multiple research sites. For these programs, we have greater confidence that the intervention caused the measured outcome, but less confidence that the results would be widely replicated in other settings with other youth.

Although we identified 43 programs with evidence of effectiveness, few met all of the measured goals. Only 41 percent of outcomes measured in studies of these programs were positive and statistically significant. In some cases, the measured outcomes were not directly addressed in the summer program (improved student attendance after a summer academic program, for example), which may account for insignificant findings. In other cases, only some of the outcomes directly addressed in the summer program were positive and statistically significant. For instance, one academic program for struggling rising first-grade students improved student phonemic awareness but had no impact on 14 other measures of reading.

Box 3.1**Programs Meeting ESSA Tier I Evidence Criteria**

- **National Summer Learning Project:** Academic learning program whose goal was to increase academic achievement, social and emotional learning (SEL) competencies, and positive behavior. These five- to six-week, voluntary, district-led summer programs were offered at no cost to low-income, urban elementary students in one of five districts (Boston, Mass.; Dallas, Tex.; Duval County, Fla.; Pittsburgh, Pa.; or Rochester, N.Y.) who were in third grade as of spring 2013. The study focused on rising fourth graders in the first summer and rising fifth graders the following summer. Treatment group students outperformed control group students in mathematics in the fall after the first summer (Tier I). After the second summer, compared with control group students, treatment students with high attendance had stronger mathematics, language arts, and social-emotional skills, and the academic benefits lasted into the spring (Tier III).
- **Project READS:** An at-home learning program intended to close income-based gaps in reading comprehension by encouraging independent summer reading among students in high-poverty schools. Program features and implementation varied across studies and covered rising third through fifth graders. Different versions of this program have been studied over time. In six documents, two documents showed at least one positive and significant finding (one met ESSA Tier I evidence criteria, the other met ESSA Tier III evidence criteria), while the other four described null findings. The versions of Project READS that were effective included scaffolding and presummer lessons from teachers.
- **School Year Book Fair and Voluntary Reading Program:** An at-home learning program designed to provide low-income children access to self-selected trade books to ameliorate the summer reading setback. Rising first- and second-grade students from 17 high-poverty schools received a supply of self-selected trade books on the final day of school over a three-year period. Students selected to receive books over the summer had higher reading achievement after three summers than control group students.
- **NYC Summer Youth Employment Program (SYEP):** SYEP is an employment and career program intended to introduce and prepare low-income, high school youth for future careers; foster skills important for success in the labor market; and provide supplemental income to families. This program has been studied twice and showed positive results from both studies. Treatment students had stronger school year attendance and participation in and performance on the Regents Exams.

The programs for which all measured outcomes were positive and statistically significant only measured (or only reported) one outcome.

What Type of Summer Learning Programs Demonstrate ESSA Tier I–III Evidence?

As described in Chapter Two, we classified programs into five major types: academic, at-home learning, social and emotional well-being, employment, and physical health. We found evidence of effective academic, at-home learning, social and emotional well-being, and employment and career programs (Figure 3.1). The single physical health program that was rigorously studied did not meet ESSA Tiers I–III. There is evidence supporting programs offered at each grade level (Figure 3.2) and in a variety of settings, including at school, community-based organizations, and home. Unfortunately, we were not able to examine what prior research indicates are the most important implementation factors, such as instructional dosage, youth attendance, or program quality, due to a lack of consistently reported data within the documents.

Below, we briefly summarize the evidence on effective programs by program type. Then, in Tables 3.1–3.4 (which appear at the end of this chapter), we delve into the characteristics of the programs, including detail on the outcomes that were measured, the population targeted for the intervention, and where we have evidence and no evidence of effectiveness for each program type. We also list rigorously studied programs with no evidence of effectiveness at the bottom of each table in gray. Additional information about each program meeting Tier I–III

Figure 3.1
Number of Summer Programs with ESSA Tier I–III Evidence, by Program Type

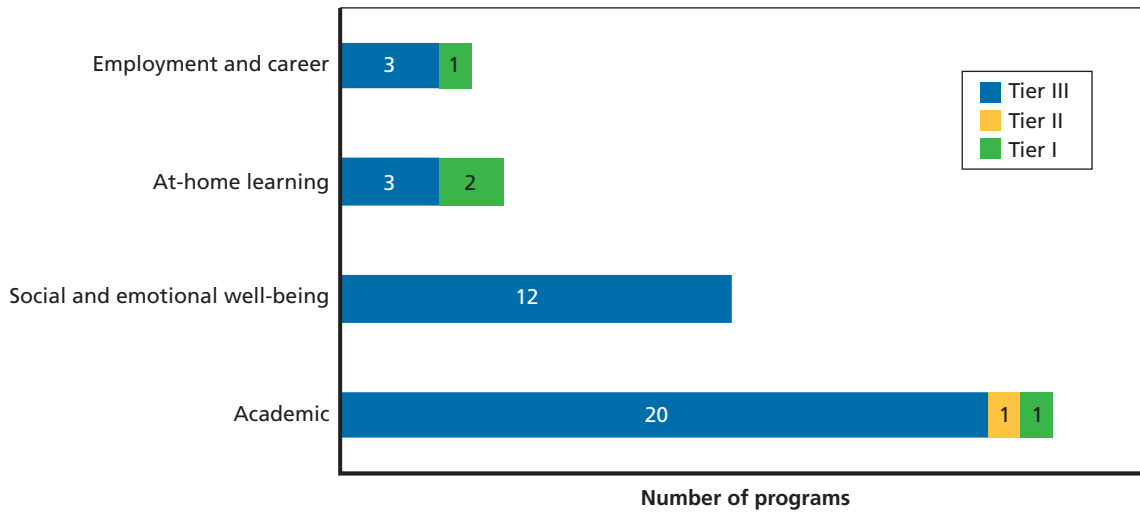
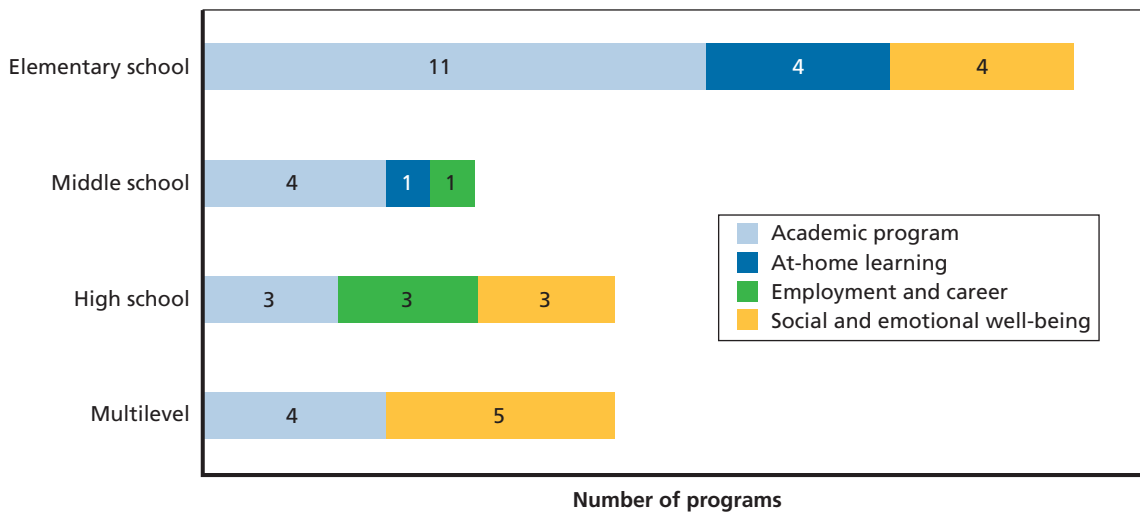


Figure 3.2
Number of Summer Programs with ESSA Tier I–III Evidence, by Grade Level and Program Type



ESSA evidence standards, including content, timing, and effectiveness of programs, can be found in Section Two in the intervention summaries.

There are many similarities across the evidence-based programs. The vast majority were locally developed and are not commercially available. For each type of program, we find evidence of effectiveness: 69 percent to 100 percent of rigorously studied programs in any category were effective at improving at least one measured outcome. However, no study that reported more than one outcome found that the program was effective in meeting all.

Academic Learning Programs

As discussed in Chapter Two, academic learning programs offered by districts, universities, or community partners were the most-studied program type, and they accounted for about half of the programs meeting Tier I–III ESSA evidence standards.

Twenty-two of the rigorously studied academic learning programs (69 percent) were found to have some evidence of effectiveness. There is evidence of effectiveness for mandatory and voluntary programs. The majority of programs were reading programs offered in schools. Most academic learning programs targeted low-income youth, perhaps in an effort to address differential summer learning loss, while other programs targeted youth with lower test scores for academic remediation.

Mandatory Programs

Almost all school districts provide credit recovery programs to high school youth who have failed to pass a course. Although credit recovery programs are prevalent, we found only one program that was evaluated for and met ESSA evidence standards. There is Tier III evidence that a high school credit recovery program for English language learners increased the number of English language arts courses taken by 12th grade; however, the program did not improve English language arts test scores, the number of math or science courses taken, or on-time graduation rates.

Some districts require elementary or middle school youth who are performing far below grade level to attend summer programming before moving on to the next grade. We find moderate and promising evidence for mandatory summer school programs providing instruction to elementary school children.

Voluntary Programs

Some schools, districts, universities, and community partners offer voluntary academic summer programming to children and youth with the intent of improving student success in school, most often in reading and mathematics. The rigorously studied programs in this category targeted youth performing below grade level or low-income youth who are considered at greater risk of academic loss during the summer months.

Many types of voluntary programs have evidence of effectiveness, including a *prekindergarten program*, *reading programs* for elementary school youth, *multisubject programs*, *mathematics programs* for middle and high school youth and a *STEM program* for middle school youth.

We have insufficient detail from the studies to fully investigate the relationship between dosage and effectiveness. However, we did note that none of the voluntary reading programs that were short in duration (e.g., half-day, three-week programs) produced benefits for youth. Also, a multisubject program offered for two consecutive summers produced a near-term advantage for treatment students in mathematics (Tier I), but youth with high attendance after the second summer benefited in mathematics, reading, and social and emotional well-being (Tier III).

At-Home Learning Programs

At-home learning programs are compelling options for policymakers and funders because they tend to be lower-cost methods of helping students gain or maintain academic skills over the summer relative to in-person programs. Five of the evidence-based summer programs

(12 percent) were at-home learning programs (Table 3.2). One was a mathematics program for middle school students, while the other four were reading programs offered to elementary school students. Effective at-home reading programs for low-income elementary students often occurred over multiple summers or were scaffolded by teachers prior to the summer program. In one program, for instance, students participated in a school-year book fair and voluntary summer reading for three summers prior to the program affecting reading scores. For the Project READS program, there is evidence of effectiveness for the version of the program that had scaffolded instruction provided by teachers prior to the summer; programs without this scaffolding have not been associated with positive outcomes.

Employment and Career Programs

We found evidence of effective programs for two types of employment and career programs—STEM career programs and summer jobs programs. All employment and career programs that were rigorously studied were found to be effective at improving at least one desired outcome. The STEM career programs were residential programs offered at a university to adolescent females in order to attract more high-potential females to STEM careers. These programs were effective in influencing interest in science and attitudes toward science (respectively).

Two programs that provided summer jobs to low-income urban youth met ESSA evidence standards. A program in New York City improved engagement with school and participation in and performance on academic assessments (Regents Exams). A summer jobs program (One Summer Plus) in Chicago reduced violent crime arrests among participants who received the version of the jobs program that included a social and emotional learning component.

Social and Emotional Well-Being Programs

Approximately 28 percent of the summer programs meeting ESSA evidence standards were focused on improving youth social and emotional well-being. Most of these programs (ten of 12) targeted a special population, such as children with behavior disorders, disabilities, or attention-deficit/hyperactivity disorder, and provided content aimed at improving a set of outcomes related to specific youth needs. As a result, the programs themselves are quite varied in terms of the population served and the program content.

All of these programs that were rigorously studied were demonstrated to be effective. This suggests that the efficacy of these programs might be tied to the intense targeting of the program to a population that had been identified as in need of such a program. However, similar to other types of programs, none of the programs that measured multiple outcomes was effective in producing all measured outcomes.

Seventy-five percent of the Tier III social and emotional well-being programs may have met a higher tier of evidence if they had met the multisite and large sample requirements. However, the vast majority of these programs were not intended to be offered to large numbers of participants. By nature and design, the programs were intensive and focused on a small group of youth. To meet a higher tier designation, these programs would need to be replicated multiple times in different locales.

Table 3.1
Rigorously Studied Academic Summer Learning Programs

Program Name or Description	ESSA Tier	Rising Grade or Age	Targeted Youth	Constructs with Positive Results at Tiers I–III	Constructs Tested but Not Significant	Program Summary Number	Could Meet Higher Tier If Larger Sample and Multisite	Sources
Stars Summer Kindergarten Orientation Program (voluntary school transition program)	Tier III	K	Low income	<ul style="list-style-type: none"> Transition to school: social interaction Transition to school: daily routine 	<ul style="list-style-type: none"> Transition to school: academic aspect and overall Liking school 	A1	Yes	Berlin, Dunning, and Dodge, 2011
Summer Early Literacy Pre-K Program (voluntary reading program)	Tier III	K	Low income	<ul style="list-style-type: none"> Picture naming 	N/A	A2	No	Edmonds et al., 2009
Blueprint summer school (voluntary reading program)	Tier III	1st–10th grades	Below grade level and ELL	<ul style="list-style-type: none"> Reading 	N/A	A3	No	Betts, Zau, and King, 2005
KindergARTen summer camp (voluntary reading program)	Tier III	1st grade	Low income	<ul style="list-style-type: none"> Word recognition Reading level 	<ul style="list-style-type: none"> Letter naming Phonemic awareness Dictation 	A4	Yes	Borman, Goetz, and Dowling, 2009
Kinder Camp (voluntary reading program)	Tier III	1st grade	Youth with phonemic awareness deficits	<ul style="list-style-type: none"> Phonemic awareness 	<ul style="list-style-type: none"> Overall reading skill Letter identification Word test Concepts about print Writing Vocabulary Dictation 	A5	No	Cleary, 2002
Summer Literacy Intervention (voluntary reading program)	Tier III	1st–2nd grades	Below grade level in reading	<ul style="list-style-type: none"> Oral reading fluency Nonsense word fluency 	N/A	A6	Yes	Zvoch and Stevens, 2011; Zvoch and Stevens, 2013

Table 3.1—Continued

Program Name or Description	ESSA Tier	Rising Grade or Age	Targeted Youth	Constructs with Positive Results at Tiers I–III	Constructs Tested but Not Significant	Program Summary Number	Could Meet Higher Tier If Larger Sample and Multisite	Sources
School-Based, Three-Week Reading Program (voluntary reading program)	Tier III	1st–4th grades	Deemed seriously at risk for reading achievement; low income	<ul style="list-style-type: none"> • Reading (grades 2–5) 	N/A	A7	No	Luftig, 2003
Building Educated Leaders for Life (BELL) (voluntary multisubject program)	Tier III	1st–7th grades	Low income	<ul style="list-style-type: none"> • Reading achievement 	<ul style="list-style-type: none"> • Self-efficacy • Peer relationships • Happiness 	A8	No	Chaplin and Capizzano, 2006
		6th–8th grades	Below grade level	N/A	<ul style="list-style-type: none"> • School engagement • Reading • Mathematics 			
Summer Reading Day Camp (voluntary reading program)	Tier III	2nd grade	Low income	<ul style="list-style-type: none"> • Comprehension • Word decoding 	<ul style="list-style-type: none"> • Word decoding (spring follow-up) 	A9	Yes	Schacter and Jo, 2005
Summer School Program for Rising Third Graders (voluntary reading program)	Tier III	3rd grade	Below grade level	<ul style="list-style-type: none"> • Reading level 	N/A	A10	Yes	Waters, 2004
Chicago’s Mandatory Summer School (mandatory program)	Tier III	4th or 6th (if promoted)	Below grade level	<ul style="list-style-type: none"> • Math spring assessment • Reading spring assessment 	N/A	A11	No	Matsudaira, 2008
National Summer Learning Project (voluntary multisubject program)	Tier I	4th–5th grades	Low income	<ul style="list-style-type: none"> • Mathematics (fall) • For high-attending youth only: reading, math, SEL (Tier III) 	<ul style="list-style-type: none"> • Mathematics • Reading • SEL • Attendance • Suspensions 	A12	N/A	Augustine et al., 2016
Jump Start Summer School Program (voluntary math program)	Tier III	4th–9th grades	Below grade level	<ul style="list-style-type: none"> • Math 	N/A	A13	No	Stewart, 2017

Table 3.1—Continued

Program Name or Description	ESSA Tier	Rising Grade or Age	Targeted Youth	Constructs with Positive Results at Tiers I–III	Constructs Tested but Not Significant	Program Summary Number	Could Meet Higher Tier If Larger Sample and Multisite	Sources
NYCDOE’s Summer Success Academy (mandatory program)	Tier II	6th grade	Below grade level	<ul style="list-style-type: none"> • ELA state assessment 	<ul style="list-style-type: none"> • Math state assessment 	A14	No	Mariano and Martorell, 2013
Middle School STEM Program with VEX Robotics (voluntary STEM program)	Tier III	7th–9th grades	Youth in high-need schools	<ul style="list-style-type: none"> • School-year attendance (after summer 2012) 	<ul style="list-style-type: none"> • School-year attendance (after summers 2013 and 2014) 	A15	Yes	Mac Iver and Mac Iver, 2015
Jaime Escalante Math Program (JEMP) (voluntary math program)	Tier III	7th–8th grades	Low income and/or minority	<ul style="list-style-type: none"> • State math assessment (after two summers of treatment) 	<ul style="list-style-type: none"> • State math assessment (after one summer of treatment) 	A16	No	Bowens and Warren, 2016
Middle School Summer School Program Focused on Reading, Writing, and Mathematics (voluntary multisubject program)	Tier III	8th grade	Below grade level	<ul style="list-style-type: none"> • Reading (fall test, second cohort) 	<ul style="list-style-type: none"> • State math assessment • State reading assessment • State writing assessment 	A17	Yes	Opalinski, 2006
Elevate Math Summer Program (voluntary math program)	Tier III	8th grade	Below grade level in math	<ul style="list-style-type: none"> • Mathematics: algebra readiness 	<ul style="list-style-type: none"> • Math interest • Math self-efficacy 	A18	Yes	Snipes et al., 2015
Three-Week Summer Intervention to Improve Algebra I (voluntary math program)	Tier III	10th grade	Below grade level in math	<ul style="list-style-type: none"> • Mathematics 	<ul style="list-style-type: none"> • Math course grade • GPA • Number of failed classes • Number of absences 	A19	Yes	Jackson, 2011

Table 3.1—Continued

Program Name or Description	ESSA Tier	Rising Grade or Age	Targeted Youth	Constructs with Positive Results at Tiers I–III	Constructs Tested but Not Significant	Program Summary Number	Could Meet Higher Tier If Larger Sample and Multisite	Sources
Higher Achievement (voluntary multisubject program)	Tier III	8th–9th grades	Academically motivated, underserved	<ul style="list-style-type: none"> • Enjoyment of learning • Percentage wanting to attend a public high school • Percentage wanting to attend a competitive high school 	<ul style="list-style-type: none"> • Mathematics • Reading comprehension • Persistence • Creativity • Academic self-efficacy • Curiosity • Growth mindset • School enjoyment • Prediction of grades in the fall • Peer academic support • Adult academic support • Out-of-school misconduct 	A20	Yes	Herrera et al., 2011
Ninth Grade Counts Initiative (voluntary transition program)	Tier III	9th grade	At risk of dropping out	<ul style="list-style-type: none"> • High school credits earned by the end of 9th grade 	<ul style="list-style-type: none"> • School-year attendance 	A21	No	Northwest Evaluation Association, 2011
ELL Summer Credit Recovery Program (mandatory program)	Tier III	10th–12th grades	ELLs	<ul style="list-style-type: none"> • Number of ELA courses taken 	<ul style="list-style-type: none"> • ELA achievement • On-time graduation • Number of math courses taken • Number of science courses taken 	A22	No	Johnson, 2017
Pre-Kindergarten Summer School Program (voluntary multisubject program)	DNM	K	Low readiness for Kindergarten	N/A	<ul style="list-style-type: none"> • Language arts • Mathematics • Literacy 	N/A	No	Story, 2008
Summer Literacy Program Using Writing Samples (voluntary reading program)	DNM	K–4th grades	Low income	N/A	<ul style="list-style-type: none"> • Writing 	N/A	No	Burgin and Hughes, 2008

Table 3.1—Continued

Program Name or Description	ESSA Tier	Rising Grade or Age	Targeted Youth	Constructs with Positive Results at Tiers I–III	Constructs Tested but Not Significant	Program Summary Number	Could Meet Higher Tier If Larger Sample and Multisite	Sources
Summer Literacy Clinic (voluntary reading program)	DNM	1st grade	Below grade level	N/A	<ul style="list-style-type: none"> • Reading (four measures) 	N/A	No	Allen, 2003
Summer Learning Program (voluntary reading program)	DNM	1st–3rd grades	Below grade level	N/A	<ul style="list-style-type: none"> • Reading level 	N/A	No	Crotty, 2017
Summer Brain Gain (reading component inside summer camp)	DNM	1st–5th grades	N/A	N/A	<ul style="list-style-type: none"> • Early literacy • Reading • Math 	N/A	No	Scuello and Wilkens, 2016
Jumpstart Summer Reading Program (voluntary reading program)	DNM	1st–7th grades	N/A	N/A	<ul style="list-style-type: none"> • Oral reading fluency 	N/A	No	Juilfs, 2013
Summer Reading Program (voluntary reading program)	DNM	2nd–7th grades	Below grade level	N/A	<ul style="list-style-type: none"> • Oral reading fluency 	N/A	No	Johnston et al., 2015
Summer Enrichment Camp (voluntary multisubject program)	DNM	3rd–4th grades	Below grade level	N/A	<ul style="list-style-type: none"> • Reading (fall and spring assessments) • Math (fall and spring assessments) 	N/A	No	Dwight, 2010
Voluntary, Nonscripted Summer School Program in Indiana (voluntary multisubject program)	DNM	3rd–6th grades	N/A	N/A	<ul style="list-style-type: none"> • Math scores • Reading scores • Language scores 	N/A	No	Bakle, 2010
Residential Intervention (voluntary program)	DNM	10th–12th grades	At-risk gifted students	N/A	<ul style="list-style-type: none"> • Self-efficacy • Test anxiety • Control • Peer assistance • Help-seeking 	N/A	No	Kolar, 2013

NOTES: DNM indicates that a program did not meet ESSA Tier I–III evidence standards; we have shaded these programs gray. ELL = English language learner, ELA = English language arts.

Table 3.2
Rigorously Studied At-Home Summer Learning Programs

Program Name or Description	ESSA Tier	Rising Grade or Age	Targeted Youth	Constructs with Positive Results at Tiers I–III	Constructs Tested but Not Significant	Program Summary Number	Could Meet Higher Tier If Larger Sample and Multisite	Sources
School-Year Book Fair and Voluntary Summer Reading	Tier I	2nd–6th grades	Low income	<ul style="list-style-type: none"> Reading scores 	N/A	B1	N/A	Allington et al., 2010
Summer Books!	Tier III	3rd grade	Low income	<ul style="list-style-type: none"> Self-concept as reader 	<ul style="list-style-type: none"> Oral reading fluency, accuracy, and automation Reading comprehension Value of reading 	B2	Yes	Melosh, 2003
Baltimore SummerREADS Program	Tier III	3rd–4th grades	Low income	<ul style="list-style-type: none"> State reading assessment (4th grade) 	<ul style="list-style-type: none"> State reading assessment (3rd grade) 	B3	No	Stein, 2017
Project READS	Tier I	3rd–4th grades	N/A	<ul style="list-style-type: none"> State reading assessment 	N/A	B4	N/A	Kim and White, 2008; Kim et al., 2016
	Tier III	4th–6th grades	N/A	<ul style="list-style-type: none"> Silent reading ability 	N/A		No	
Boston Red Sox Summer Math Program	Tier III	7th–8th grades	N/A	<ul style="list-style-type: none"> Mathematics 	N/A	B5	No	Nelson, 2014
Project READS	DNM	4th–5th grades	N/A	N/A	<ul style="list-style-type: none"> Fall reading assessment Spring state reading assessment 	N/A	No	Guryan, Kim, and Park, 2016
	DNM	5th grade	N/A	N/A	<ul style="list-style-type: none"> Reading 	N/A	No	Kim, 2006
	DNM	2nd–6th grades	N/A	N/A	<ul style="list-style-type: none"> Reading 	N/A	No	Kim, 2007
Summer Reading Program	DNM	4th grade	Low income, low performing	N/A	<ul style="list-style-type: none"> Reading comprehension 	N/A	No	Wilkins et al., 2012
Summer Reading Club (SRC)	DNM	3rd–4th grades	N/A	N/A	<ul style="list-style-type: none"> Reading efficiency Reading comprehension 	N/A	No	Dynia, Piasta, and Justice, 2015

NOTE: DNM indicates that a program did not meet ESSA Tier I–III evidence standards; we have shaded these programs gray.

Table 3.3
Rigorously Studied Summer Youth Employment and Career Programs

Program Name or Description	ESSA Tier	Rising Grade or Age	Targeted Youth	Constructs with Positive Results at Tiers I–III	Constructs Tested but Not Significant	Program Summary Number	Could Meet Higher Tier If Larger Sample and Multisite	Sources
Summer Science Exploration Program	Tier III	8th–9th grades	N/A	<ul style="list-style-type: none"> • Interest in science careers 	N/A	C1	No	Gibson and Chase, 2002
Newton Summer Academy	Tier III	10th–12th grades	Gifted female adolescents	<ul style="list-style-type: none"> • Attitudes toward science 	<ul style="list-style-type: none"> • Science self-efficacy • Beliefs about women in science 	C2	Yes	Ellis-Kalton, 2001
NYC Summer Youth Employment Program	Tier I	9th–12th grades	Low income	<ul style="list-style-type: none"> • Attendance • Regents exam participation • Regents exam performance (various cut scores; Schwartz et al., 2014) 	<ul style="list-style-type: none"> • Passing math or English Regents exam (Leos-Urbel et al., 2012) 	C3	N/A	Leos-Urbel et al., 2012; Schwartz et al., 2014
One Summer Plus	Tier III	9th–12th grades	Youth at risk of violence involvement	<ul style="list-style-type: none"> • Violent crime arrests (jobs plus SEL group vs. control) 	<ul style="list-style-type: none"> • School enrollment • Property crime arrests • Drug crime arrests 	C4	No	Heller, 2013

Table 3.4
Rigorously Studied Social and Emotional Well-Being Summer Programs

Program Name or Description	ESSA Tier	Rising Grade or Age	Targeted Population	Constructs with Positive Results at Tiers I–III	Constructs Tested but Not Significant	Program Summary Number	Could Meet Higher Tier If Larger Sample and Multisite	Source
Therapeutic Playgroups Focusing on Social Competence and Self-Regulation Skills	Tier III	K–2nd grades	Youth in foster care	<ul style="list-style-type: none"> • Lability 	<ul style="list-style-type: none"> • Internalizing • Externalizing • Social problems • Emotion regulation • Lability (other raters) 	D1	Yes	Pears, Fisher, and Bronz, 2007
Early Risers	Tier III	1st–2nd grades	Youth with social difficulties	<ul style="list-style-type: none"> • Social skills (teacher reported) 	<ul style="list-style-type: none"> • Social skills (parent reported) 	D2	Yes	Hektner, Brennan, and August, 2017
Child Anxiety Multi-Day Program	Tier III	Average age of 9	Girls with separation anxiety disorder diagnosis	<ul style="list-style-type: none"> • Separation anxiety disorder • Global functioning and impairment 	<ul style="list-style-type: none"> • Anxiety (child and parent ratings) 	D3	Yes	Santucci and Ehrenreich-May, 2013
Benefits-Based Programming Resilience Day Camp	Tier III	Ages 8–12	Low-income youth	<ul style="list-style-type: none"> • Humor • Independence • Insight • Values orientation 	<ul style="list-style-type: none"> • Creativity • Initiative • Relationships 	D4	No	Allen, Cox, and Cooper, 2006
Social Skills Training During a Talent Development Program	Tier III	4th–8th grades	High-ability youth with self-reported social difficulties	<ul style="list-style-type: none"> • Finding friendship help 	<ul style="list-style-type: none"> • Friendship • Companionship • Conflict • Security • Closeness 	D5	Yes	Foley-Nicpon et al., 2017
Self-Regulation Mentoring Program	Tier III	Ages 9–14	N/A	<ul style="list-style-type: none"> • Planning and organizing • Organization of materials 	<ul style="list-style-type: none"> • Working memory • Initiation • Monitoring and self-awareness 	D6	No	Morgan, Sibthorp, and Tsethlikai, 2016
Middle School Success	Tier III	6th grade	Girls in foster care	<ul style="list-style-type: none"> • Substance use (self-reported) 	<ul style="list-style-type: none"> • Delinquent behavior 	D7	Yes	Kim and Leve, 2011

Table 3.4—Continued

Program Name or Description	ESSA Tier	Rising Grade or Age	Targeted Population	Constructs with Positive Results at Tiers I–III	Constructs Tested but Not Significant	Program Summary Number	Could Meet Higher Tier If Larger Sample and Multisite	Source
Socio-Dramatic Affective-Relational Intervention	Tier III	Ages 11–17	Youth with Asperger syndrome and high-functioning autism diagnoses	<ul style="list-style-type: none"> • Ability to interpret adults’ tone of voice • Assertion 	<ul style="list-style-type: none"> • Expressive and reception nonverbal difficulties • Social problems • Internalizing behavior • Externalizing behavior • Social responsiveness • Depression 	D8	Yes	Lerner, Mikami, and Levine, 2011
Respecting the Circle of Life: Mind Body and Spirit	Tier III	Ages 13–19	Reservation tribal community youth	<ul style="list-style-type: none"> • Self-efficacy • Response efficacy • Condom use self-efficacy • Response cost 	<ul style="list-style-type: none"> • Intrinsic reward • Response cost (12-month follow-up) • Vaginal sex incidence • Severity • Vulnerability 	D9	No	Tingey et al., 2015
Just Do It	Tier III	9th grade	Youth with learning disabilities	<ul style="list-style-type: none"> • Self-esteem • Depression • Attributional style 	<ul style="list-style-type: none"> • GPA 	D10	Yes	Stevens, 2005
Summer at the Center	Tier III	Ages 14–17	Youth enrolled in alternative and correctional education	<ul style="list-style-type: none"> • GPA 	<ul style="list-style-type: none"> • Attendance rates 	D11	No	Coronado, 2000
Texas Youth Leadership Forum	Tier III	11th–12th grades	Youth with disabilities	<ul style="list-style-type: none"> • Self-Advocacy 	N/A	D12	Yes	Grenwelge and Zhang, 2013

Key Findings and Recommendations

In this chapter, we provide observations about the evidence base for summer programming and recommendations for practitioners, policymakers, and funders. We hope that the information in this report, coupled with the summaries of specific interventions in Section Two, will help decisionmakers to develop or select evidence-based summer programs that are suitable for their settings and targeted children and youth.

Key Findings

This evidence review of summer programming revealed several things about the research base on the topic and the promise of summer programs for promoting positive youth outcomes.

A relatively small fraction of research on summer programming includes a rigorous examination of youth outcomes. Our broad literature search for studies of summer programs yielded 3,671 citations. Of the 1,360 documents subject to a full-text review, only 63 (5 percent) met standards for rigorous outcomes research. There are clearly challenges to conducting rigorous outcomes research. First, RCTs are expensive. Second, identifying a comparable group of nonparticipants in the absence of randomization can be difficult, particularly when there is not a large administrative database (such as school data) to draw upon.

Most studied programs were academic learning programs offered in schools, focused on reading, and targeting elementary students. There were far fewer rigorous studies conducted for other types of programs or outcomes. In terms of the outcomes examined, for example, there were three times more reading findings than mathematics findings in the rigorous evaluations we reviewed. We expect the rigorous research base is not representative of all summer programs and may instead reflect public interest and investment. For instance, we did not identify any rigorous studies for recreational sleepaway camps—a common form of summer programming—which are usually paid for with private dollars. And we only found one study of a summer science program.

Summer programs can be an effective way to address students' needs. Most rigorously studied programs had evidence that aligns with ESSA evidence standards. The majority of programs studied (about 75 percent) were effective in improving at least one outcome.

We could not determine why some summer programs did not positively impact youth. There are summer programs that were rigorously studied and not found to result in positive outcomes for youth. Unfortunately, we do not know why some programs positively affected youth while others did not—there are no consistent correlations or patterns separating the effective from the ineffective programs. This is partly due to the lack of information on

implementation details in many of the documents. There were no negative findings reported, which could be due to underreporting (i.e., publication bias) or could mean that it is unlikely that a summer program would negatively affect a child.

We identified more than 40 summer programs that met ESSA’s evidence standards.

The 43 programs we identified represent numerous options for practitioners and funders to consider. In Section Two, we describe each of these programs in detail to help guide decisionmaking. These summaries provide information about the content of the intervention, the research evidence behind the intervention, the characteristics of children and youth that have benefited from it, and the study description and locale. Although few of these programs can be purchased “off the shelf,” the components of these programs can be replicated.

Many types of summer programs were effective. We find evidence of the effectiveness of academic learning, learning at home, social and emotional well-being, and employment and career summer programs, and evidence of effective programs offered to all grade levels. The only type of rigorously studied program that did not produce at least one significant, positive outcome was physical health. However, we only identified one study of a program targeting physical health, so we cannot conclude that these programs would not be effective.

More promising than strong evidence exists for summer programs. We found more promising than strong or moderate evidence for summer programs. There were fewer experimental and quasi-experimental studies than correlational studies. However, of the 40 programs that met Tier III evidence standards, about half were moved to Tier III based on guidance recommendations for sample size and study locale. What we have classified as Tier III evidence is quite varied.

Programs did not tend to be effective in improving all measured outcomes. Although the rigorously studied programs showed high rates of effectiveness in terms of promoting at least one youth outcome, few programs met all measured goals. Across the rigorous studies, only 34 percent of measured outcomes were significant and positive. This may be because summer programs are comparatively short interventions relative to school-year interventions. Developers and researchers might need to temper expectations for what programs can accomplish in a short period and reduce the breadth of content or limit measures to those most directly related to the content provided. For example, we found that some studies measured secondary outcomes, such as reading achievement for a science program. These outcomes might not be realized, given that the content of the program would be focused on science rather than reading instruction. In addition, it may be that some measures are more reliable or sensitive than others. For instance, several academic learning studies examined student suspension rates. However, suspension policies and reporting vary school by school, making suspension rates a less reliable measure than others.

Targeted programming may create stronger benefits for youth. All ten of the rigorous evaluations of social and emotional well-being programs targeted to special populations in need of those services had positive and significant findings. The efficacy of these programs might be tied to the intense targeting of the program to a special population in need of it.

We note that our evidence-tier determination signals our level of confidence in the strength of the evidence that the studied outcome is a result of the program. It does not signal the value that family or community members would assign to a program. In other words, simply because there might be strong evidence for one type of program, such as for a summer reading intervention, there might be stronger parent or youth demand for other types of summer programs, such as science programs, for which there might be less evidence. The strength of the evidence

also does not tell us about the magnitude of the benefits that may accrue from the programming. For example, a summer reading program might be associated with higher test scores in the treatment group, compared with a comparison group, but that test score advantage might be modest. For these reasons, we encourage decisionmakers to consider programs across all evidence tiers.

Recommendations

Decisionmakers should consider summer a viable time to promote outcomes for children and youth. Summer is an opportune time to create programs that benefit children and youth, and we found evidence that many types of summer programs can be effective. That said, not all programs are effective. We encourage decisionmakers to consider carefully the 43 evidence-based programs we identified and create and invest in similar programs that are intentionally designed to meet specific needs.

We encourage practitioners and funders to consider all tiers of evidence when making program choices. Although generally we encourage practitioners to implement and funders to fund programs with the highest level of evidence, we caution against weighing programs with Tier I evidence higher than programs with Tier III evidence. In addition to the study limitations discussed above, we identified few summer programs that met Tier I and only one that met Tier II criteria, which means that practitioners will be highly constrained if just looking for programs meeting these two evidence tiers.

Assessing studies and programs with respect to Tier IV requirements was not within the scope of this review. Nevertheless, we acknowledge that some types of summer programs (e.g., those offering writing, science, and physical health programming) lack an extensive research base. Furthermore, many ESSA funding streams support interventions that meet Tier IV requirements. In a review of SEL programs that meet ESSA evidence standards, Grant et al. (2017) provides helpful guidance for practitioners when selecting an intervention, which includes

- conducting a needs assessment to determine the target populations, grade levels, and outcomes
- searching for a Tier I–III intervention that would meet the local needs
- choosing or creating an intervention that would address the determined needs and meet Tier IV if the search for a top-three tier intervention is unsuccessful. When assessing an intervention for Tier IV evidence, the practitioners should look for an existing logic model that clearly depicts inputs, key activities, outputs, and outcomes in the short-, medium-, and long-term or create one themselves. In addition, the chosen intervention should have an ongoing evaluation that could generate evidence eligible for at least Tier III, or the practitioners should launch such an evaluation themselves.

These recommendations apply in the context of summer programs as well.

Practitioners (and funders) should carefully consider which outcome domains were positively associated with programs of interest. Programs did not typically improve all studied outcomes. It could be that a program designed to lessen risk-taking behaviors associated with drug and alcohol use was only found to lessen drug-related behaviors, for example.

By carefully considering which outcomes were positively affected, practitioners, funders, and policymakers might develop a better sense of potential impacts.

When selecting or developing summer programs, practitioners should consider the setting and targeted population. Section Two provides a set of intervention summaries that practitioners can use to assess whether a program might be a good fit. For example, the programs aimed specifically at improving social and emotional well-being tended to target specific children and youth with specialized needs (and were often successful at doing so).

Researchers should provide more information about interventions and implementation in their articles and reports. As part of this review, we intended to systematically examine implementation features to determine which were consistently associated with improved outcomes. We were unable to do this due to a lack of information about the interventions and their implementation in the documents we examined. We encourage researchers to include this information in future evaluations, not only to support evidence reviews and meta-analyses but also to guide practitioners on implementation.

Researchers and funders may want to conduct rigorous evaluations on different types of programs other than academic programs focused on improving reading achievement. More evidence exists for academic programs that target improving reading achievement than any other type of program. There is much less evidence on the efficacy of programs focused on mathematics, science, social and emotional well-being, or career preparation, and almost none focused on physical health—all outcomes that might be successfully addressed in the summer.

SECTION TWO
Intervention Summaries

Overview of Intervention Summaries

This section contains summaries for the 43 summer programs associated with at least one positive and statistically significant finding based on our analysis. Each summary is classified according to program type. The type is displayed on the upper left-hand side of the first page in a color-coded box, using the following colors:

- Academic learning: orange
- Learning at home: purple
- Employment and career: blue
- Social and emotional well-being: green.

Each summary contains the following information:

- A brief summary of the program
- An overview of program effectiveness
 - We present the outcomes evaluated and whether or not the evaluators found that the program improved each outcome.
- Details regarding program features
 - Main program components
 - Duration
 - Staffing
 - The ratio of youth to adult staff
 - Student attendance rates
 - Targeted youth
 - Setting (e.g., school building, community-based organization site, etc.)
- A brief description of the evaluation design
- Information on the study participants and setting
 - Whether the study was conducted in a rural, urban, or suburban location
 - The number of participants and sites studied
 - Rising grade levels of the youth
 - Study participants' race and ethnicity
 - Study participants' family income, based on the proportion eligible for free or reduced-price meals
 - Special populations participating in the study
- Findings from the study that were statistically significant
 - Domains studied (e.g., mathematics achievement)
 - Measures used (e.g., state assessments)
 - Effect sizes representing the difference between the treatment and comparison groups
 - Timing of the measure
 - Interpretation of the difference between the treatment and comparison group outcomes
 - The ESSA evidence tier associated with the finding.

Stars Summer Kindergarten Orientation Program

A school-based, four-week program designed to enhance the transition of low-income youth to kindergarten. The program curriculum focused on social competence, preliteracy and prenumeracy skills, school routines, and parental involvement.

EVIDENCE OF EFFECTIVENESS

Positive, statistically significant findings on the social aspect and daily routine of school transition. Evaluated and found no evidence of other measures of social and emotional learning, including effect on academic aspect, overall transition to school, or liking school.

✓ SOCIAL AND EMOTIONAL LEARNING

KEY

- ✓ strong evidence
- ✓ moderate evidence
- ✓ promising evidence
- program evaluated for this outcome but no evidence found

PROGRAM FEATURES

Main Components

Four weekly parent group meetings co-led by family-school specialists and teachers; a family-school specialist–conducted home visit once during the summer and once during the school year

Duration

4 weeks: 5.25 hours per day of classroom-based sessions (19 days)

Staffing

Family-school specialists; kindergarten teachers paired with teaching assistants

Youth-Staff Ratio for Instructional Periods

11:2 to 13:2

Targeted Youth

Low-income students

Attendance Rates of Youth

Mean of 17 days attended (89% of sessions)

Support and Training for Staff

Family-school specialists provided teachers and assistants with four days of training in the Second Step curriculum.

Setting

School

STUDY DESCRIPTION

Youth were randomly assigned within four schools at approximately a 3:2 ratio (more treatment than control youth). After the summer, youth entered kindergarten, where they were in one of 20 classrooms in the four elementary schools; they were assigned teachers independent of program involvement. No information was provided on what the control youth did during the summer.

STUDY YOUTH AND LOCATION

Locale

Urban

Number of Youth and Sites

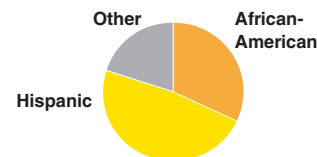
100 youth (60 treatment, 40 control)
in four public schools

Rising Grade Level

Kindergarten

Race and Ethnicity

32% African-American
48% Hispanic
20% Other



Household Income Level

Majority eligible for free or reduced-price lunch

Special Populations Served

N/A

Statistically Significant and Positive Effects

Domain	Measure	Effect Size	Timing of Measurement	Impact	ESSA Tier
Social and emotional learning	Transition to school: social aspect	0.66	Fall after summer program	Female treatment youth (but not males) were rated as having a more favorable social transition to kindergarten than control youth.	III
	Transition to school: daily routine	0.55	Fall after summer program	Treatment youth who had the same teacher in the summer as they had in the school year were rated higher than control youth in ease in adapting to kindergarten.	III

SOURCE: Lisa J. Berlin, Rebecca D. Dunning, and Kenneth A. Dodge, "Enhancing the Transition to Kindergarten: A Randomized Trial to Test the Efficacy of the 'Stars' Summer Kindergarten Orientation Program," *Early Childhood Research Quarterly*, Vol. 26, No. 2, 2011, pp. 247–254.

NOTE: Per ESSA, evidence-based interventions demonstrate "a statistically significant effect on improving student outcomes or other relevant outcomes" based on strong (Tier I), moderate (Tier II), or promising (Tier III) evidence.

Summer Early Literacy Pre-K Program

A voluntary six-week, pre-K summer school program on early literacy skills and development for preschool youth living in economically disadvantaged communities who had been identified as at risk for later literacy problems in school. Youth participated from 8 a.m. to 5 p.m. each day, five days per week, with three hours of daily literacy instruction. District preschool teachers taught the classes.

EVIDENCE OF EFFECTIVENESS

Positive, statistically significant finding on picture naming.

✓ ACADEMIC ACHIEVEMENT: READING

KEY

- ✓ strong evidence
- ✓ moderate evidence
- ✓ promising evidence
- program evaluated for this outcome but no evidence found

PROGRAM FEATURES

Main Components

Intensive literacy instruction grounded in the Opening the Word of Learning: A Comprehensive Early Literacy Program (OWL) curriculum

Duration

6 weeks: 5 days per week, 8 a.m. to 5 p.m.

Staffing

Preschool teachers

Youth-Staff Ratio for Instructional Periods

15:1

Targeted Youth

Low-income students

Attendance Rates of Youth

N/A

Support and Training for Staff

Each summer school teacher had at least five years of teaching experience and had participated in professional development and supervised teaching opportunities related to the OWL curriculum during the school year.

Setting

Preschool classroom

STUDY DESCRIPTION

Youth in the bottom quartile, as determined by the midyear assessment data of a larger, federally funded prekindergarten program, were eligible for the program. Participation was voluntary. Youth enrolled in preschool programs in neighboring districts with comparable achievement formed the eligible comparison group. Treatment youth were randomly selected from the first group, and comparison youth were randomly selected from the second. Youth were in preschool prior to the intervention. Summer experiences of the comparison group youth were unknown, but comparable structured summer school programs were not provided by their district.

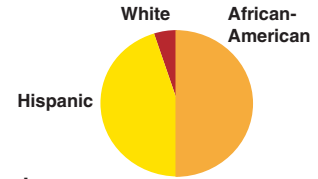
STUDY YOUTH AND LOCATION

Locale
Urban

Number of Youth and Sites
94 youth from one school district (46 treatment, 48 comparison)

Rising Grade Level
Kindergarten

Race and Ethnicity
50% African-American
45% Hispanic
5% White



Household Income Level
90% eligible for free or reduced-price lunch

Special Populations Served
10% had special needs

Statistically Significant and Positive Effects

Domain	Measure	Effect Size	Timing of Measurement	Impact	ESSA Tier
Reading achievement	Picture naming	N/A	Not specified	Treatment youth had higher picture-naming scores than comparison youth.	III

SOURCE: Ellen Edmonds, Cathleen O'Donoghue, Sedra Spano, and Robert F. Algozzine, "Learning When School Is Out," *Journal of Educational Research*, Vol. 102, No. 3, 2009, pp. 213–221.

NOTES: Per ESSA, evidence-based interventions demonstrate "a statistically significant effect on improving student outcomes or other relevant outcomes" based on strong (Tier I), moderate (Tier II), or promising (Tier III) evidence.

N/A indicates positive effect size cannot be calculated because standard deviations were not reported.

Blueprint Summer School

A school-based, six-week, half-day summer reading program that was part of a larger, districtwide literacy reform program in San Diego, Calif. The program included youth from kindergarten through ninth grade who lagged below and significantly below grade level. English language learners were automatically eligible to attend.

EVIDENCE OF EFFECTIVENESS

Positive, statistically significant finding on reading.

✓ ACADEMIC ACHIEVEMENT: READING

KEY

- ✓ strong evidence
- ✓ moderate evidence
- ✓ promising evidence
- program evaluated for this outcome but no evidence found

PROGRAM FEATURES

Main Components

Reading instruction

Duration

6 weeks: 4 hours per day

Staffing

N/A

Youth-Staff Ratio for Instructional Periods

N/A

Targeted Youth

Students performing below grade level and English language learners

Attendance Rates of Youth

N/A

Support and Training for Staff

N/A

Setting

School

STUDY DESCRIPTION

Because youth were not randomly assigned to summer school, this study used a fixed-effects modeling strategy to take into account the possibility that some unobserved factors, related to youth, schools, or neighborhoods and that were fixed over time, influenced gains in reading achievement. This strategy meant that the model measured the effect of participating in summer school by comparing reading gains for youth in years that they participated with their own gains in years they did not. Youth were in grades K–9 prior to the summer, and analysis examined three school years of data (1999–2000, 2000–2001, and 2001–2002).

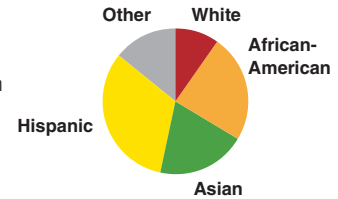
STUDY YOUTH AND LOCATION

Locale
Urban

Number of Youth and Sites
46,286 youth in elementary school
34,037 youth in middle school
32,095 youth in high school

Rising Grade Level
Grades 1–10

Race and Ethnicity
7% White
19% African-American
14% Asian
23% Hispanic
10% Other



Household Income Level
Majority were low income (statistics were not reported)

Special Populations Served
29% rate of participation among English language learners

Statistically Significant and Positive Effects

Domain	Measure	Effect Size	Timing of Measurement	Impact	ESSA Tier
Reading achievement	Reading score: elementary school	N/A	Spring following summer program	Treatment youth in elementary school had greater gains in reading scores than comparison youth.	III
	Reading score: middle school	N/A	Spring following summer program	Treatment youth in middle school had greater gains in reading scores than comparison youth.	III
	Reading score: high school	N/A	Spring following summer program	Treatment youth in high school had greater gains in reading scores than comparison youth.	III

SOURCE: Julian R. Betts, Andrew C. Zau, and Kevin King, *From Blueprint to Reality: San Diego's Education Reforms*, San Francisco, Calif.: Public Policy Institute of California, 2005.

NOTES: Per ESSA, evidence-based interventions demonstrate “a statistically significant effect on improving student outcomes or other relevant outcomes” based on strong (Tier I), moderate (Tier II), or promising (Tier III) evidence.

N/A indicates positive effect size cannot be calculated because standard deviations were not reported.

KindergARTen Summer Camp

A free, six-week, full-day summer enrichment camp in literacy and the fine arts that served youth from high-poverty schools in Baltimore, Maryland. Early elementary youth received three hours of daily literacy instruction, and afternoon activities included theme-based visual and performing arts and weekly field trips. At the end of the summer, the program hosted a community art show to showcase student work. A district teacher and college interns provided instruction.

EVIDENCE OF EFFECTIVENESS

Positive, statistically significant findings on word lists and the Developmental Reading Assessment. Evaluated and found no evidence of effect on letter naming, phoneme segments, or dictation.

✓ ACADEMIC ACHIEVEMENT: READING

KEY

- ✓ strong evidence
- ✓ moderate evidence
- ✓ promising evidence
- program evaluated for this outcome but no evidence found

PROGRAM FEATURES

Main Components

Literacy instruction, physical activity, science and art curricula

Duration

6 weeks: 6 hours per day, 8 a.m.–2 p.m.

Staffing

One certified teacher and two college student interns per class

Youth-Staff Ratio for Instructional Periods

10:3

Targeted Youth

Low-income students

Attendance Rates of Youth

Among students who attended at least one day, 72%

Support and Training for Staff

College interns participated in four weeks of training on curricula, instruction, assessment, classroom management, parent involvement, basic first aid, and internship- and team-building. They also participated in weekly professional development workshops led by the fine arts supervisor, the KindergARTen camp director, the education specialist, and/or the on-site certified teachers. Teachers also participated in the final week of training to get an overview of the curricula, mentoring strategies, and planning times with interns.

Setting

School

STUDY DESCRIPTION

This randomized field trial of a summer enrichment program in literacy and fine arts analyzed summer learning outcomes of students from four high-poverty schools in Baltimore, Maryland. Youth were in kindergarten prior to the intervention. Control group students did not participate in the program. The evaluation also reported on surveys of students, parents, and teachers regarding their satisfaction with the program.

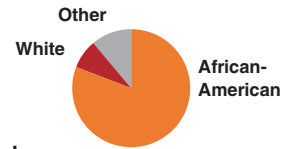
STUDY YOUTH AND LOCATION

Locale
Urban

Number of Youth and Sites
128 youth (93 treatment, 35 control) from four high-poverty schools

Rising Grade Level
Grade 1

Race and Ethnicity
81% African-American
8% White
11% Other



Household Income Level
92% eligible for free or reduced-price lunch

Special Populations Served
N/A

Statistically Significant and Positive Effects

Domain	Measure	Effect Size	Timing of Measurement	Impact	ESSA Tier
Reading achievement	Word List A Assessment	0.27	Fall after summer program	Treatment youth had higher word list scores than control youth.	III
	Developmental Reading Assessment Instruction	0.40	Fall after summer program	Treatment youth had higher Developmental Reading Assessment scores than control youth.	III

SOURCE: Geoffrey D. Borman, Michael E. Goetz, and N. Maritza Dowling, "Halting the Summer Achievement Slide: A Randomized Field Trial of the KindergARTen Summer Camp," *Journal of Education for Students Placed at Risk*, Vol. 14, No. 2, 2009, pp. 133–147.

NOTE: Per ESSA, evidence-based interventions demonstrate "a statistically significant effect on improving student outcomes or other relevant outcomes" based on strong (Tier I), moderate (Tier II), or promising (Tier III) evidence.

Kinder Camp

A five-week, school-based summer reading program designed for rising first graders with phonemic awareness deficits. Youth received four hours of direct instruction in phonemic awareness as well as oral and written language each day. Teachers interacted with parents at home and in the classroom.

EVIDENCE OF EFFECTIVENESS

Positive, statistically significant finding on phonemic awareness. Evaluated and found no evidence of effect on 14 other measures of literacy.

✓ ACADEMIC ACHIEVEMENT: READING

KEY

- ✓ strong evidence
- ✓ moderate evidence
- ✓ promising evidence
- program evaluated for this outcome but no evidence found

PROGRAM FEATURES

Main Components

Literacy instruction, weekly field trips, and teacher-parent conferencing

Duration

5 weeks

Staffing

The district Early Childhood Coordinator and four early childhood teachers

Youth-Staff Ratio for Instructional Periods

10:1

Targeted Youth

Students with phonemic awareness deficits

Attendance Rates of Youth

N/A

Support and Training for Staff

Staff training included three full days of program development prior to the first day of instruction and 30 minutes to one hour of additional support before and after each instructional session.

Setting

School

STUDY DESCRIPTION

This program in Westerly, R.I., public schools identified 62 youth from the 1997–1998 kindergarten cohort of 238 youth who exhibited literacy and phonemic awareness deficits. Forty youth chose to participate and 22 did not. Youth were in kindergarten prior to the intervention. No information was reported on what the comparison youth did during the summer.

STUDY YOUTH AND LOCATION

Locale

Suburban

Number of Youth and Sites

62 youth (40 treatment, 22 comparison)

Rising Grade Level

Grade 1

Race and Ethnicity

N/A

Household Income Level

N/A

Special Populations Served

100% students with literacy and phonemic awareness deficits

Statistically Significant and Positive Effects

Domain	Measure	Effect Size	Timing of Measurement	Impact	ESSA Tier
Reading achievement	Phonemic Awareness Interview	0.98	August and September after summer program	Treatment youth scored higher on phonemic awareness than comparison youth.	III

SOURCE: Thomas T. Cleary, *Providing Phonemic Awareness Instruction to Pre-First Graders: An Extended-Year Kindergarten Program*, dissertation, University of Rhode Island, 2001, Ann Arbor, Mich.: University Microfilms International, 3039075, 2002.

NOTE: Per ESSA, evidence-based interventions demonstrate “a statistically significant effect on improving student outcomes or other relevant outcomes” based on strong (Tier I), moderate (Tier II), or promising (Tier III) evidence.

Summer Literacy Intervention

A five-week, half-day, school-based voluntary summer learning program for rising first and second graders that offered reading instruction and primarily focused on early literacy skills, including phonemic awareness, alphabetic understanding, and fluency skills. Much of the literacy practice was provided in small groups.

EVIDENCE OF EFFECTIVENESS

Positive statistically significant findings on oral reading fluency and nonsense word fluency.

✓ ACADEMIC ACHIEVEMENT: READING

KEY

- ✓ strong evidence
- ✓ moderate evidence
- ✓ promising evidence
- program evaluated for this outcome but no evidence found

PROGRAM FEATURES

Main Components

Reading instruction

Duration

5 weeks: 4 mornings per week, 3.5 hours per day

Staffing

Teachers

Youth-Staff Ratio for Instructional Periods

20:1 or smaller

Targeted Youth

Students performing below grade level in reading

Attendance Rates of Youth

N/A

Support and Training for Staff

N/A

Setting

School

STUDY DESCRIPTION

This program has been studied twice. One study's samples comprised youth who either finished kindergarten ($n = 46$) or first grade ($n = 47$) during the 2009–2010 school year and completed district literacy assessments during spring and fall 2010. Youth in each sample were randomly assigned to treatment or control groups. Youth in the control group did not receive the summer program. The other study used a regression discontinuity design to compare the outcomes of four cohorts of youth who barely missed a benchmark (correctly reading at least 30 words) on the Test of Oral Reading Fluency assessment in the spring of first grade and were offered the opportunity to attend the summer enrichment program to those youth who barely scored over the benchmark and did not participate in the summer program.

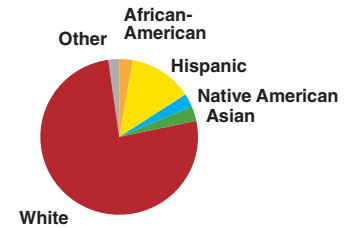
STUDY YOUTH AND LOCATION

Locale
Urban

Number of Youth and Sites
Study 1: 46 youth in the kindergarten sample (24 treatment, 22 control); 47 youth in the first-grade sample (23 treatment, 24 control).
Study 2: 1,149 youth

Rising Grade Level
Grades 1–2

Race and Ethnicity
Study 2: All study students
3% African-American
13% Hispanic
3% Asian
3% Native American
77% White
2% Other



Household Income Level
63% eligible for free or reduced-price lunch (Study 1)
51% eligible for free or reduced-price lunch (Study 2)

Special Populations Served
15% English language learners (Study 1)
4% English language learners (Study 2)

Statistically Significant and Positive Effects

Domain	Measure	Effect Size	Timing of Measurement	Impact	ESSA Tier
Reading achievement	DIBELS nonsense word fluency—kindergarten sample	0.60	Fall following program	Treatment kindergartners had higher nonsense word fluency than control group kindergartners.	III
	Test of Oral Reading Fluency—first-grade sample	0.78	Fall following program	Treatment first graders had higher oral fluency scores than control group first graders.	III
	Test of Oral Reading Fluency	0.40	Posttest (unclear)	Treatment youth had a higher oral reading fluency than comparison youth.	III

SOURCES: Keith Zvoch and Joseph J. Stevens, "Summer School Effects in a Randomized Field Trial," *Early Childhood Research Quarterly*, Vol. 28, No. 1, 2013, pp. 24–32; Keith Zvoch and Joseph J. Stevens, "Summer School and Summer Learning: An Examination of the Short- and Longer-Term Changes in Student Literacy," *Early Education and Development*, Vol. 22, No. 4, 2011, pp. 649–675.

NOTE: Per ESSA, evidence-based interventions demonstrate "a statistically significant effect on improving student outcomes or other relevant outcomes" based on strong (Tier I), moderate (Tier II), or promising (Tier III) evidence.

School-Based, Three-Week Reading Program

A school-based program that provided classroom instruction and small-group tutoring for 19 half-days. The program used a districtwide curriculum focused on reading readiness and basic phonics skills.

EVIDENCE OF EFFECTIVENESS

Positive, statistically significant finding on reading.

✓ ACADEMIC ACHIEVEMENT: READING

KEY	
✓	strong evidence
✓	moderate evidence
✓	promising evidence
○	program evaluated for this outcome but no evidence found

PROGRAM FEATURES

Main Components

Reading and phonics instruction provided in small groups

Duration

Maximum of 19 half-days

Staffing

Certified full-time district teachers

Youth-Staff Ratio for Instructional Periods

10:1 (maximum)

Targeted Youth

Low-income students and students performing below grade level

Attendance Rates of Youth

Unclear

Support and Training for Staff

N/A

Setting

School

STUDY DESCRIPTION

This study looked at the effect of a short-term, school-based summer school reading intervention program. The study also investigates the efficacy of a summer program implemented by a for-profit tutoring company. Youth rising into first grade made up two groups: the School-Based Summer Reading Program and a comparison group. For youth in rising into grades 2–4, there were three study groups: the School-Based Summer Reading Program, the for-profit Summer Reading Program, and the comparison group. Comparison youth came from the same schools and received no instruction. The private tutoring program examined in the study was found to be effective but more expensive.

STUDY YOUTH AND LOCATION

Locale
Urban

Number of Youth and Sites
36 youth in each of four grades (144 total) in a single school

Rising Grade Level
Grades 1–4

Race and Ethnicity
Not explicitly stated, but school population was predominantly African-American

Household Income Level
Not explicitly stated, but school population was 90% eligible for free or reduced-price lunch

Special Populations Served
N/A

Statistically Significant and Positive Effects

Domain	Measure	Effect Size	Timing of Measurement	Impact	ESSA Tier
Reading achievement	Gates-MacGinitie Reading Test (Grades 2–5)	N/A	Fall following program	Treatment youth who received school-based intervention or tutoring made improvements in reading relative to comparison youth.	III

SOURCE: Richard L. Luftig, "When a Little Bit Means a Lot: The Effects of a Short-Term Reading Program on Economically Disadvantaged Elementary Schoolers," *Reading Research and Instruction*, Vol. 42, No. 4, 2003, pp. 1–13.

NOTES: Per ESSA, evidence-based interventions demonstrate "a statistically significant effect on improving student outcomes or other relevant outcomes" based on strong (Tier I), moderate (Tier II), or promising (Tier III) evidence.

N/A indicates positive effect size cannot be calculated because standard deviations were not reported.

Building Educated Leaders for Life (BELL)

A five- to six-week summer program offered by a community-based organization and designed to improve academic skills, parental involvement, academic self-perceptions, and social behaviors among low-income youth and families. The program was offered for eight hours per day and five days per week. Each week's instruction included eight hours of literacy (two hours per day, four days per week), four hours of math (one hour per day, four days per week), and 6.5 hours of community time (30 minutes, four days per week and a half-day field trip on Friday).

EVIDENCE OF EFFECTIVENESS

Positive, statistically significant finding on reading for elementary school youth. Evaluated and found no evidence of effect on academic self-concept or positive social skills and behaviors for elementary students. A study of BELL with middle school youth tested but found no evidence of effect on reading, math, or school engagement.

- ✓ ACADEMIC ACHIEVEMENT: READING
- ACADEMIC ACHIEVEMENT: MATH
- SCHOOL ENGAGEMENT
- SOCIAL AND EMOTIONAL LEARNING

KEY

- ✓ strong evidence
- ✓ moderate evidence
- ✓ promising evidence
- program evaluated for this outcome but no evidence found

PROGRAM FEATURES

Main Components

Math and literacy instruction, field trips, speaker series, parent involvement, mentoring, community involvement

Duration

5–6 weeks: 5 days per week, 8 hours per day

Staffing

Lead teacher and a teaching assistant

Youth-Staff Ratio for Instructional Periods

15:2

Targeted Youth

Low-income, minority students who were academically challenged

Attendance Rates of Youth

65% of treatment group participated in BELL; average of 15 days in BELL

Support and Training for Staff

Teachers were provided reading and math curricula and a detailed guide that included guidance on curricular pacing, assessment, and homework.

Setting

Community-based organization

STUDY DESCRIPTION

This random assignment study was conducted at three sites (two in Boston, Mass., and one in New York City) in summer 2005. Participation in the study was not a condition for participation in the program, so all analysis was weighted for probability of getting into the program. Youth were in grades K–6 prior to the intervention. Control group youth did not participate in the program. Although the study was a randomized controlled trial, outcome testing for the control group occurred at a different time than outcome testing of the treatment group, which moved the study's evidence rating to Tier III.

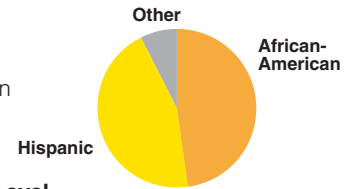
STUDY YOUTH AND LOCATION

Locale
Urban

Number of Youth and Sites
1,087 youth at three sites

Rising Grade Level
Grades 1–7

Race and Ethnicity
45% African-American
42% Hispanic
7% Other



Household Income Level
\$26,467 average for treatment group youth

Special Populations Served
N/A

Statistically Significant and Positive Effects

Domain	Measure	Effect Size	Timing of Measurement	Impact	ESSA Tier
Reading achievement	Gates-MacGinitie Total Reading	0.08	End of program	Treatment youth had higher reading achievement than control youth.	III

SOURCE: Duncan Chaplin and Jeffrey Capizzano, *Impacts of a Summer Learning Program: A Random Assignment Study of Building Educated Leaders for Life (BELL)*, Washington, D.C.: Urban Institute, August 2006.

NOTE: Per ESSA, evidence-based interventions demonstrate “a statistically significant effect on improving student outcomes or other relevant outcomes” based on strong (Tier I), moderate (Tier II), or promising (Tier III) evidence.

Summer Reading Day Camp

A free, full-day, seven-week camp providing two hours of daily reading instruction from 8 to 10 a.m., with the remainder of the day dedicated to summer camp activities. Reading was taught by credentialed teachers using a commercially available curriculum.

EVIDENCE OF EFFECTIVENESS

Positive, statistically significant findings on decoding and reading comprehension. Evaluated and found no evidence of effect on decoding during follow-up measurement in May.

✓ ACADEMIC ACHIEVEMENT: READING

KEY

- ✓ strong evidence
- ✓ moderate evidence
- ✓ promising evidence
- program evaluated for this outcome but no evidence found

PROGRAM FEATURES

Main Components

Reading instruction using a commercially available curriculum and basal readers and a range of enrichment activities, including art, sports, and swimming

Duration

7 weeks: 5 days per week, 8 a.m. to 5 p.m.

Staffing

Credentialed elementary school teachers

Youth-Staff Ratio for Instructional Periods

15:1

Targeted Youth

Low-income students

Attendance Rates of Youth

N/A

Support and Training for Staff

N/A

Setting

N/A

STUDY DESCRIPTION

The three principals from the three elementary schools in Los Angeles, Calif., who participated in the study were informed that 54 first-graders from their school would be randomly selected and assigned to either the summer reading camp treatment group or to the control group. Of the 54 youth randomly selected from each school, 24 were randomly assigned to the treatment group. The remaining 30 youth made up the control group. Youth in the control group did not receive any summer services.

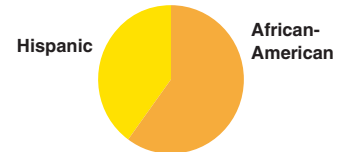
STUDY YOUTH AND LOCATION

Locale
Urban

Number of Youth and Sites
162 youth (72 treatment, 90 control) from three elementary schools

Rising Grade Level
Grade 2

Race and Ethnicity
60% African-American
40% Hispanic



Household Income Level
100% eligible for free or reduced-price lunch

Special Populations Served
N/A

Statistically Significant and Positive Effects

Domain	Measure	Effect Size	Timing of Measurement	Impact	ESSA Tier
Reading achievement	Gates-MacGinitie Word Decoding Levels 1 and 2 Form S.	0.96	September following summer program	Treatment youth had higher word decoding than control youth.	III
		0.59	December following summer program		
	Gates-MacGinitie Comprehension Levels 1 and 2 Form S.	1.35	September following summer program	Treatment youth had higher reading comprehension than control youth.	
1.25		December following summer program			
0.47		May following summer program			

SOURCE: John Schacter and Booil Jo, "Learning When School Is Not in Session: A Reading Summer Day-Camp Intervention to Improve the Achievement of Exiting First-Grade Students Who Are Economically Disadvantaged," *Journal of Research in Reading*, Vol. 28, No. 2, 2005, pp. 158–169.

NOTE: Per ESSA, evidence-based interventions demonstrate "a statistically significant effect on improving student outcomes or other relevant outcomes" based on strong (Tier I), moderate (Tier II), or promising (Tier III) evidence.

Summer School Program for Rising Third Graders

A school-based, four-week, half-day, voluntary program for four days each week to assist at-risk rising third graders in reading.

EVIDENCE OF EFFECTIVENESS

Positive, statistically significant finding on reading.

✓ ACADEMIC ACHIEVEMENT: READING

KEY

- ✓ strong evidence
- ✓ moderate evidence
- ✓ promising evidence
- program evaluated for this outcome but no evidence found

PROGRAM FEATURES

Main Components

Reading instruction

Duration

4 weeks: 4 hours per day, Monday through Thursday

Staffing

Credentialed elementary school teachers

Youth-Staff Ratio for Instructional Periods

N/A

Targeted Youth

Students performing below grade level

Attendance Rates of Youth

N/A

Support and Training for Staff

Teachers received intensive training and coaching in reading strategies for four weeks during the school year.

Setting

School

STUDY DESCRIPTION

This study used a quasi-experimental, nonrandomized pretest-posttest comparison group design with matching for a program offered in summers 2002 and 2003. Youth with high attendance (90 percent or higher) were matched with comparison group youth who were eligible but did not attend the program. Youth were in second grade prior to the intervention.

STUDY YOUTH AND LOCATION

Locale

Suburban and rural

Number of Youth and Sites

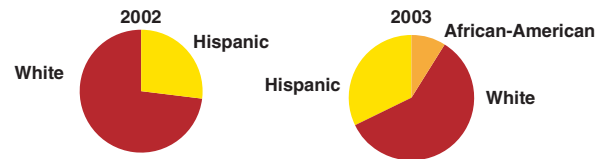
2002: 22 treatment youth, 22 comparison youth
 2003: 23 treatment youth, 23 comparison youth

Rising Grade Level

Grade 3

Race and Ethnicity

2002: 27% Hispanic, 73% White
 2003: 9% African-American, 39% Hispanic, 52% White



Household Income Level

2002: 23% were eligible for free or reduced-price lunch
 2003: 30% were eligible for free or reduced-price lunch

Special Populations Served

N/A

Statistically Significant and Positive Effects

Domain	Measure	Effect Size	Timing of Measurement	Impact	ESSA Tier
Reading achievement	Developmental Reading Assessment (cohorts 1 and 2 pooled)	0.76	Posttest (unclear)	High-attending youth in the combined cohort had higher reading scores postprogram than comparison youth.	III

SOURCE: Brenda D. Waters, *The Effect of the Second Grade Summer School Program on the Reading Achievement of At-Risk Second Grade Students*, dissertation, University of Houston, 2004, Ann Arbor, Mich.: University Microfilms International, 3122369, 2004.

NOTE: Per ESSA, evidence-based interventions demonstrate “a statistically significant effect on improving student outcomes or other relevant outcomes” based on strong (Tier I), moderate (Tier II), or promising (Tier III) evidence.

Chicago's Mandatory Summer School

A mandatory, four- to six-week, school-based summer learning program in Chicago that provided academic support over the summer to youth who did not meet the baseline score to advance to the next grade.

EVIDENCE OF EFFECTIVENESS

Positive, statistically significant findings on the reading and math state assessment.

- ✓ ACADEMIC ACHIEVEMENT: MATH
- ✓ ACADEMIC ACHIEVEMENT: READING

KEY

- ✓ strong evidence
- ✓ moderate evidence
- ✓ promising evidence
- program evaluated for this outcome but no evidence found

PROGRAM FEATURES

Main Components

English language arts and math instruction focused on students' academic needs

Duration

4–6 weeks: usually 4 hours per day

Staffing

Teachers

Youth-Staff Ratio for Instructional Periods

Not specified. Class sizes were smaller than during the school year.

Targeted Youth

Students performing below grade level

Attendance Rates of Youth

18 days (average)

Support and Training for Staff

N/A

Setting

School

STUDY DESCRIPTION

This study used a regression discontinuity design to compare the outcomes of youth who barely missed the proficiency level on the reading or math standardized tests and therefore were mandated to attend summer school with those who barely met the proficiency levels on both tests and were not mandated to attend the summer school. Youth were in grades 3 and 5 prior to attending the summer school.

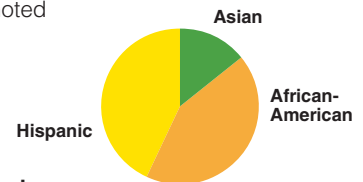
STUDY YOUTH AND LOCATION

Locale
Urban

Number of Youth and Sites
No way to determine

Rising Grade Level
Grades 4 and 6, if promoted

Race and Ethnicity
12% Asian
36% Hispanic
36% African-American



Household Income Level
88% of participants were eligible for free lunch

Special Populations Served
N/A

Statistically Significant and Positive Effects

Domain	Measure	Effect Size	Timing of Measurement	Impact	ESSA Tier
Math achievement	2002 state math test score	0.10–0.20	Spring following summer program	Treatment youth mandated to attend summer school due to low math performance performed better on the state mathematics assessment than comparison group youth.	III
Reading achievement	2002 state reading test score	0.12–0.17	Spring following summer program	Treatment youth mandated to attend summer school due to low reading performance performed better on the state reading assessment than comparison group youth.	III

SOURCE: Jordan D. Matsudaira, “Mandatory Summer School and Student Achievement,” *Journal of Econometrics*, Vol. 142, 2008, pp. 829–850.

NOTE: Per ESSA, evidence-based interventions demonstrate “a statistically significant effect on improving student outcomes or other relevant outcomes” based on strong (Tier I), moderate (Tier II), or promising (Tier III) evidence.

National Summer Learning Project

District-led, five- to six-week, voluntary summer programs offered at no cost to low-income, urban elementary youth in school- and community-based locations. Each day, youth received at least three hours of instruction in mathematics and reading from district teachers and participated in enrichment activities often provided by community-based organizations.

EVIDENCE OF EFFECTIVENESS

Positive, statistically significant findings on math. Evaluated and found no evidence of effect on school-year attendance, behavior, or grades. For high-attending students, positive, statistically significant findings on math, reading, and social and emotional learning outcomes.

- ✔ ACADEMIC ACHIEVEMENT: MATH
- ✔ ACADEMIC ACHIEVEMENT: READING
- SCHOOL ENGAGEMENT
- ✔ SOCIAL AND EMOTIONAL LEARNING

KEY	
✔	strong evidence
✔	moderate evidence
✔	promising evidence
○	program evaluated for this outcome but no evidence found

PROGRAM FEATURES

Main Components

Mathematics, English language arts, enrichment activities (e.g., arts, swimming, science, fencing, rock climbing)

Duration

5–6 weeks: 5 days per week, average of 8–9 hours per day with 3 hours per day of academic instruction

Staffing

Certified teachers delivered the academic instruction and both district- and community-based instructors delivered enrichment instruction.

Youth-Staff Ratio for Instructional Periods

Maximum of 15:1

Targeted Youth

Low-income students

Attendance Rates of Youth

Average attendance rates for students attending at least a day was 75% in each summer.

Support and Training for Staff

Teachers were provided professional development on curricular materials.

Setting

Most sites were in district-owned school buildings; some were in community locations.

STUDY DESCRIPTION

This randomized controlled trial estimated the impact of district-provided, voluntary summer programs for youth in five districts (Boston, Mass.; Dallas, Tex.; Duval County, Fla.; Pittsburgh, Pa.; Rochester, N.Y.) across the country. Youth in the third grade applying to the summer program were randomized into treatment and control groups. Treatment youth were offered the opportunity to attend the summer program for two summers (2013 and 2014). The control group youth did not participate in these summer programs but might have participated in other summer programs. The outcomes analyses included both experimental and correlational modeling. The evaluation reported findings and guidance on implementation in addition to the findings on outcomes.

STUDY YOUTH AND LOCATION

Locale

Urban

Number of Youth and Sites

5,637 youth across five school districts

Rising Grade Level

Grades 4 and 5

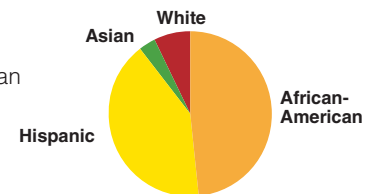
Race and Ethnicity

47% African-American

40% Hispanic

3% Asian

7% White



Household Income Level

89% eligible for free or reduced-price lunch

Special Populations Served

31% English language learners

10% youth with Individualized Education Programs

42% youth with the lowest score levels in mathematics and English language arts

Statistically Significant and Positive Effects

Domain	Measure	Effect Size	Timing of Measurement	Impact	ESSA Tier
Mathematics achievement	Pearson's Group Mathematics Assessment and Diagnostic Evaluation	0.08	Fall following summer 2013 program	Treatment youth had higher mathematics scores than control youth.	I
	State Math Assessment	0.07	Spring following summer 2013 program	High-attending treatment youth had higher spring state math assessment scores than control youth.	III
		0.14	Spring following summer 2014 program		
Reading achievement	Pearson's Group Reading Assessment and Diagnostic Evaluation	0.08	Fall following summer 2014 program	High-attending treatment youth had higher reading scores on the fall and spring assessments than control youth.	III
	State Reading Assessment	0.09	Spring following summer 2014 program		III
Social and emotional learning (SEL)	RAND-adapted Devereux Student Strengths Assessment	0.14	11 weeks into the school year following summer 2014 program	High-attending treatment youth were rated higher in SEL by their teachers than control youth.	III

SOURCE: Catherine H. Augustine, Jennifer Sloan McCombs, John F. Pane, Heather L. Schwartz, Jonathan Schweig, Andrew McEachin, and Kyle Siler-Evans, *Learning from Summer: Effects of Voluntary Summer Learning Programs on Low-Income Urban Youth*, Santa Monica, Calif.: RAND Corporation, RR-1557-WF, 2016.

NOTE: Per ESSA, evidence-based interventions demonstrate "a statistically significant effect on improving student outcomes or other relevant outcomes" based on strong (Tier I), moderate (Tier II), or promising (Tier III) evidence.

Jump Start Summer School Program

A three-week, math summer program offered to low-performing elementary and middle school youth using an EngageNY curriculum.

EVIDENCE OF EFFECTIVENESS

Positive, statistically significant finding on math for rising fourth-grade students. Evaluated but found no evidence of effect on math achievement in grades 5–9.

✓ ACADEMIC ACHIEVEMENT: MATH

KEY

- ✓ strong evidence
- ✓ moderate evidence
- ✓ promising evidence
- program evaluated for this outcome but no evidence found

PROGRAM FEATURES

Main Components

Math instruction

Duration

3 weeks

Staffing

N/A

Youth-Staff Ratio for Instructional Periods

N/A

Targeted Youth

Students performing below grade level

Attendance Rates of Youth

88% in 2014 and 66% in 2015

Support and Training for Staff

N/A

Setting

N/A

STUDY DESCRIPTION

The study compared performance of youth attending the program in either 2013–2014 or 2014–2015 with a matched comparison group of youth who did not attend the program. Only students with a pretest and a posttest were included in the study. Youth were in grades 3–8 prior to the intervention.

STUDY YOUTH AND LOCATION

Locale

Urban (Southwest U.S.)

Number of Youth and Sites

778 youth (389 treatment, 389 comparison)

Rising Grade Level

Grades 4–9

Race and Ethnicity

N/A

Household Income Level

N/A

Special Populations Served

N/A

Statistically Significant and Positive Effects

Domain	Measure	Effect Size	Timing of Measurement	Impact	ESSA Tier
Math achievement	AzAC Summative Math Assessment	N/A	Fall after summer program	Treatment youth had higher math scores than comparison youth.	III

SOURCE: Kristi L. Stewart, *Closing the Summer Learning Gap in the Content Area of Mathematics*, dissertation, Grand Canyon University, 2017, Ann Arbor, Mich.: ProQuest LLC, 10275169, 2017.

NOTE: Per ESSA, evidence-based interventions demonstrate “a statistically significant effect on improving student outcomes or other relevant outcomes” based on strong (Tier I), moderate (Tier II), or promising (Tier III) evidence.

NYCDOE's Summer Success Academy

A mandatory, 20-day, school-based summer school program offered to youth who did not meet the test-based requirements for promotion to the next grade in English language arts (ELA) or mathematics.

EVIDENCE OF EFFECTIVENESS

Positive, statistically significant finding on reading achievement on the state assessment. Evaluated but found no evidence of effect on math achievement.

- ACADEMIC ACHIEVEMENT: MATH
- ACADEMIC ACHIEVEMENT: READING

KEY	
<input checked="" type="checkbox"/>	strong evidence
<input checked="" type="checkbox"/>	moderate evidence
<input checked="" type="checkbox"/>	promising evidence
<input type="radio"/>	program evaluated for this outcome but no evidence found

PROGRAM FEATURES

Main Components

ELA and math instruction

Duration

20 days: 4 days per week, 4.5 hours per day

Staffing

Teachers

Youth-Staff Ratio for Instructional Periods

Maximum of 15:1

Targeted Youth

Students at risk of grade retention

Attendance Rates of Youth

88%

Support and Training for Staff

N/A

Setting

School

STUDY DESCRIPTION

This study used a regression discontinuity design to compare the outcomes of New York City youth who barely missed the Level 2 (“partially meets standards”) proficiency level based on their fifth grade ELA or math spring state test scores and therefore attended the Summer Success Academy with those who barely demonstrated Level 2 proficiency and were not offered the opportunity to attend Summer Success Academy.

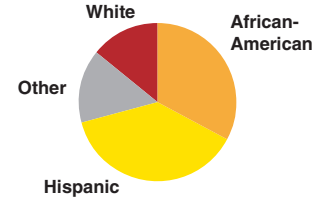
STUDY YOUTH AND LOCATION

Locale
Urban

Number of Youth and Sites
57,889 youth in the cohort
(13% attended the summer program)

Rising Grade Level
Grade 6, if promoted

Race and Ethnicity
33% African-American
38% Hispanic
15% Other
15% White



Household Income Level
83% eligible for free or reduced-price lunch

Special Populations Served
7% English language learners

Statistically Significant and Positive Effects

Domain	Measure	Effect Size	Timing of Measurement	Impact	ESSA Tier
Reading achievement	Sixth-grade ELA achievement	0.08	Spring following summer program	Treatment youth who were mandated to summer school for low ELA performance had higher spring ELA scores than comparison youth.	II

SOURCE: Louis T. Mariano and Paco Martorell, “The Academic Effects of Summer Instruction and Retention in New York City,” *Educational Evaluation and Policy Analysis*, Vol. 35, No. 1, 2013, pp. 96–117.

NOTE: Per ESSA, evidence-based interventions demonstrate “a statistically significant effect on improving student outcomes or other relevant outcomes” based on strong (Tier I), moderate (Tier II), or promising (Tier III) evidence.

Middle School STEM Program with VEX Robotics

A five-week, full-day program hosted at Coppin State University and Baltimore city schools and that provided youth in high-need middle schools with a half-day of instruction in mathematics and science and a half-day of enrichment activities. The robotics workshop taught students the fundamentals of building robots and provided time for teams to build their own robots and participate in competitions.

EVIDENCE OF EFFECTIVENESS

Positive, statistically significant finding on school year attendance after the first summer. Evaluated but found no evidence of effect on school year attendance after the second summer or for the second cohort, mathematics achievement, or measures of school engagement focused on interest in STEM careers.

- SCHOOL ENGAGEMENT
- MATHEMATICS

KEY

- strong evidence
- moderate evidence
- promising evidence
- program evaluated for this outcome but no evidence found

PROGRAM FEATURES

Main Components

Math and science instruction, robotics workshop, and enrichment activities

Duration

5 weeks: 5 full days per week

Staffing

School teachers with satisfactory performance ratings

Youth-Staff Ratio for Instructional Periods

N/A

Targeted Youth

Youth in high-need schools

Attendance Rates of Youth

55–58% attended at least 80% of the time (Years 1–3)

Support and Training for Staff

A week of professional development was provided to teachers before they began the program. Training on the curriculum was provided. In Years 1 and 2, the mathematics curriculum was Math Works. In Year 3, the mathematics curriculum was from EngageNY.

Setting

School

STUDY DESCRIPTION

This quasi-experimental study formed groups by a matching procedure that used prior-year attendance and mathematics test scores to examine student outcomes. Youth were in grades 6–8 prior to the summer program that took place in 2012, 2013, and 2014. Comparison youth did not attend the summer program. The study also reports on implementation fidelity.

STUDY YOUTH AND LOCATION

Locale
Urban

Number of Youth and Sites
193 youth at 10 sites in 2012, 384 youth at 11 sites in 2013, and 386 youth at 9 sites in 2014

Rising Grade Level
Grades 7–9

Race and Ethnicity
95% ethnic or racial minorities

Household Income Level
86% eligible for free or reduced-price lunch in Year 1
88% eligible for free or reduced-price lunch in Years 2 and 3

Special Populations Served
N/A

Statistically Significant and Positive Effects

Domain	Measure	Effect Size	Timing of Measurement	Impact	ESSA Tier
School engagement	School year attendance	N/A (1.40% difference in attendance)	School year following the 2012 summer program	Treatment youth had higher average school attendance rates than comparison youth.	III

SOURCE: Martha A. Mac Iver and Douglas J. Mac Iver, *The Baltimore City Schools Middle School STEM Summer Program with VEX Robotics*, Baltimore, Md.: Baltimore Education Research Consortium, July 2015.

NOTES: Per ESSA, evidence-based interventions demonstrate “a statistically significant effect on improving student outcomes or other relevant outcomes” based on strong (Tier I), moderate (Tier II), or promising (Tier III) evidence.

N/A indicates positive effect size cannot be calculated because standard deviations were not reported.

Jaime Escalante Math Program

A seven-week, middle school mathematics intervention and enrichment program designed for youth of color and low-income youth in urban communities.

EVIDENCE OF EFFECTIVENESS

Positive, statistically significant finding on the state math assessment after two summers of treatment. Evaluated but found no evidence of effect on math after one summer of treatment.

✓ ACADEMIC ACHIEVEMENT: MATH

KEY

- ✓ strong evidence
- ✓ moderate evidence
- ✓ promising evidence
- program evaluated for this outcome but no evidence found

PROGRAM FEATURES

Main Components

Math instruction, differentiated based on a pretest

Duration

7 weeks: 4 hours per day, 5 days per week

Staffing

Mathematics teachers or professors with a bachelor's degree or higher in mathematics and a minimum of five years of teaching experience

Youth-Staff Ratio for Instructional Periods

N/A

Targeted Youth

Low-income and/or minority students

Attendance Rates of Youth

N/A

Support and Training for Staff

Jaime Escalante Math Program administration trained instructors on how to teach the curriculum.

Setting

School

STUDY DESCRIPTION

A quasi-experimental, nonequivalent control group design (no matching) to compare treatment youth with comparison youth who did not participate in the summer program in summers 2011 and 2012. Some youth attended the treatment for one summer, and some for two summers.

STUDY YOUTH AND LOCATION

Locale
Urban

Number of Youth and Sites
275 youth

Rising Grade Level
Grades 7–8

Race and Ethnicity
N/A

Household Income Level
N/A

Special Populations Served
N/A

Statistically Significant and Positive Effects

Domain	Measure	Effect Size	Timing of Measurement	Impact	ESSA Tier
Math achievement	Math California Standards Test (CST) data—8th grade	0.85	Spring after second summer program	Treatment youth had higher math test scores than comparison youth after two summers of treatment.	III

SOURCES: Bryan D. Bowens and Susan R. Warren, "Toward Social Justice: The Characteristics of an Effective Mathematics Intervention Program for Urban Middle School Students," *Journal of Urban Learning, Teaching, and Research*, Vol. 12, 2016, pp. 35–46; Bryan D. Bowens, *The Jaime Escalante Math Program's Effect on Math Achievement*, dissertation, Azusa, Calif.: Azusa Pacific University, 2014.

NOTE: Per ESSA, evidence-based interventions demonstrate "a statistically significant effect on improving student outcomes or other relevant outcomes" based on strong (Tier I), moderate (Tier II), or promising (Tier III) evidence.

Middle School Summer Program Focused on Reading, Writing, and Mathematics

A voluntary, five-week, school-based, middle school summer full-day program that offered reading, mathematics, writing, and vocabulary to youth who had scored below proficient. Youth were charged \$75 to participate.

EVIDENCE OF EFFECTIVENESS

Positive, statistically significant finding on reading for the second cohort of low-income youth (only tested on reading). Evaluated but found no evidence of effect on reading, math, or writing for the first, mixed-income cohort.

- ACADEMIC ACHIEVEMENT: MATH
- ACADEMIC ACHIEVEMENT: READING

KEY

- strong evidence
- moderate evidence
- promising evidence
- program evaluated for this outcome but no evidence found

PROGRAM FEATURES

Main Components

Reading, writing, math, vocabulary instruction

Duration

5 weeks: 23 full days

Staffing

District teachers

Youth-Staff Ratio for Instructional Periods

20:1 for general education youth
15:1 for special education and English language learner youth

Targeted Youth

Students below grade level

Attendance Rates of Youth

N/A

Support and Training for Staff

Teachers received training on the summer school curriculum during a two-day training session.

Setting

School

STUDY DESCRIPTION

This quasi-experimental study with a pretest-posttest design with nonequivalent comparison groups included a main study and a follow-up study. Treatment youth in the main study attended summer school in Anchorage, Alaska, in 2003; the comparison group youth did not. The follow-up study occurred the following summer (2004) with treatment youth participating in the summer program and a comparison group who did not attend. Youth in both studies were in seventh grade prior to the intervention.

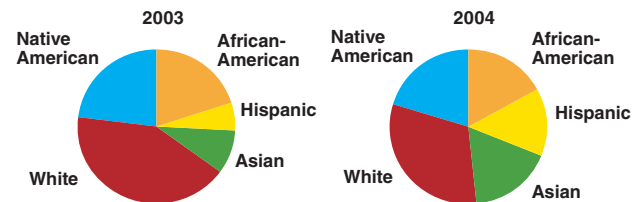
STUDY YOUTH AND LOCATION

Locale
Urban

Number of Youth and Sites
201 treatment youth in 2003, 64 treatment youth in 2004

Rising Grade Level
Grade 8

Race and Ethnicity
2003: 20% African-American, 6% Hispanic, 9% Asian, 42% White, 23% Native American
2004: 17% African-American, 14% Hispanic, 17% Asian, 31% White, 20% Native American



Household Income Level
2003: 41% of youth were from low-income households
2004: 100% of youth were from low-income households

Special Populations Served
2003: 17% English language learners
2004: 33% English language learners

Statistically Significant and Positive Effects

Domain	Measure	Effect Size	Timing of Measurement	Impact	ESSA Tier
Reading achievement	Gates-MacGinitie	N/A	Fall following program (second cohort)	Low-income treatment youth had higher reading scores than low-income comparison youth.	III

SOURCE: Gail B. Opalinski, *The Effects of a Middle School Summer Program on the Achievement of NCLB Identified Subgroups*, dissertation, University of Oregon, 2006, Ann Arbor, Mich.: University Microfilms International, 3224110, 2006.

NOTES: Per ESSA, evidence-based interventions demonstrate “a statistically significant effect on improving student outcomes or other relevant outcomes” based on strong (Tier I), moderate (Tier II), or promising (Tier III) evidence.

N/A indicates positive effect size cannot be calculated because standard deviations were not reported.

Elevate Math Summer Program

A school-based, 19-day math program offered for four hours each day over four weeks. The program was designed by the Silicon Valley Education Foundation as part of its ongoing effort to help youth succeed in middle school math and to master important math and science skills that are needed to succeed in college and the labor market. The foundation estimated that the program cost \$500 per participating youth.

EVIDENCE OF EFFECTIVENESS

Positive, statistically significant finding on math. Evaluated but found no evidence of effect on interest in math or sense of competence in math.

- ACADEMIC ACHIEVEMENT: MATH
- SCHOOL ENGAGEMENT
- SOCIAL AND EMOTIONAL LEARNING

KEY

- strong evidence
- moderate evidence
- promising evidence
- program evaluated for this outcome but no evidence found

PROGRAM FEATURES

Main Components

Traditional math instruction, Khan Academy, field trip to a local college or university, and college information night for families and youth. Laptops were provided to all participating youth.

Duration

4 weeks: 4 hours per day for 19 days

Staffing

A certified teacher and a college-educated teaching assistant

Youth-Staff Ratio for Instructional Periods

15:1

Targeted Youth

Students below grade level in mathematics

Attendance Rates of Youth

83% of treatment group youth attended at least 15 of the 19 days

Support and Training for Staff

Credentialed teachers and their college-level assistants received 40 hours of professional development. Twenty-four hours of professional development occurred prior to the summer program and focused on curriculum understanding and implementation, instructional strategies aligned with the standards, math practices, technology integration in the classroom, and student engagement. During the program, teaching staff received an additional 16 hours of support from an instructional coach, who observed instruction, provided feedback, and led a professional learning community focused on instructional strategies.

Setting

School

STUDY DESCRIPTION

Youth were randomly assigned to a treatment group that received access to the program at the beginning of summer 2014 or to a control group that received access to the program later in the summer. Youth were in seventh grade prior to the summer and came from eight schools in six districts. Participating districts identified eligible youth based on existing sixth-grade California Standards Test (CST) data. The study calculated program effects by comparing treatment group outcomes at the end of the first summer session with control group outcomes at the beginning of the second summer session.

STUDY YOUTH AND LOCATION

Locale

Suburban

Number of Youth and Sites

477 youth (239 treatment, 238 control)

Rising Grade Level

Grade 8

Race and Ethnicity

N/A

Household Income Level

N/A

Special Populations Served

N/A

Statistically Significant and Positive Effects

Domain	Measure	Effect Size	Timing of Measurement	Impact	ESSA Tier
Math achievement	MDTP Algebra Readiness test	0.68	End of program	Treatment youth had higher algebra scores at the end of the summer program than control youth.	III

SOURCE: Jason Snipes, Chun-Wei Huang, Karina Jaquet, and Neal Finkelstein, *The Effects of the Elevate Math Summer Program on Math Achievement and Algebra Readiness*, Washington, D.C.: National Center for Education Evaluation and Regional Assistance, July 2015.

NOTE: Per ESSA, evidence-based interventions demonstrate “a statistically significant effect on improving student outcomes or other relevant outcomes” based on strong (Tier I), moderate (Tier II), or promising (Tier III) evidence.

The study also found positive effects for subscales of the MDTP Algebra Readiness test.

Three-Week Summer Intervention to Improve Algebra I

A three-week summer algebra program offered to high school youth who had failed an algebra test at the end of middle school. Classes were offered in single-sex groups.

EVIDENCE OF EFFECTIVENESS

Positive, statistically significant finding on math achievement. Evaluated but found no evidence of effect on math grades, grade point average, number of failed classes, or number of absences.

- ACADEMIC AND CAREER ATTAINMENT
- ACADEMIC ACHIEVEMENT: MATH
- SCHOOL ENGAGEMENT

KEY

- strong evidence
- moderate evidence
- promising evidence
- program evaluated for this outcome but no evidence found

PROGRAM FEATURES

Main Components

Instruction in algebra, single-sex grouping

Duration

3 weeks

Staffing

N/A

Youth-Staff Ratio for Instructional Periods

N/A

Targeted Youth

Students performing below grade level

Attendance Rates of Youth

N/A

Support and Training for Staff

N/A

Setting

N/A

STUDY DESCRIPTION

This study examined a summer program for youth who did not pass the GATEWAY exam at the end of algebra using a quasi-experimental, pre-post design. The intervention took place in the summers of 2003–2007. Comparison youth did not participate in the program but completed an Algebra I course during the following school year. Youth were in ninth grade prior to intervention.

STUDY YOUTH AND LOCATION

Locale

N/A

Number of Youth and Sites

118 treatment, 98 comparison

Rising Grade Level

Grade 10

Race and Ethnicity

100% African-American

Household Income Level

88% eligible for free or reduced-price lunch (school population)

Special Populations Served

N/A

Statistically Significant and Positive Effects

Domain	Measure	Effect Size	Timing of Measurement	Impact	ESSA Tier
Math achievement	GATEWAY Math	N/A	End of summer	Treatment youth had higher GATEWAY math scores than comparison youth.	III

SOURCE: Arthur W. Jackson, *Efficacy of Summer Intervention to Improve GATEWAY Mathematics Examination Scores*, dissertation, Walden University, 2011, Ann Arbor, Mich.: University Microfilms International, 3434115, 2011.

NOTES: Per ESSA, evidence-based interventions demonstrate “a statistically significant effect on improving student outcomes or other relevant outcomes” based on strong (Tier I), moderate (Tier II), or promising (Tier III) evidence.

N/A indicates positive effect size cannot be calculated because standard deviations were not reported.

Higher Achievement Summer Academy

A six-week, school-based, full-day summer program for academically motivated but underserved middle school youth participating in Higher Achievement, a year-round, out-of-school-time program. The program included daily instruction in math, science, social studies, and literature; two enrichment electives; academic competitions; weekly field trips; and an out-of-town trip to visit a university. The program's ultimate goal was to increase acceptance into—and scholarships to attend—competitive high schools.

EVIDENCE OF EFFECTIVENESS

Positive, statistically significant findings on enjoyment of learning and high school selection. Evaluated but found no evidence of effect on math, reading comprehension, school enjoyment, academic support (from peers or adults), out-of-school misconduct, persistence, creativity, academic self-efficacy, curiosity, prediction of fall grades, or growth mindset.

- ACADEMIC ACHIEVEMENT: MATH
- ACADEMIC ACHIEVEMENT: READING
- AVOIDANCE OF RISK-TAKING BEHAVIORS
- SOCIAL AND EMOTIONAL LEARNING

KEY

- strong evidence
- moderate evidence
- promising evidence
- program evaluated for this outcome but no evidence found

PROGRAM FEATURES

Main Components

Math, science, social studies, literature instruction, and electives (e.g., sculpture, martial arts); weekly field trips; three-day out-of-town university trip

Duration

6 weeks: 5 days per week, 8 a.m. to 4 p.m.

Staffing

Teachers and summer interns who are high school students and program alumni

Youth-Staff Ratio for Instructional Periods

N/A

Targeted Youth

Academically motivated, underserved students

Attendance Rates of Youth

N/A

Support and Training for Staff

Teachers received a seven-day orientation and training session; classes were observed during the summer and teachers were provided with feedback.

Setting

School

STUDY DESCRIPTION

This study examined the impact of Higher Achievement by randomly assigning youth to participate in the program. Part of a larger evaluation of five of the six Higher Achievement centers in Washington, D.C., and Alexandria, Va., this study focused on youths' experiences during summer 2010. Control youth did not attend the program. Youth were in middle school prior to the summer intervention. The study was not able to disaggregate the effect of summer from other aspects of the program.

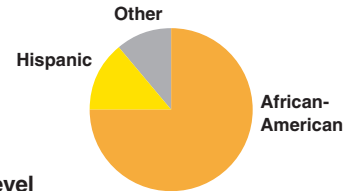
STUDY YOUTH AND LOCATION

Locale
Urban

Number of Youth and Sites
423 youth in the larger evaluation who enrolled in 2007 or 2008

Rising Grade Level
Grades 7–8

Race and Ethnicity
75% African-American
14% Hispanic
9% Other



Household Income Level
66% eligible for free or reduced-price lunch

Special Populations Served
17% English language learners

Statistically Significant and Positive Effects

Domain	Measure	Effect Size	Timing of Measurement	Impact	ESSA Tier
Social and emotional learning	Enjoyment of learning	0.18	Fall following program	Treatment youth reported greater enjoyment of learning than did control youth.	III
	Percentage wanting to attend a public high school	-0.45	Fall following program	Treatment youth had lower likelihood of wanting to attend a public high school than control youth.	III
	Percentage wanting to attend a competitive high school	0.39	Fall following program	Treatment youth had higher likelihood of wanting to attend a competitive high school than control youth.	III

SOURCE: Carla Herrera, Leigh L. Linden, Amy J. A. Arbreton, and Jean Baldwin Grossman, Summer Snapshot: Exploring the Impact of Higher Achievement's Year-Round Out-of-School-Time Program on Summer Learning, Philadelphia, Pa.: Public/Private Ventures, 2011.

NOTE: Per ESSA, evidence-based interventions demonstrate "a statistically significant effect on improving student outcomes or other relevant outcomes" based on strong (Tier I), moderate (Tier II), or promising (Tier III) evidence.

The effectiveness of the summer program may also be due to school year participation.

Ninth Grade Counts Initiative

A summer transition program offered to rising ninth graders identified as being at risk of dropping out of high school. Programs across six school districts varied in terms of specific content. However, each provided academic support, enrichment, and career and college exposure.

EVIDENCE OF EFFECTIVENESS

Positive, statistically significant finding on high school credits earned. Evaluated but found no evidence of effect on engagement with schooling.

- ACADEMIC AND CAREER ATTAINMENT
- SCHOOL ENGAGEMENT

KEY	
<input checked="" type="checkbox"/>	strong evidence
<input checked="" type="checkbox"/>	moderate evidence
<input checked="" type="checkbox"/>	promising evidence
<input type="checkbox"/>	program evaluated for this outcome but no evidence found

PROGRAM FEATURES

Main Components

Academic instruction, enrichment, career and college exposure

Duration

Varied by site

Staffing

Varied by site

Youth-Staff Ratio for Instructional Periods

N/A

Targeted Youth

Students at risk of dropping out

Attendance Rates of Youth

Varied by site

Support and Training for Staff

Varied by site

Setting

School, university, and community-based organization

STUDY DESCRIPTION

The study compared outcomes of youth in Portland, Oreg., who were identified as Academic Priority (i.e., at risk) in eighth grade and subsequently participated in the program in summer 2009 with a matched comparison group of Academic Priority youth who did not participate in the program. Matching was conducted using a propensity score model that controlled for demographic characteristics as well as eighth-grade academic indicators (e.g., reading and math test scores, attendance, and suspensions).

STUDY YOUTH AND LOCATION

Locale

Urban and suburban

Number of Youth and Sites

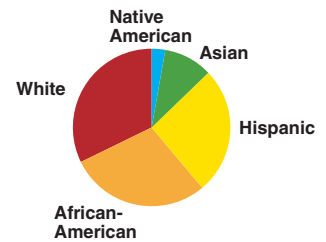
2,866 youth in six school districts

Rising Grade Level

Grade 9

Race and Ethnicity

3% Native American
 10% Asian
 26% Hispanic
 29% African-American
 32% White



Household Income Level

83% eligible for free or reduced-price lunch

Special Populations Served

25% English language learners

Statistically Significant and Positive Effects

Domain	Measure	Effect Size	Timing of Measurement	Impact	ESSA Tier
Academic and career attainment	High school credits earned by the end of ninth grade	N/A (0.56 credits)	End of ninth grade (grade following summer program)	Treatment youth earned more high school credits than comparison youth.	III

SOURCE: Northwest Evaluation Association, *Portland Schools Foundation Ninth Grade Counts: Student Data Report—Outcomes and Participation for Summer 2009 and Participation for Summer 2010*, Portland, Oreg., April 2011.

NOTE: Per ESSA, evidence-based interventions demonstrate “a statistically significant effect on improving student outcomes or other relevant outcomes” based on strong (Tier I), moderate (Tier II), or promising (Tier III) evidence.

ELL Summer Credit Recovery Program

Free, six-week, school-based voluntary credit recovery program in a large California urban school district aimed at expanding high school English language learners' access to core academic subjects. Youth could take English language arts (ELA), math, and science classes taught by certified district teachers.

EVIDENCE OF EFFECTIVENESS

Positive, statistically significant finding on taking more English language arts courses. Evaluated but found no evidence of effect on math and science course-taking, attendance, ELA achievement, or on-time graduation.

- ACADEMIC AND CAREER ATTAINMENT
- ACADEMIC ACHIEVEMENT: READING
- SCHOOL ENGAGEMENT

KEY	
<input checked="" type="checkbox"/>	strong evidence
<input checked="" type="checkbox"/>	moderate evidence
<input checked="" type="checkbox"/>	promising evidence
<input type="checkbox"/>	program evaluated for this outcome but no evidence found

PROGRAM FEATURES

Main Components

Access to core academic content in ELA, math, and science providing instruction tailored to the needs of newcomer English language learners and facilitating English language development

Duration

6 weeks

Staffing

N/A

Youth-Staff Ratio for Instructional Periods

N/A

Targeted Youth

English language learners who had lived in the United States for fewer than three years

Attendance Rates of Youth

N/A

Support and Training for Staff

N/A

Setting

School

STUDY DESCRIPTION

High school English language learners who participated in a voluntary summer program between 2013 and 2016 were compared with English language learners who did not participate. The study used triple-difference design to try to control for differences in unobserved factors, such as motivation.

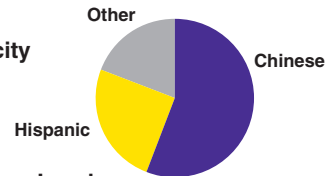
STUDY YOUTH AND LOCATION

Locale
Urban

Number of Youth and Sites
1,140 youth in one California school district

Rising Grade Level
Grades 10–12

Race and Ethnicity
56% Chinese
25% Hispanic
19% Other



Household Income Level
N/A

Special Populations Served
100% English language learners

Statistically Significant and Positive Effects

Domain	Measure	Effect Size	Timing of Measurement	Impact	ESSA Tier
Academic and career attainment	Number of ELA courses taken	0.50	1–3 years after summer program (12th grade)	Treatment youth took more ELA courses than comparison youth.	III

SOURCE: Angela Johnson, *Causal Impact of Summer Credit Recovery on High School English Learner Outcomes*, Stanford, Calif.: Stanford Center for Education Policy Analysis, 2017.

NOTE: Per ESSA, evidence-based interventions demonstrate “a statistically significant effect on improving student outcomes or other relevant outcomes” based on strong (Tier I), moderate (Tier II), or promising (Tier III) evidence.

School-Year Book Fair and Voluntary Summer Reading

A longitudinal, school-based book fair program held in the spring for three years and designed to encourage voluntary summer reading. Youth reviewed trade books at a book fair then indicated which ones they wanted. They ordered up to 15 books each spring and were guaranteed to receive 12 of the books they had selected to read at home over the summer.

EVIDENCE OF EFFECTIVENESS

Positive, statistically significant finding on reading after the third summer.

✓ ACADEMIC ACHIEVEMENT: READING

KEY

- ✓ strong evidence
- ✓ moderate evidence
- ✓ promising evidence
- program evaluated for this outcome but no evidence found

PROGRAM FEATURES

Main Components

Annual school-based book fair in the spring, voluntary at-home reading

Duration

30-minute visit to book fair every spring for three years; voluntary reading over the summer

Staffing

N/A

Youth-Staff Ratio for Instructional Periods

N/A

Targeted Youth

Low-income students

Attendance Rates of Youth

N/A

Support and Training for Staff

N/A

Setting

School and home

STUDY DESCRIPTION

This program randomly assigned youth from low-income families whose parents provided consent to receive summer books. Youth were in first or second grade prior to the intervention. For three consecutive years, youth in the treatment group selected books during a spring book fair and received up to 12 books. The control group youth received no books.

STUDY YOUTH AND LOCATION

Locale

Not reported (Florida)

Number of Youth and Sites

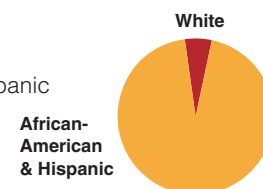
852 treatment youth from 17 high-poverty schools; 478 randomly selected youth for the control group from the same schools and who received no books

Rising Grade Level

Grades 2–6

Race and Ethnicity

89% African-American and Hispanic
5% White



Household Income Level

Youth from high-poverty schools in which 65–99% of youth were eligible for free or reduced-price lunch

Special Populations Served

N/A

Statistically Significant and Positive Effects

Domain	Measure	Effect Size	Timing of Measurement	Impact	ESSA Tier
Reading achievement	State reading assessment	0.14	End of third grade (after three summers of the book fair)	Treatment youth had higher state reading assessments than control youth after three summers of programming. Reading gains of treatment youth from the most economically disadvantaged families in the study were found to be larger than others.	I

SOURCE: Richard L. Allington, Anne McGill-Franzen, Gregory Camilli, Lunetta Williams, Jennifer Graff, Jacqueline Zeig, Courtney Zmach, and Rhonda Nowak, "Addressing Summer Reading Setback Among Economically Disadvantaged Elementary Students," *Reading Psychology*, Vol. 31, No. 5, 2010, pp. 411–427.

NOTE: Per ESSA, evidence-based interventions demonstrate "a statistically significant effect on improving student outcomes or other relevant outcomes" based on strong (Tier I), moderate (Tier II), or promising (Tier III) evidence.

Summer Books!

Youth received weekly home visits by a local bookmobile for ten weeks during the summer to provide a supply of high-interest, appropriate reading level books. During the bookmobile visits, youth selected up to five books to check out and read a passage to the teacher. At the end of the summer, participating youth could keep five books.

EVIDENCE OF EFFECTIVENESS

Positive, statistically significant finding on youths' self-concept as a reader. Evaluated but found no evidence of effect on measures of oral fluency, reading comprehension, or beliefs regarding the value of reading.

ACADEMIC ACHIEVEMENT: READING

SOCIAL AND EMOTIONAL LEARNING

KEY

- strong evidence
- moderate evidence
- promising evidence
- program evaluated for this outcome but no evidence found

PROGRAM FEATURES

Main Components

Weekly bookmobile visits

Duration

10 weeks with home visits lasting 15–45 minutes

Staffing

Two teachers—one from each participating school—were chosen to administer the program.

Youth-Staff Ratio for Instructional Periods

N/A

Targeted Youth

Low-income youth

Attendance Rates of Youth

N/A

Support and Training for Staff

N/A

Setting

Home

STUDY DESCRIPTION

Youth were randomly assigned to treatment by the teacher from the other participating school site, and parents were notified of these assignments. Youth were in second grade prior to the intervention. Teachers visited youths' homes with the bookmobile once per week for 10 weeks of summer vacation.

STUDY YOUTH AND LOCATION

Locale

Rural

Number of Youth and Sites

52 youth from low-income families assigned to treatment ($n = 29$) and control groups ($n = 23$) from two schools

Rising Grade Level

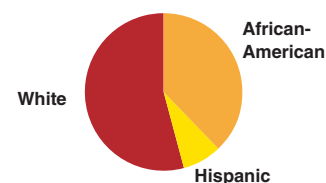
Grade 3

Race and Ethnicity

38% African-American

8% Hispanic

54% White



Household Income Level

85% eligible for free or reduced-price lunch

Special Populations Served

N/A

Statistically Significant and Positive Effects

Domain	Measure	Effect Size	Timing of Measurement	Impact	ESSA Tier
Social and emotional learning	Motivation to Read Profile—self-concept as reader	N/A	End of summer program	Treatment youth had higher self-concept as a reader than comparison youth.	III

SOURCE: Geraldine Martin Melosh, *Summer Books!—Stemming Reading Loss in High-Poverty Second Graders Through Access to Appropriate Books During the Summer Vacation Break*, dissertation, University of Florida, 2003.

NOTES: Per ESSA, evidence-based interventions demonstrate “a statistically significant effect on improving student outcomes or other relevant outcomes” based on strong (Tier I), moderate (Tier II), or promising (Tier III) evidence.

N/A indicates positive effect size cannot be calculated because standard deviations were not reported.

Baltimore SummerREADS Program





A two-year, books-at-home program modeled on Project READS, this program provided self-selected leveled books to low-income elementary youth over the summer to encourage reading. Prior to the summer, youth participated in a book fair at school, where they selected up to 14 books at the appropriate reading level and received 12 of them. Teachers gave an end-of-year lesson to participating youth focused on strategies to maintain reading comprehension over the summer and how to reread for fluency improvement. During the summer months, teachers checked in with participating youth up to four times. Youth were also asked to fill in a log documenting whether they finished reading a book and how many times they read a book, and in which they answered two questions related to the reading strategies they were taught during the end-of-year lesson. Parents were also asked to sign the logs.

EVIDENCE OF EFFECTIVENESS

Positive, statistically significant finding on fourth grade spring reading state assessment. Evaluated but found no evidence of near-term effects on reading achievement in the fall or for youth in the third grade.

 **ACADEMIC ACHIEVEMENT: READING**

KEY

-  strong evidence
-  moderate evidence
-  promising evidence
-  program evaluated for this outcome but no evidence found

PROGRAM FEATURES

Main Components

In-school book fair, end-of-year reading comprehension and fluency improvement lesson, teacher check-ins during the summer, reading logs (for youth and their parents to complete)

Duration

N/A

Staffing

Teachers and SummerREADS coordinators

Youth-Staff Ratio for Instructional Periods

N/A

Targeted Youth

Low-income students

Attendance Rates of Youth

N/A

Support and Training for Staff

Three-hour teacher training session during April that covered the impetus and rationale for SummerREADS, program logistics, and the end-of-year lessons

Setting

Home and school

STUDY DESCRIPTION

In Year 1, schools interested in participating were randomly selected until the project number of enrolled youth reached 1,000. This resulted in a final sample of nine treatment schools in SummerREADS and four control schools. In Year 2, treatment schools in Year 1 were invited to participate again and all nine schools agreed to continue. A second group of schools that did not participate in Year 1 were identified, 22 responded with interest in participating, and half of these schools were randomly assigned to the SummerREADS treatment group and half to the control group. Youth were in the second and third grade prior to the intervention. The control group youth did not receive the program. The evaluation report also examined teacher and coordinator opinions on the process and program.

STUDY YOUTH AND LOCATION

Locale

Urban

Number of Youth and Sites

4,881 youth in 35 schools (2,649 youth in treatment schools and 2,232 in control schools)

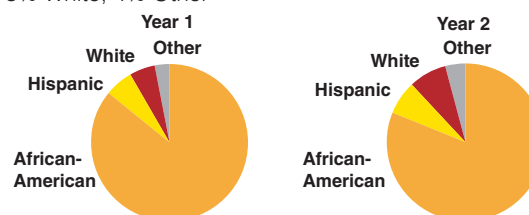
Rising Grade Level

Grades 3–4

Race and Ethnicity

Year 1: 85% African-American, 6% Hispanic, 5% White, 3% Other

Year 2: 82% African-American, 7% Hispanic, 8% White, 4% Other



Household Income Level

Year 1: 95% eligible for free or reduced-price lunch

Year 2: 94% eligible for free or reduced-price lunch

Special Populations Served

Year 1: 7% English language learners

Year 2: 9% English language learners

Statistically Significant and Positive Effects

Domain	Measure	Effect Size	Timing of Measurement	Impact	ESSA Tier
Reading achievement	Maryland School Assessment (MSA), reading score	N/A	Spring following summer program	Rising fourth grade treatment youth had higher state reading assessment scores than control youth.	III

SOURCE: Marc L. Stein, "Supporting the Summer Reading of Urban Youth: An Evaluation of the Baltimore SummerREADS Program," *Education and Urban Society*, Vol. 49, No. 1, 2017, pp. 29–52.

NOTES: Per ESSA, evidence-based interventions demonstrate "a statistically significant effect on improving student outcomes or other relevant outcomes" based on strong (Tier I), moderate (Tier II), or promising (Tier III) evidence.

N/A indicates positive effect size cannot be calculated because standard deviations were not reported.

Project READS

A voluntary summer reading program that provided youth with ten books to read at home over the summer. Books were matched to reading level and interest using a computer algorithm based on prior reading test scores and a student survey on the types of books they would like to read. In one iteration of the program, youth also received two lesson books that were not selected through the algorithm. Teachers implemented reading comprehension lessons prior to the end of the school year and provided support through check-ins over the summer. Parent scaffolding was also included in the program.

EVIDENCE OF EFFECTIVENESS

Positive, statistically significant finding on reading in two studies, though other iterations of the intervention have found null results on reading achievement.

✓ ACADEMIC ACHIEVEMENT: READING

KEY

- ✓ strong evidence
- ✓ moderate evidence
- ✓ promising evidence
- program evaluated for this outcome but no evidence found

PROGRAM FEATURES

Main Components

Book-matching, in-school reading comprehension (and fluency in Study 2) lessons, comprehension questions for each summer book, oral reading directions for parents (Study 2), and general guidance for parents on how to be involved in home-reading activities

Duration

Six reading comprehension lessons leading up to the end of the school year in Study 1; lessons on reading comprehension and fluency occurred during the last week of school in Study 2; voluntary at-home reading over the summer for both

Staffing

Classroom teachers delivered lessons directly to youth in school and at family nights. Parents were encouraged to help youth read over the summer.

Youth-Staff Ratio for Instructional Periods

N/A

Targeted Youth

N/A

Attendance Rates of Youth

N/A

Support and Training for Staff

Two-hour training provided to teachers, reviewing the purpose and procedures for the reading comprehension (Studies 1 and 2) and fluency (Study 2) lessons

Setting

Home and school

STUDY DESCRIPTION

Study 1: Teachers and youth in 59 elementary schools in seven North Carolina public school districts were randomly assigned to either math lessons or READS. Youth were in second and third grade prior to the intervention summer. Control group youth received math lessons and no summer books.

Study 2: Teachers and youth in two public K–6 elementary schools in a large suburban district located in the mid-Atlantic region were randomly assigned to one of four conditions: (1) control, (2) books only, (3) books with oral reading scaffolding, and (4) books with oral reading and comprehension scaffolding. Youth were in third, fourth, or fifth grade prior to the intervention summer. The control group youth received books in the fall after the posttests had been administered.

STUDY YOUTH AND LOCATION

Locale

Urban, suburban, and rural

Number of Youth and Sites

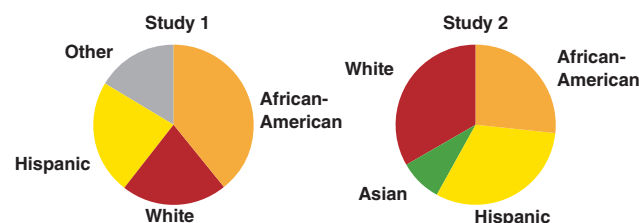
Study 1: 6,383 youth in 463 classrooms in 59 elementary schools
 Study 2: 400 youth with 24 teachers

Rising Grade Level

Study 1: Grades 3–4
 Study 2: Grades 4–6

Race and Ethnicity

Study 1: 39% African-American, 21% Hispanic, 23% White, 16% Other
 Study 2: 25% African-American, 29% Hispanic, 8% Asian, 31% White



Household Income Level

Study 1: 77% eligible for free or reduced-price lunch
 Study 2: 38% eligible for free or reduced-price lunch

Special Populations Served

Study 1: 16% English language learners
 Study 2: 29% English language learners

Statistically Significant and Positive Effects

Domain	Measure	Effect Size	Timing of Measurement	Impact	ESSA Tier
Reading achievement	North Carolina End of Grade State Reading Assessment	0.04	Spring following summer program	Treatment youth had higher state reading assessment score than control youth. The effect was highest for youth in high-poverty schools.	I
	Iowa Test of Basic Skills (ITBS) silent reading ability	0.14	Fall after the summer program	Treatment youth who received books with oral reading scaffolding or books with oral reading and comprehension scaffolding had higher silent reading ability than control group youth.	III
		0.12		Treatment youth who received books with oral reading scaffolding or books with oral reading and comprehension scaffolding had higher silent reading ability than control group youth who only received books at home.	III

SOURCES: James S. Kim and Thomas G. White, "Scaffolding Voluntary Summer Reading for Children in Grades 3 to 5: An Experimental Study," *Scientific Studies of Reading*, Vol. 12, No. 1, 2008, pp. 1–23; James S. Kim, Jonathan Guryan, Thomas G. White, David M. Quinn, Lauren Capotosto, and Helen Chen Kingston, "Delayed Effects of a Low-Cost and Large-Scale Summer Reading Intervention on Elementary School Children's Reading Comprehension," *Journal of Research on Educational Effectiveness*, Vol. 9, Supp. 1, 2016, pp. 1–22.

NOTE: Per ESSA, evidence-based interventions demonstrate "a statistically significant effect on improving student outcomes or other relevant outcomes" based on strong (Tier I), moderate (Tier II), or promising (Tier III) evidence.

Boston Red Sox Summer Math Program





An at-home, nine-week, middle school summer math program thematically linked to the Boston Red Sox baseball team and covering key mathematical concepts from the prior school year. Youth were asked, for example, to determine the at bats per home run ratio for a given player. Youth and their parents or guardians were provided with activities to do at home and a link to a website with video lessons, example problems, and enrichment activities. Youth received answer booklets at the beginning of the summer and a weekly email was sent home with additional answers.

EVIDENCE OF EFFECTIVENESS

Positive, statistically significant finding on math.

 ACADEMIC ACHIEVEMENT: MATH

KEY

-  strong evidence
-  moderate evidence
-  promising evidence
-  program evaluated for this outcome but no evidence found

PROGRAM FEATURES

Main Components

Math activities designed around Rhode Island Grade Level Expectation (GLE) teaching standards

Duration

9 weeks

Staffing

Parents

Youth-Staff Ratio for Instructional Periods

N/A

Targeted Youth

N/A

Attendance Rates of Youth

On average, youth completed 80% of the program.

Support and Training for Staff

N/A

Setting

Home

STUDY DESCRIPTION

Treatment youth were convenience samples of the summer math program and non-math program counterparts in 2011 and 2012 from a high-performing middle school. Treatment youth were matched with a comparison counterpart who had the same pretest score level on the Northwest Evaluation Association (NWEA) Measures of Academic Program (MAP). Youth were in grades 6–7 prior to the intervention.

STUDY YOUTH AND LOCATION

Locale

N/A

Number of Youth and Sites

825 youth (149 treatment and 676 comparison) from a single middle school

Rising Grade Level

Grades 7–8

Race and Ethnicity

Unknown, but 89% of district's student population was white

Household Income Level

N/A

Special Populations Served

N/A

Statistically Significant and Positive Effects

Domain	Measure	Effect Size	Timing of Measurement	Impact	ESSA Tier
Math achievement	NWEA MAP	0.35	Fall following summer program	Male treatment youth going into seventh grade had higher NWEA scores than comparison youth.	III
		0.30		Treatment youth going into eighth grade had higher NWEA scores than comparison youth.	III

SOURCE: Brian W. Nelson, *A Summative Evaluation of a Middle School Summer Math Program*, dissertation, Walden University, 2014, Ann Arbor, Mich.: University Microfilms International, 3614119, 2014.

NOTE: Per ESSA, evidence-based interventions demonstrate “a statistically significant effect on improving student outcomes or other relevant outcomes” based on strong (Tier I), moderate (Tier II), or promising (Tier III) evidence.

Summer Science Exploration Program

A two-week, inquiry-based science camp designed to stimulate greater interest in science and scientific careers among urban middle school youth offered at Hampshire College in Amherst, Mass. Instruction was provided by middle school teachers and Hampshire College faculty and students.

EVIDENCE OF EFFECTIVENESS

Positive, statistically significant finding on student interest in science careers.

✓ SCHOOL ENGAGEMENT

KEY

- ✓ strong evidence
- ✓ moderate evidence
- ✓ promising evidence
- program evaluated for this outcome but no evidence found

PROGRAM FEATURES

Main Components

Inquiry-based science camp

Duration

2 weeks

Staffing

Middle school teachers and Hampshire College faculty

Youth-Staff Ratio for Instructional Periods

15:1

Targeted Youth

N/A

Attendance Rates of Youth

N/A

Support and Training for Staff

N/A

Setting

University

STUDY DESCRIPTION

Over a three-year period (1992–1994), the two-week summer program was offered to 158 middle school youth. Application and screening procedures were used to ensure a balance in ability, gender, and ethnicity; 79 treatment youth were followed longitudinally. The comparison group of 35 youth had applied to the program but were randomly not selected. Of these 35, eight were followed longitudinally. Youth were in grades 7–8 prior to the intervention. Comparison group youth did not participate in the program.

STUDY YOUTH AND LOCATION

Locale

Urban

Number of Youth and Sites

158 treatment youth and 35 comparison youth in three urban school districts

Rising Grade Level

Grades 8–9

Race and Ethnicity

N/A

Household Income Level

N/A

Special Populations Served

N/A

Statistically Significant and Positive Effects

Domain	Measure	Effect Size	Timing of Measurement	Impact	ESSA Tier
School engagement	Youth interest in science careers	N/A	Fall 1996, 2–4 years after the program	Treatment youth had a more positive attitude toward science careers than comparison youth.	III

SOURCE: Helen L. Gibson and Christopher Chase, "Longitudinal Impact of an Inquiry-Based Science Program on Middle School Students' Attitudes Toward Science," *Science Education*, Vol. 86, No. 5, 2002, pp. 693–705.

NOTES: Per ESSA, evidence-based interventions demonstrate "a statistically significant effect on improving student outcomes or other relevant outcomes" based on strong (Tier I), moderate (Tier II), or promising (Tier III) evidence.

N/A indicates positive effect size cannot be calculated because standard deviations were not reported.

Newton Summer Academy

A ten-day, residential, university-based, pre-college science and engineering summer program for gifted, adolescent girls designed to increase their experience with and interest in science, math, computer science, and engineering professions.

EVIDENCE OF EFFECTIVENESS

Positive, statistically significant finding on attitudes toward school science. Evaluated but found no evidence of effect on science self-efficacy or beliefs about women in science.

- SCHOOL ENGAGEMENT
- SOCIAL AND EMOTIONAL LEARNING

KEY	
<input checked="" type="checkbox"/>	strong evidence
<input checked="" type="checkbox"/>	moderate evidence
<input checked="" type="checkbox"/>	promising evidence
<input type="checkbox"/>	program evaluated for this outcome but no evidence found

PROGRAM FEATURES

- Main Components**
Program included a science project activity, field trips, dinners with female scientists and engineers, career interest inventory, and social activities.
- Duration**
10 days
- Staffing**
Counselors and Newton Summer Science Academy staff
- Youth-Staff Ratio for Instructional Periods**
N/A
- Targeted Youth**
Gifted, adolescent girls
- Attendance Rates of Youth**
N/A
- Support and Training for Staff**
N/A
- Setting**
University

STUDY DESCRIPTION

This study used a quasi-experimental design to estimate the impact of attending a voluntary residential program in Columbia, Mo., in 1999. Youth were in ninth, tenth, or 11th grade prior to the intervention. Youth in the comparison group were recommended for the Academy by their science teachers and received program materials but did not apply. The outcomes analyses included correlational modeling. The analysis also examined qualitative data related to experiences with the program for the treatment group and various beliefs about science, sexism, and self-efficacy for both groups.

STUDY YOUTH AND LOCATION

Locale

Urban

Number of Youth and Sites

64 adolescent girls in one community: 27 assigned to the treatment group and 37 assigned to the comparison group

Rising Grade Level

Grades 10–12

Race and Ethnicity

N/A

Household Income Level

N/A

Special Populations Served

100% gifted, adolescent girls

Statistically Significant and Positive Effects

Domain	Measure	Effect Size	Timing of Measurement	Impact	ESSA Tier
School engagement	Attitudes Toward School Science Assessment (ATSSA)	N/A	Fall following summer program	Treatment youth had more positive attitudes toward science than comparison youth.	III

SOURCE: Carrie A. Ellis-Kalton, *Science- and Engineering-Related Career Decision-Making, Bright Adolescent Girls, and the Impact of an Intervention Program*, dissertation, University of Missouri-Columbia, 2001, Ann Arbor, Mich.: University Microfilms International, 3036823, 2001.

NOTES: Per ESSA, evidence-based interventions demonstrate “a statistically significant effect on improving student outcomes or other relevant outcomes” based on strong (Tier I), moderate (Tier II), or promising (Tier III) evidence.

N/A indicates positive effect size cannot be calculated because standard deviations were not reported.

NYC Summer Youth Employment Program

New York City Department of Youth and Community Development's six-week summer employment program was offered to youth ages 14–24 and intended to provide low-income youth with work experience and income. Youth applied to community-based organizations, which served as intake sites and supervised job placements. Selected youth worked summer, entry-level jobs in the private, public, and nonprofit sectors and made New York State minimum wage. Summer camp and daycare placements were most common.

EVIDENCE OF EFFECTIVENESS

Positive, statistically significant findings on school attendance (study 1) and participation in and performance on Regents exams (study 2). Study 1 tested but found no significant effect on passing the math or English Regents exams.

- ✓ ACADEMIC AND CAREER ATTAINMENT
- ✓ SCHOOL ENGAGEMENT

KEY

- ✓ strong evidence
- ✓ moderate evidence
- ✓ promising evidence
- program evaluated for this outcome but no evidence found

PROGRAM FEATURES

Main Components

Summer youth employment

Duration

6–7 weeks, up to 25 hours per week

Staffing

Community-based organizations helped youth apply for the Summer Youth Employment Program, then participating youth interacted with staff at their job placement sites.

Youth-Staff Ratio for Instructional Periods

N/A

Targeted Youth

Low-income youth

Attendance Rates of Youth

N/A

Support and Training for Staff

N/A

Setting

Workplace

STUDY DESCRIPTION

This program randomly assigned youth in New York City to treatment through a lottery system, enabling causal estimates of the impact of a summer job program on educational outcomes. Participant information was matched to school records for those participating in summer 2007 (Study 1) as well as a combination of youth participating in summers 2005 through 2009 (Study 2). Youth were in grades 8–11 prior to the intervention. The control group youth applied to the program, but were randomly not selected.

STUDY YOUTH AND LOCATION

Locale

Urban

Number of Youth and Sites

36,630 youth (Study 1) and 195,289 youth (Study 2)

Rising Grade Level

Grades 9–12

Race and Ethnicity

85% African-American or Hispanic

Household Income Level

90% eligible for free or reduced-price lunch

Special Populations Served

N/A

Statistically Significant and Positive Effects

Domain	Measure	Effect Size	Timing of Measurement	Impact	ESSA Tier
School engagement (from Study 1)	Attendance	N/A (1.3%)	School year following summer program	Treatment youth had greater school attendance in the school year following the summer job than control youth.	I
Academic and career attainment (from Study 2)	Any Regents exam participation	N/A (0.8%)	School year following summer program	Relative to control group youth, treatment youth were more likely to attempt a core Regents exam.	I
	Core Regents exam participation	0.02		attempt more core Regents exams.	I
	Regents exam score at least 65	N/A (1%)		pass a core Regents exam with a score that qualifies for a high school diploma.	I
	Regents exam score at least 65	0.02		pass more core Regents exams with a 65 score or above, qualifying for an Advanced Regents diploma.	I
	Regents exam score at least 55	0.03		pass more core Regents exams with a 55 score or above, qualifying for a local diploma.	I

SOURCES: (Study 1) Jacob Leos-Urbel, Amy Ellen Schwartz, Meryle Weinstein, and Beth C. Weitzman, *More Than a Paycheck? The Impact of Summer Youth Employment on Students' Educational Engagement and Success*, New York: New York University, Institute for Education and Social Policy, Brief No. 02-12, June 2012.

(Study 2) Amy Ellen Schwartz, Jacob Leos-Urbel, Megan Silander, and Matt Wiswall, *Making Summer Matter: The Impact of Youth Employment on Academic Performance*, working paper 03-14, New York: New York University, Institute for Education and Social Policy, November 2014.

NOTE: Per ESSA, evidence-based interventions demonstrate “a statistically significant effect on improving student outcomes or other relevant outcomes” based on strong (Tier I), moderate (Tier II), or promising (Tier III) evidence.

One Summer Plus

The City of Chicago’s Department of Family and Support Services’ eight-week summer jobs program was for youth at risk for violence involvement. An additional social and emotional learning (SEL) programming component, focused on the development of decision-making skills and self-regulation, was offered to some youth participating in the summer employment program.

EVIDENCE OF EFFECTIVENESS

Positive, statistically significant finding on reduction of violent crime arrests. Evaluated but found no evidence of effect on school enrollment, property crime arrests, or drug crime arrests.

- AVOIDANCE OF RISK-TAKING BEHAVIORS
- SCHOOL ENGAGEMENT

KEY	
<input checked="" type="checkbox"/>	strong evidence
<input checked="" type="checkbox"/>	moderate evidence
<input checked="" type="checkbox"/>	promising evidence
<input type="checkbox"/>	program evaluated for this outcome but no evidence found

PROGRAM FEATURES

Main Components

Summer youth employment (\$8.25 per hour) and SEL programming

Duration

8 weeks: work 5 hours per day, 5 days per week for jobs-only component; work 3 hours and 2 hours of SEL programming per day, 5 days per week for jobs plus SEL

Staffing

Job mentor worked with youth

Youth-Staff Ratio for Instructional Periods

N/A

Targeted Youth

Youth at risk of violence involvement

Attendance Rates of Youth

N/A

Support and Training for Staff

N/A

Setting

Workplace

STUDY DESCRIPTION

Youth in Chicago were randomly assigned by school-gender block to the treatment group via a lottery in May for the summer 2012 program. Youth were in grades 8–11 prior to the intervention. The control group youth were placed on a waiting list. The outcomes analyses included experimental modeling.

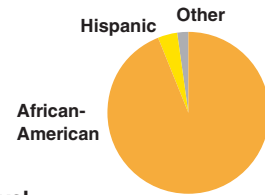
STUDY YOUTH AND LOCATION

Locale
Urban

Number of Youth and Sites
1,634 youth in three Youth Career Development Centers: 350 assigned to the jobs-only treatment group, 350 to the jobs-plus-SEL treatment group, and the remaining 934 to the control group

Rising Grade Level
Grades 9–12

Race and Ethnicity
94% African-American
4% Hispanic
2% Other



Household Income Level
92% eligible for free or reduced-price lunch

Special Populations Served
N/A

Statistically Significant and Positive Effects

Domain	Measure	Effect Size	Timing of Measurement	Impact	ESSA Tier
Avoidance of risky behavior	Violent crime arrests	-0.03	7 months after the end of the program	Treatment youth in the jobs-plus-SEL group had fewer criminal arrests than control youth.	III

SOURCE: Sara B. Heller, *Experimental Evidence on Improving the Human Capital of Disadvantaged Youth*, dissertation, University of Chicago, 2013, Ann Arbor, Mich.: University Microfilms International, 3568385, 2013.

NOTE: Per ESSA, evidence-based interventions demonstrate “a statistically significant effect on improving student outcomes or other relevant outcomes” based on strong (Tier I), moderate (Tier II), or promising (Tier III) evidence.

Therapeutic Playgroups Focusing on Social Competence and Self-Regulation Skills

A school-based, seven-week program designed to improve school readiness among foster youth. Each playgroup session focused on a single social skill, which was taught using instructional techniques that included preteaching, modeling, opportunities to practice skills, and immediate positive reinforcement. Additionally, youth learned techniques for self-regulation, which were embedded within the routines and activities of the playgroups.

EVIDENCE OF EFFECTIVENESS

Positive, statistically significant finding on emotional lability and foster parents' ratings of social competence. Evaluated but found no evidence of effect on other social and emotional measures, including internalizing, externalizing, social problems, and emotional regulation.

✓ SOCIAL AND EMOTIONAL LEARNING

KEY

- ✓ strong evidence
- ✓ moderate evidence
- ✓ promising evidence
- program evaluated for this outcome but no evidence found

PROGRAM FEATURES

Main Components

Playgroup sessions

Duration

7 weeks: 2-hour sessions, twice weekly

Staffing

Behavioral specialists who had experience working with foster youth

Youth-Staff Ratio for Instructional Periods

3:1

Targeted Youth

Youth in foster care

Attendance Rates of Youth

The median percentage of playgroups attended was 85%, with 73% of youth attending at least 80% of the playgroup sessions.

Support and Training for Staff

Teachers were trained prior to the playgroups and received ongoing support and training during the intervention period. During trainings that took place before the start of the playgroups, teachers reviewed the entire curriculum, and each teacher led two practice playgroup sessions. Teachers also received ongoing training and weekly supervision from a clinical supervisor during the intervention period.

Setting

School

STUDY DESCRIPTION

This study randomly assigned foster youth in Lane County, Oreg., entering kindergarten through second grade in fall 2002 to treatment or control groups. Control group youth received foster care services as usual, which sometimes included early childhood special education services, but did not attend the therapeutic playgroups.

STUDY YOUTH AND LOCATION

Locale
N/A

Number of Youth and Sites
24 youth (11 treatment, 13 control)

Rising Grade Level
Grades K–2

Race and Ethnicity
91% White

Household Income Level
N/A

Special Populations Served
100% youth in foster care

Statistically Significant and Positive Effects

Domain	Measure	Effect Size	Timing of Measurement	Impact	ESSA Tier
Social and emotional learning	Emotional lability (assessor rated)	1.15	2 weeks after summer program	Treatment youth showed decreased emotional lability relative to control youth.	III
	Social competence (foster parent rating)	1.55	2 weeks after summer program	Foster parents in the treatment group rated their child as having higher social competence than foster parents in the control group.	

SOURCE: Katherine C. Pears, Philip A. Fisher, and Kimberly D. Bronz, "An Intervention to Promote Social Emotional School Readiness in Foster Children: Preliminary Outcomes from a Pilot Study," *School Psychology Review*, Vol. 36, No. 4, 2007, pp. 665–673.

NOTE: Per ESSA, evidence-based interventions demonstrate "a statistically significant effect on improving student outcomes or other relevant outcomes" based on strong (Tier I), moderate (Tier II), or promising (Tier III) evidence.





Early Risers

The Early Risers “Skills for Success” six-week-long summer program aimed to improve the social behaviors of early elementary youth with social difficulties by providing opportunities for activities and engagement with youth without social difficulties. Each day, youth with social difficulties participated in three hour-long enrichment centers: an academic center that focused on reading enrichment and literature appreciation, a friendship center that addressed social skills education and training, and a creative arts center that provided opportunities for personal expression in various art forms. Buddy activities, which paired youth with and without social difficulties, were incorporated into each hour of instruction.

EVIDENCE OF EFFECTIVENESS

Positive, statistically significant finding on social skills reported by teachers. Evaluated but found no evidence of effect on parent-reported social skills.

 SOCIAL AND EMOTIONAL LEARNING

KEY	
	strong evidence
	moderate evidence
	promising evidence
	program evaluated for this outcome but no evidence found

PROGRAM FEATURES

Main Components

Social skills instruction and activities with well-adjusted youth

Duration

6 weeks: 72 hours total

Staffing

Early Risers Family Advocates and elementary school teachers

Youth-Staff Ratio for Instructional Periods

N/A

Targeted Youth

Youth with social difficulties

Attendance Rates of Youth

N/A

Support and Training for Staff

All summer program staff were trained in how to issue effective commands, give warnings, and administer time-outs. Program staff were also trained to use specific praise that named the youth and to describe in detail the positive behavior of the youth.

Setting

N/A

STUDY DESCRIPTION

This study randomly assigned youth by school to receive the program. Teachers assessed whether eligible treatment youth had aggressive, disruptive, and/or withdrawn behavior, or whether they were well-adjusted socially, behaviorally, and emotionally. Youth in the well-adjusted group served as buddies for youth in the “with difficulties” treatment group. Youth were in kindergarten or first grade prior to the intervention.

STUDY YOUTH AND LOCATION

Locale
N/A

Number of Youth and Sites
80 youth with difficulties from five schools (54 treatment youth, 26 control youth), and 110 well-adjusted youth (60 treatment youth, or “buddies,” 50 control youth)

Rising Grade Level
Grades 1–2

Race and Ethnicity
Locale was predominantly White.
Youth with difficulties: 23% Nonwhite
Well-adjusted youth: 26% Nonwhite

Household Income Level
N/A

Special Populations Served
N/A

Statistically Significant and Positive Effects

Domain	Measure	Effect Size	Timing of Measurement	Impact	ESSA Tier
Social and emotional learning	Social skills (teacher reported)	0.35	Fall following summer program	Treatment youth with social difficulties had higher teacher-reported social skills than control group youth.	III

SOURCE: Joel M. Hektner, Alison L. Brennan, and Gerald J. August, “Incorporating Well-Adjusted Peers in a Conduct Problems Prevention Program: Evaluation of Acceptability, Fidelity, and Safety of Implementation,” *School Mental Health*, Vol. 9, No. 1, 2017, pp. 66–77.

NOTE: Per ESSA, evidence-based interventions demonstrate “a statistically significant effect on improving student outcomes or other relevant outcomes” based on strong (Tier I), moderate (Tier II), or promising (Tier III) evidence.

Child Anxiety Multi-Day Program

A week-long day camp program held in school- and community-based locations that provided cognitive behavioral therapy, repeated exposure to separation, and opportunities for social interaction for girls with separation anxiety disorder. Each daily session included cognitive behavioral skill lessons and separation challenges, in which youth could apply newly acquired skills, with progressively challenging activities that took youth away from home, into an urban environment, and culminated with a therapeutic sleepover away from home.

EVIDENCE OF EFFECTIVENESS

Positive, statistically significant findings on separation anxiety disorder and global functioning and impairment. Evaluated but found no evidence of effect on child or parent ratings of child's anxiety.

✓ MENTAL HEALTH

KEY

- ✓ strong evidence
- ✓ moderate evidence
- ✓ promising evidence
- program evaluated for this outcome but no evidence found

PROGRAM FEATURES

Main Components

Day camp with daily skill sessions, separation challenges, and sleepover

Duration

1 week: 5 hours per day, Monday through Thursday, with 3 hours on Friday; 6 p.m. to 8 a.m. sleepover from Saturday to Sunday, with an hour-long final session on Sunday

Staffing

Clinical psychologists, doctoral candidates, and master's-level research assistants

Youth-Staff Ratio for Instructional Periods

N/A

Targeted Youth

Girls with separation anxiety disorder

Attendance Rates of Youth

N/A

Support and Training for Staff

Therapists participated in a two-hour didactic training session prior to treatment onset and 30 minutes of protocol review and supervision after the completion of each daily session.

Setting

Most sites were in district-owned school buildings; some were in community locations.

STUDY DESCRIPTION

A randomized controlled trial to evaluate the feasibility and preliminary efficacy of an intensive, cognitive-behavioral intervention for girls ages 7 to 12 with separation anxiety disorder within the context of a week-long, camp-like setting. The control group was waitlisted and received delayed treatment following the evaluation.

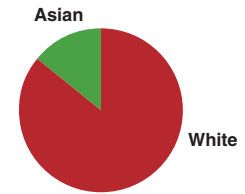
STUDY YOUTH AND LOCATION

Locale
N/A

Number of Youth and Sites
29 girls (15 treatment; 14 control)

Rising Grade Level
Ages 7–12 (grades not reported)

Race and Ethnicity
14% Asian
86% White



Household Income Level
\$100,000 average family income

Special Populations Served
100% girls with separation anxiety disorder

Statistically Significant and Positive Effects

Domain	Measure	Effect Size	Timing of Measurement	Impact	ESSA Tier
Mental health	Separation anxiety disorder, clinical severity rating	1.67	Posttreatment	Treatment youth had lower levels of separation anxiety than control youth.	III
	CGAS (Clinician-rated measure of global impairment)	1.00	Posttreatment	Treatment youth had higher levels of global functioning than control youth.	III

SOURCE: Lauren C. Santucci and Jill Ehrenreich-May, “A Randomized Controlled Trial of the Child Anxiety Multi-Day Program (CAMP) for Separation Anxiety Disorder,” *Child Psychiatry and Human Development*, Vol. 44, No. 3, 2013, pp. 439–451.

NOTES: Per ESSA, evidence-based interventions demonstrate “a statistically significant effect on improving student outcomes or other relevant outcomes” based on strong (Tier I), moderate (Tier II), or promising (Tier III) evidence.

N/A indicates positive effect size cannot be calculated because standard deviations were not reported.





Benefits-Based Programming Resilience Day Camp

An eight-week, full-day camp focused on building seven resiliency skills among low-income youth. Each week’s activities focused on a specific resiliency skill through the following daily program areas: Journal Keeping—Think in Ink, Drama Program—Expression of Creativity, Initiative Games and Problem-Solving Activities, and Education and Artistic Activities—Discovery Station.

EVIDENCE OF EFFECTIVENESS

Positive, statistically significant findings on humor, resilience, independence, and insight. Evaluated but found no evidence of effect on creativity, initiative, or relationships.

 **SOCIAL AND EMOTIONAL LEARNING**

KEY	
	strong evidence
	moderate evidence
	promising evidence
	program evaluated for this outcome but no evidence found

PROGRAM FEATURES

Main Components

Full-day camp with week-long activities focused on a specific resiliency skill

Duration

8 weeks: 8:30 a.m. to 5:00 p.m., Monday through Friday

Staffing

Camp staff included a certified school-district teacher, two full-time staff members, two junior leaders, four volunteers, and three part-time staff members.

Youth-Staff Ratio for Instructional Periods

20:12

Targeted Youth

Low-income youth

Attendance Rates of Youth

All youth participated in at least 80% of the sessions.

Support and Training for Staff

Camp staff attended an eight-hour training session on the use of the Benefits-Based Programming (BBP) model. During training, staff members learned how to plan, establish, and implement a recreation camp activity using the BBP philosophy and strategy and processing skills, and they learned how to interact with youth by sharing and encouraging positive experiences throughout the camp.

Setting

Day camp

STUDY DESCRIPTION

Two of six city parks and recreation departments' summer day camps in a southeastern U.S. city with a population of 56,000 were randomly selected to be included in the study. One camp was assigned to be treatment (outcome-based) and the other to be a traditional (control) day camp. Both camps served youth ages 8–12 prior to the summer, but only youth ages 9–12 were included in the analysis.

STUDY YOUTH AND LOCATION

Locale
Urban

Number of Youth and Sites
46 youth in two camps (26 treatment, 20 control)

Rising Grade Level
Ages 8–12 (grades not reported)

Race and Ethnicity
100% African-American

Household Income Level
100% low-income

Special Populations Served
N/A

Statistically Significant and Positive Effects

Domain	Measure	Effect Size	Timing of Measurement	Impact	ESSA Tier
Social and emotional learning	Resiliency Attitudes and Skills Profile (RASP): humor scale	N/A	End of summer camp	Treatment youth showed decreased emotional lability relative to control youth.	III
	RASP: independence scale	N/A	End of summer camp	Treatment youth had higher independence scores than control youth.	III
	RASP: insight scale	N/A	End of summer camp	Treatment youth had higher insight scores than control youth.	III
	RASP: values orientation	N/A	End of summer camp	Treatment youth had higher values orientation scores than control youth.	III

SOURCE: Lawrence R. Allen, Jan Cox, and Nelson L. Cooper, "The Impact of Summer Day Camp on the Resiliency of Disadvantaged Youths," *Journal of Physical Education, Recreation and Dance*, Vol. 77, No. 1, 2006, pp. 17–23.

NOTES: Per ESSA, evidence-based interventions demonstrate "a statistically significant effect on improving student outcomes or other relevant outcomes" based on strong (Tier I), moderate (Tier II), or promising (Tier III) evidence.

N/A indicates positive effect size cannot be calculated because standard deviations were not reported.





Social Skills Training at a Talent Development Program

High-ability youth with self-reported social difficulties participated in a set of enrichment activities aimed at developing social skills during this university-based, two-week program conducted over two summers. During lunch, youth first engaged in free conversation with peers and facilitators. Then a group facilitator guided a check-in conversation and showed video clips from the prior lunch with a targeted discussion of what went well and what could improve in observed social skills.

EVIDENCE OF EFFECTIVENESS

Positive, statistically significant finding on friendship help. Evaluated but found no evidence of effect on measures of friendship, quality companionship, conflict, security, or closeness.

 SOCIAL AND EMOTIONAL LEARNING

KEY	
	strong evidence
	moderate evidence
	promising evidence
	program evaluated for this outcome but no evidence found

PROGRAM FEATURES

Main Components

Lunch-time intervention: live and video-recorded discussions, self-advocacy training, learning style inventory, and lessons on creating effective Individualized Education Programs and other social skills

Duration

2 weeks: 4 consecutive days per week

Staffing

University staff

Youth-Staff Ratio for Instructional Periods

N/A

Targeted Youth

High-ability youth with self-reported social difficulties

Attendance Rates of Youth

N/A

Support and Training for Staff

N/A

Setting

University

STUDY DESCRIPTION

All youth enrolled in a summer talent development program at a large Midwest university were eligible for inclusion. The social skills intervention took place over two summers (2015 and 2016). All youth whose parents wanted them to participate did, and youth were put into groups for treatment based on age and gender to make the interactions more age-appropriate. Comparison group students participated in the talent development program but did not receive the social skills intervention. Youth were in grades 2–6 prior to the intervention.

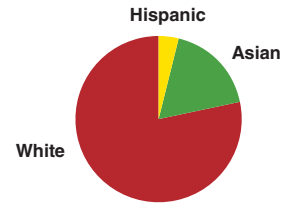
STUDY YOUTH AND LOCATION

Locale
N/A

Number of Youth and Sites
43 youth (34 treatment, 9 comparison)

Rising Grade Level
Grades 3–7

Race and Ethnicity
4% Hispanic
18% Asian or Pacific Islander
79% White



Household Income Level
N/A

Special Populations Served
100% high-ability youth with self-reported social difficulties

Statistically Significant and Positive Effects

Domain	Measure	Effect Size	Timing of Measurement	Impact	ESSA Tier
Social and emotional learning	Friendship Quality Scale (FQS): Help	0.28	End of summer	Treatment youth had a greater ability to seek friendship help than comparison youth.	III

SOURCE: Megan Foley-Nicpon, Susan G. Assouline, D. Martin Kivlighan, Staci Fosenburg, Charles Cederberg, and Michelle Nanji, "The Effects of a Social and Talent Development Intervention for High Ability Youth with Social Skill Difficulties," *High Ability Studies*, Vol. 28, No. 1, 2017, pp. 73–92.

NOTE: Per ESSA, evidence-based interventions demonstrate "a statistically significant effect on improving student outcomes or other relevant outcomes" based on strong (Tier I), moderate (Tier II), or promising (Tier III) evidence.

Self-Regulation Mentoring Program

An eight-week mentoring program intended to improve self-regulation skills and delivered within a summer youth recreation program. Weekly sessions followed a scaffolding format in which the mentor would: (1) check in and build rapport, (2) set and review goals, (3) introduce the topic for the week, (4) provide instruction, (5) model strategy use, (6) offer time for purposeful practice, (7) observe participant, (8) provide in vivo coaching during the week, (9) reinforce skill use, and (10) encourage youth's self-directed skill use.

EVIDENCE OF EFFECTIVENESS

Positive, statistically significant findings on planning and organization of materials. Evaluated but found no evidence of effect on working memory, self-direction, or self-awareness.

✓ SOCIAL AND EMOTIONAL LEARNING

KEY

- ✓ strong evidence
- ✓ moderate evidence
- ✓ promising evidence
- program evaluated for this outcome but no evidence found

PROGRAM FEATURES

Main Components

Summer recreation program, weekly mentoring sessions

Duration

8 weeks: 15-minute session each week

Staffing

Senior-level program staff served as mentors.

Youth-Staff Ratio for Instructional Periods

1:1

Targeted Youth

N/A

Attendance Rates of Youth

N/A

Support and Training for Staff

Mentors completed a six-hour training session that introduced the concept of self-regulation to mentoring within a recreation program.

Setting

Recreation program

STUDY DESCRIPTION

A quasi-experimental design that compared two matched sets of youth recreation programs in Salt Lake City, Utah, that operated under the same umbrella organization. One site had mentors and the other did not. Youth were ages 9–14 prior to the summer program.

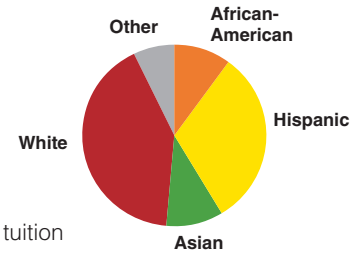
STUDY YOUTH AND LOCATION

Locale
Urban

Number of Youth and Sites
64 youth (35 treatment, 29 comparison) at two sites

Rising Grade Level
Ages 9–14, average age of 11 (grades not reported)

Race and Ethnicity
10% African-American
31% Hispanic
10% Asian
41% White
7% Other



Household Income Level
90% qualified for reduced tuition

Special Populations Served
N/A

Statistically Significant and Positive Effects

Domain	Measure	Effect Size	Timing of Measurement	Impact	ESSA Tier
Social and emotional learning	Planning and Organizing (subdomain of self-regulation)	N/A	End of summer program	Treatment youth had greater increases in capacity to set goals and plan tasks than comparison youth.	III
	Organization of Materials (subdomain of self-regulation)	N/A	End of summer program	Treatment youth had greater increases in capacity to maintain orderly work and play-spaces than comparison youth.	III

SOURCE: Cass Morgan, Jim Sibthorp, and Monica Tsethlikai, "Fostering Self-Regulation Skills in Youth: Examining the Effects of a Mentoring Curriculum in a Summer Recreation Program," *Leisure Sciences*, Vol. 38, No. 2, 2016, pp. 161–178.

NOTE: Per ESSA, evidence-based interventions demonstrate "a statistically significant effect on improving student outcomes or other relevant outcomes" based on strong (Tier I), moderate (Tier II), or promising (Tier III) evidence.

Middle School Success

A group-based program designed for caregivers and girls in foster care to reduce substance use and delinquency and conducted during the summer prior to middle school. Caregiver groups and foster youth groups met twice a week for three weeks and follow-up intervention services were administered for two hours weekly during the first year of middle school.

EVIDENCE OF EFFECTIVENESS

Positive, statistically significant findings on reported substance abuse. Evaluated but found no evidence of effect on delinquent behavior.

✓ AVOIDANCE OF RISK-TAKING BEHAVIORS

KEY	
✓	strong evidence
✓	moderate evidence
✓	promising evidence
○	program evaluated for this outcome but no evidence found

PROGRAM FEATURES

Main Components

Group-based caregiver management training for foster parents and group-based skill-building sessions for girls; follow-up intervention services provided to caregivers and girls

Duration

3 weeks: 2 group meetings per week; follow-up intervention services were administered once per week for 2 hours during the first year of middle school

Staffing

Facilitators, cofacilitators, and assistants

Youth-Staff Ratio for Instructional Periods

1:2

Targeted Youth

Girls in foster care

Attendance Rates of Youth

94% (summer session)

Support and Training for Staff

N/A

Setting

N/A

STUDY DESCRIPTION

This randomized controlled trial examined the impact of a curriculum to build prosocial skills and increase self-efficacy in girls and improve parenting in foster parents. A sample of girls in foster care were recruited during their last year of elementary school (fifth grade) and randomized into treatment and control groups. The control group (girls and caregivers) received the usual services provided by the child welfare system. The evaluation also examined indirect effects of the intervention on behaviors that lead to substance use.

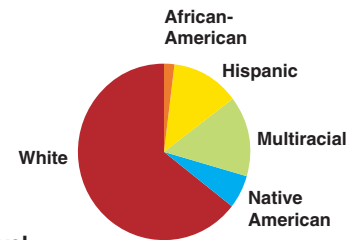
STUDY YOUTH AND LOCATION

Locale
N/A

Number of Youth and Sites
100 girls and caregivers (48 treatment, 52 control)

Rising Grade Level
Grade 6

Race and Ethnicity
2% African-American
13% Hispanic
15% Multiracial
6% Native American
65% White



Household Income Level
18% \$24,999 or less
51% \$25,000–\$59,999
31% \$60,000 or more

Special Populations Served
100% girls in foster care

Statistically Significant and Positive Effects

Domain	Measure	Effect Size	Timing of Measurement	Impact	ESSA Tier
Avoidance of risky behavior	Self-reported substance use	0.47	36 months after baseline	Treatment youth reported lower levels of substance use than control group youth.	III

SOURCE: Hyoun K. Kim and Leslie D. Leve, "Substance Use and Delinquency Among Middle School Girls in Foster Care: A Three-Year Follow-Up of a Randomized Controlled Trial," *Journal of Consulting and Clinical Psychology*, Vol. 79, No. 6, 2011, pp. 740–750.

NOTE: Per ESSA, evidence-based interventions demonstrate "a statistically significant effect on improving student outcomes or other relevant outcomes" based on strong (Tier I), moderate (Tier II), or promising (Tier III) evidence.

Socio-Dramatic Affective-Relational Intervention

The six-week Spotlight Summer Program, a socio-dramatic affective-relational intervention (SDARI), featured games-based activities intended to improve social skills among youth with Asperger syndrome and high-functioning autism diagnoses. Provided by a community human services agency, this SDARI-adapted dramatic training activities program focused on practice in areas of social skill deficit among participants.

EVIDENCE OF EFFECTIVENESS

Positive, statistically significant finding on assertion. Evaluated but found no evidence of effect on internalizing behavior, externalizing behavior, depression, social problems, or social responsiveness.

✓ MENTAL HEALTH

KEY

- ✓ strong evidence
- ✓ moderate evidence
- ✓ promising evidence
- program evaluated for this outcome but no evidence found

PROGRAM FEATURES

Main Components

Three core components: (1) a performance-based social skills curriculum employing affectively engaging improvisation games and dramatic training adapted for this population, (2) a focus on youth-youth and youth-staff relationship-building to reinforce social interactions, and (3) use of other age-appropriate motivators, such as video games and noncompetitive physical activity

Duration

6 weeks: 5 hours per day

Staffing

N/A

Youth-Staff Ratio for Instructional Periods

5:3 to 9:3

Targeted Youth

Youth with Asperger syndrome or high-functioning autism diagnoses

Attendance Rates of Youth

N/A

Support and Training for Staff

Staff received a week of training prior to the Spotlight Summer Program. Training consisted of an introduction to the specific intervention activities, an overview of the clinical population, and behavior management strategies.

Setting

Community Human Services Agency

STUDY DESCRIPTION

Treatment youth included those who had not previously received SDARI and were newly enrolled in the program, and comparison youth included those who met inclusion criteria at an affiliated clinic in the same geographic area and former SDARI participants. Youth were ages 11–17 prior to the intervention in summer 2007.

STUDY YOUTH AND LOCATION

Locale

Urban

Number of Youth and Sites

17 youth (9 treatment, 8 comparison)

Rising Grade Level

Ages 11–17 (no grades reported)

Race and Ethnicity

N/A

Household Income Level

N/A

Special Populations Served

100% youth with Asperger syndrome or high-functioning autism diagnoses

Statistically Significant and Positive Effects

Domain	Measure	Effect Size	Timing of Measurement	Impact	ESSA Tier
Mental health	Diagnostic Analysis of Nonverbal Accuracy: Adult Paralanguage (DANVA-2-AP)	N/A	End of summer program	Treatment youth had higher ability to understand adults' tone of voice than comparison youth.	III
	Social Skills Rating System (SSSR): Assertion	N/A	End of summer program	Treatment youth had higher assertion scores than comparison youth.	III

SOURCE: Matthew D. Lerner, Amori Yee Mikami, and Karen Levine, "Socio-Dramatic Affective-Relational Intervention for Adolescents with Asperger Syndrome and High Functioning Autism: Pilot Study," *Autism*, Vol. 15, No. 1, 2011, pp. 21–42.

NOTES: Per ESSA, evidence-based interventions demonstrate "a statistically significant effect on improving student outcomes or other relevant outcomes" based on strong (Tier I), moderate (Tier II), or promising (Tier III) evidence.

N/A indicates positive effect size cannot be calculated because standard deviations were not reported.

Respecting the Circle of Life: Mind Body and Spirit

An adapted, evidence-based, human immunodeficiency virus (HIV) risk-reduction intervention for Native American youth conducted during an eight-day summer basketball camp for youth ages 13–19 in one reservation-based tribal community.

EVIDENCE OF EFFECTIVENESS

Positive, statistically significant findings on condom use self-efficacy, response cost, and response efficacy. Evaluated but found no evidence of effect on vaginal sex incidence or social and emotional measures of intrinsic and extrinsic reward, vulnerability, or severity.

- AVOIDANCE OF RISK-TAKING BEHAVIORS
- SOCIAL AND EMOTIONAL LEARNING

KEY

- strong evidence
- moderate evidence
- promising evidence
- program evaluated for this outcome but no evidence found

PROGRAM FEATURES

Main Components

Eight structured lessons delivered to peer groups of eight to ten youth of the same sex and age

Duration

8 weekdays: 4 hours per day with 90 minutes dedicated to educational lessons

Staffing

Respecting the Circle of Life (RCL) facilitators

Youth-Staff Ratio for Instructional Periods

8:1 to 10:1

Targeted Youth

Reservation tribal community youth

Attendance Rates of Youth

N/A

Support and Training for Staff

RCL facilitators completed a week-long, 40-hour training in the adapted curriculum for certification to facilitate. Booster training was also provided.

Setting

Community-based summer basketball camp

STUDY DESCRIPTION

This peer group randomized controlled intervention estimated the impact of an HIV risk–reduction curriculum offered in summer 2011 and summer 2012 in one reservation-based tribal community. Youth were ages 13–19 prior to the intervention. Control youth attended eight lessons focused on topics not targeted by the intervention.

STUDY YOUTH AND LOCATION

Locale

N/A

Number of Youth and Sites

267 youth (138 treatment, 129 control)

Rising Grade Level

Ages 13–19; average age of 15 (grades not reported)

Race and Ethnicity

100% Native American

Household Income Level

N/A

Special Populations Served

100% reservation tribal community youth

Statistically Significant and Positive Effects

Domain	Measure	Effect Size	Timing of Measurement	Impact	ESSA Tier
Avoidance of risk-taking behaviors	Youth Health Risk Behavioral Inventory (YHRBI) Self-Efficacy	N/A	Postcamp	Treatment youth had higher self-efficacy than control youth.	III
	YHRBI Response Efficacy	N/A	Postcamp, 6-month follow-up, and 12-month follow-up	Treatment youth had higher response efficacy than control youth.	III
	YHRBI Response Cost	N/A	Postcamp	Treatment youth had lower response cost than control youth.	III
	Condom use self-efficacy	N/A	Postcamp, 6-month follow-up, and 12-month follow-up	Treatment youth had improved mean condom use self-efficacy scores than control youth.	III

SOURCE: Lauren Tingey, Britta Mullany, Rachel Chambers, Ranelda Hastings, Angelita Lee, Anthony Parker, Allison Barlow, and Anne Rompalo, "Respecting the Circle of Life: One Year Outcomes from a Randomized Controlled Comparison of an HIV Risk Reduction Intervention for American Indian Adolescents," *AIDS Care*, Vol. 27, No. 9, 2015, pp. 1087–1097.

NOTES: Per ESSA, evidence-based interventions demonstrate "a statistically significant effect on improving student outcomes or other relevant outcomes" based on strong (Tier I), moderate (Tier II), or promising (Tier III) evidence.

N/A indicates positive effect size cannot be calculated because standard deviations were not reported.

Just Do It

A four-week, school-based, self-advocacy training program for rising ninth graders with learning disabilities. Training included a learning style inventory to provide youth with information on how they learned best, instruction regarding Individualized Education Program (IEP) plans and practice rewriting their own plan, lessons on achieving goals, literacy strategies and communication skills, and career information.

EVIDENCE OF EFFECTIVENESS

Positive, statistically significant findings on self-esteem, attributional style, and depression. Evaluated but found no evidence of effect on grade point average.

- ACADEMIC ACHIEVEMENT
- MENTAL HEALTH
- SOCIAL AND EMOTIONAL LEARNING

KEY	
<input checked="" type="checkbox"/>	strong evidence
<input checked="" type="checkbox"/>	moderate evidence
<input checked="" type="checkbox"/>	promising evidence
<input type="radio"/>	program evaluated for this outcome but no evidence found

PROGRAM FEATURES

Main Components

Self-advocacy training, learning style inventory, and lessons on creating effective IEPs and other social skills

Duration

4 weeks: 4 hours per day

Staffing

N/A

Youth-Staff Ratio for Instructional Periods

N/A

Targeted Youth

Youth with learning disabilities

Attendance Rates of Youth

N/A

Support and Training for Staff

N/A

Setting

School

STUDY DESCRIPTION

Study youth were incoming ninth graders to Fremont Union High School District who had special learning needs. Treatment youth came from one elementary school district and comparison group youth who did not attend the summer program were from two neighboring elementary school districts.

STUDY YOUTH AND LOCATION

Locale

Suburban

Number of Youth and Sites

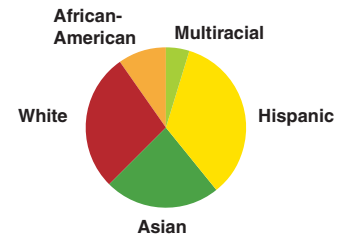
83 youth (43 treatment, 40 comparison) in three school districts

Rising Grade Level

Grade 9

Race and Ethnicity

5% African-American
36% Hispanic
24% Asian
29% White
10% Multiracial



Household Income Level

N/A

Special Populations Served

100% youth with learning disabilities

Statistically Significant and Positive Effects

Domain	Measure	Effect Size	Timing of Measurement	Impact	ESSA Tier
Mental health	Children's Depression Inventory (CDI)	0.67	End of summer program	Treatment youth exhibited lower levels of depression than comparison youth.	III
Social and emotional learning	Rosenberg Self-Esteem Scale	0.65	End of summer program	Treatment youth had higher self-esteem than comparison youth.	III
	Children's Attributional Style Questionnaire (CASQ)	1.44	End of summer program	Treatment youth exhibited more-adaptive attributional style than comparison youth.	III

SOURCE: Brittany E. Stevens, *Just Do It: The Impact of a Summer School Self-Advocacy Program on Depression, Self-Esteem, and Attributional Style in Learning Disabled Adolescents*, dissertation, Claremont Graduate University, 2005, Ann Arbor, Mich.: University Microfilms International, 3179503, 2005.

NOTE: Per ESSA, evidence-based interventions demonstrate "a statistically significant effect on improving student outcomes or other relevant outcomes" based on strong (Tier I), moderate (Tier II), or promising (Tier III) evidence.

Summer at the Center

A three-week, summer-intensive, musical theater program at a local performing arts center designed for at-risk youth and intended to increase self-confidence, presentation and commitment skills, and assimilation to school. Youth received vocal, dance, and performance instruction. Youth rehearsed six hours a day, with a half-hour break for lunch. The camp ended with a culminating performance.

EVIDENCE OF EFFECTIVENESS

Positive, statistically significant finding on grade point average. Evaluated but found no evidence of effect on school attendance.

- ACADEMIC ACHIEVEMENT
- SCHOOL ENGAGEMENT

KEY	
<input checked="" type="checkbox"/>	strong evidence
<input checked="" type="checkbox"/>	moderate evidence
<input checked="" type="checkbox"/>	promising evidence
<input type="checkbox"/>	program evaluated for this outcome but no evidence found

PROGRAM FEATURES

Main Components

Vocal, dance, and performance instruction; rehearsal and performance

Duration

3 weeks: 9 a.m. to 3 p.m., Monday through Friday

Staffing

Artistic director, vocal coach, accompanist, and musical director; a person in charge of costuming, design, and decorations; male and female choreographers; two staff assistants and two teacher aides

Youth-Staff Ratio for Instructional Periods

N/A

Targeted Youth

Youth enrolled in alternative and correctional education

Attendance Rates of Youth

N/A

Support and Training for Staff

N/A

Setting

Performing arts center

STUDY DESCRIPTION

Youth were chosen from those enrolled in the Orange County Department of Education's Alternative and Correctional Education Schools and Services (ACCESS) program that represented at-risk youth who were interested in completing their high school education. The treatment group was chosen from youth who received and returned a student questionnaire in early June 1998. Youth were ages 14–17 prior to the intervention in summer 1998.

STUDY YOUTH AND LOCATION

Locale

Urban and suburban

Number of Youth and Sites

46 youth (21 treatment, 25 comparison)

Rising Grade Level

Ages 14–17 (grades not reported)

Race and Ethnicity

N/A

Household Income Level

N/A

Special Populations Served

100% of youth enrolled in alternative and correctional education

Statistically Significant and Positive Effects

Domain	Measure	Effect Size	Timing of Measurement	Impact	ESSA Tier
Academic achievement	Grade point average (GPA)	0.57	Fall following the summer program	Treatment youth had a higher GPA than comparison youth.	III

SOURCE: Alexandria Angelique Coronado, *The Effects of a Summer Performing Arts Program on At-Risk Adolescents*, dissertation, University of Southern California, 1999, Ann Arbor, Mich.: University Microfilms International, 9955025, 2000.

NOTE: Per ESSA, evidence-based interventions demonstrate "a statistically significant effect on improving student outcomes or other relevant outcomes" based on strong (Tier I), moderate (Tier II), or promising (Tier III) evidence.





Texas Youth Leadership Forum

A week-long, university-based residential camp that focused on building leadership and self-advocacy skills in youth with disabilities. The Texas Youth Leadership Forum training curriculum addressed skills with instruction in disability history, team-building and leadership, self-advocacy, legislative advocacy, postsecondary education, employment, and volunteerism. Participating youth completed a learning style inventory to provide them with information on how they learned best, received instruction regarding Individualized Education Program (IEP) plans and practice rewriting their own plan, and lessons on achieving goals, literacy strategies and communication skills, and career information.

EVIDENCE OF EFFECTIVENESS

Positive, statistically significant finding on self-advocacy ability.

 SOCIAL AND EMOTIONAL LEARNING

KEY	
	strong evidence
	moderate evidence
	promising evidence
	program evaluated for this outcome but no evidence found

PROGRAM FEATURES

Main Components

Leadership and self-advocacy skill training, learning style inventory, and lessons on creating effective IEPs and other social skills

Duration

5 days and 4 nights with a total of 37 hours of training

Staffing

Researchers and trained volunteers

Youth-Staff Ratio for Instructional Periods

N/A

Targeted Youth

Youth with disabilities

Attendance Rates of Youth

N/A

Support and Training for Staff

Volunteers were trained prior to the intervention on the curriculum components, objectives guidelines for participating youth and group interaction, and data collection rules and guidelines.

Setting

University

STUDY DESCRIPTION

Treatment youth were selected through an application and selection process, and comparison group youth had disabilities that matched the profiles of youth in the treatment group. Youth were in tenth or 11th grade prior to the intervention. Comparison group youth did not receive the program.

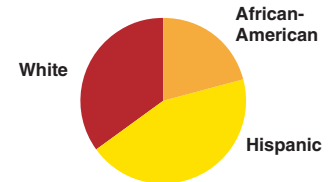
STUDY YOUTH AND LOCATION

Locale
Urban

Number of Youth and Sites
68 youth (34 treatment, 34 comparison)

Rising Grade Level
Grades 11–12

Race and Ethnicity
21% African-American
44% Hispanic
35% White



Household Income Level
N/A

Special Populations Served
100% youth with disabilities

Statistically Significant and Positive Effects

Domain	Measure	Effect Size	Timing of Measurement	Impact	ESSA Tier
Social and emotional learning	Self-advocacy	N/A	Unclear	Treatment youth reported higher levels of self-advocacy than comparison youth.	III

SOURCE: Cheryl Grenwelge and Dalun Zhang, "The Effects of the Texas Youth Leadership Forum Summer Training on the Self-Advocacy Abilities of High School Students with Disabilities," *Journal of Disability Policy Studies*, Vol. 24, No. 3, 2012, pp. 158–169.

NOTES: Per ESSA, evidence-based interventions demonstrate "a statistically significant effect on improving student outcomes or other relevant outcomes" based on strong (Tier I), moderate (Tier II), or promising (Tier III) evidence.

N/A indicates positive effect size cannot be calculated because standard deviations were not reported.

Technical Details

This appendix provides technical details regarding eligibility criteria for interventions and research designs and describes in detail how we applied ESSA evidence tiers to study findings, how the literature search and in-depth document reviews were conducted, and the information that was extracted from the studies that met all eligibility criteria.

Details on Eligibility Criteria for Interventions and Research Designs

One eligibility criterion we imposed for interventions required that at least half of the program services be offered during the summer. Based on this criterion, our review excluded studies of interventions that combined after-school and summer programming if the effect of the services provided during the summer could not be isolated from the after-school services provided during the school year. For example, we would have excluded an evaluation of a year-long program that offered services during the summer and the following school year if outcome data were collected at the end of the spring semester and reflected the effect of the services offered during the summer and the school year. We also excluded evaluations of programs in which the summer activity represented less than half of the overall services provided to students. In these cases, the estimated effects are more likely to reflect the other program components than the summer components.

As described in the main body of the report, our review used two primary eligibility criteria related to research designs. The first one stated that analyses must compare the outcomes of two distinct groups of participants. This criterion ruled out a specific research design (“pre-post” without a comparison group) that compared the outcomes of the same students before and after program participation, as this design cannot produce results that meet Tiers I–III. All other designs that used a comparison group, such as RCTs; regression discontinuity designs (RDDs); or QEDs that used propensity score matching, difference-in-differences, multivariate regression or analysis of covariance (ANCOVA) techniques to control for selection bias, were eligible based on this criterion.

The second eligibility criterion related to research designs was that the comparison condition should be no summer program participation, business as usual (i.e., the study did not manipulate what the comparison students did during the summer), or receipt of some summer services that were not expected to influence the outcomes targeted by the summer intervention. The purpose of this eligibility criterion was to ensure that the evaluation results could be associated with participation in a specific summer intervention or a component of a summer intervention that targeted a specific outcome. As a result of this criterion, we excluded studies

contrasting two summer interventions or two versions of the same intervention delivered in different manners that targeted the same outcome measures. For example, we excluded a study in which treatment students participated in a summer program that aimed to boost reading comprehension for disadvantaged students because comparison students were not offered this summer program, although their parents were offered four training sessions over the summer designed to teach them strategies for reading with their children. Similarly, we excluded a study that compared the outcomes of students who received a summer algebra credit recovery intervention online with those who received the in-class version of the same intervention. In these two cases, the differences between the outcomes of treatment versus comparison students cannot be attributed to the treatment condition because students in both conditions were systematically offered summer services that aimed to improve those outcomes. On the other hand, we included studies in which the comparison students were offered some summer services if they lacked the program elements offered to treatment students to improve specific outcomes. For example, in one such study, both treatment and comparison students participated in a traditional summer camp, but only the treatment students received lessons that targeted reducing risky sexual behaviors, and the study examined outcomes that measured these behaviors.

Application of ESSA Evidence Tiers to Study Findings

ESSA requires that “activities, strategies, and interventions” funded under the legislation be supported by evidence of their effectiveness. The law specifies four tiers of evidence: *strong* (Tier I), *moderate* (Tier II), *promising* (Tier III), and a fourth category (Tier IV) that has been titled *demonstrates a rationale* in guidance from the USDOE. The law provides minimal description of the evidence required to meet each tier (see Box A.1 for specific language from the law), though some requirements—such as statistically significant improvements—are clear and unequivocal. The following list elaborates on the requirements of the law for each tier:

- **Tier I evidence** must come from at least one “well-designed and well-implemented” experimental study that shows a statistically significant improvement in one or more outcomes. The most commonly used experimental design is an RCT in which participants are randomly assigned to experience a program or to the control group. Barring issues with postrandomization manipulation of groups and attrition, RCTs can support

Box A.1

Definition of “Evidence-Based” in ESSA

In Title VIII, Sec. 8101(21)(A), ESSA defines *evidence-based* as an activity, strategy, or intervention that

- (i) demonstrates a statistically significant effect on improving student outcomes or other relevant outcomes based on—
 - (I) strong evidence from at least one well-designed and well-implemented experimental study;
 - (II) moderate evidence from at least one well-designed and well-implemented quasi-experimental study; or
 - (III) promising evidence from at least one well-designed and well-implemented correlational study with statistical controls for selection bias; or
- (ii) (I) demonstrates a rationale based on high-quality research findings or positive evaluation that such activity, strategy, or intervention is likely to improve student outcomes or other relevant outcomes; and
 - (II) includes ongoing efforts to examine the effects of such activity, strategy, or intervention.

cause-and-effect relationships because they yield program and control groups that are equivalent on observable and unobservable characteristics.

- **Tier II evidence** must come from at least one “well-designed and well-implemented” quasi-experimental study that shows a statistically significant improvement in one or more outcomes. Instead of using randomization, quasi-experiments rely on comparison groups that are equivalent on key characteristics measured before the start of the program.
- **Tier III evidence** comes from at least one correlational study that compares outcomes for program participants with those from a comparison group and uses statistical controls to make the groups as comparable as possible. The implication is that the program and comparison groups in Tier III studies are less closely matched than those in Tier II studies.
- **Tier IV evidence** has two requirements: There needs to be a strong rationale connecting specific intervention components to the expected outcomes produced by the intervention (e.g., theory of change or logic model), and the intervention must be undergoing an evaluation of effectiveness.

ESSA leaves to each state the decisions about (1) which level of evidence to require for different activities under the law (except for School Improvement Grants, which require Tier I and II evidence) and (2) how to operationalize these basic definitions. As mentioned in the main body of the report, because Tier IV does not require having a published evaluation of the specific intervention, and this review focused on study findings as the unit of analysis, we could not consider this tier as part of this review.

Evidence Guidance Clarified Some of ESSA’s Requirements and Provided Recommendations for Evidence Use in Practice

To support states’ responsibility to apply ESSA evidence tiers to activities funded under the law, the USDOE in 2016 issued nonbinding, nonregulatory guidance for using the evidence tiers in practice. The most relevant aspects of the guidance for this review are

- **the definition of “well-designed and well-implemented.”** For Tiers I and II, the guidance further defines the meaning of the law’s “well-designed and well-implemented” language. Well-designed and well-implemented Tier I evidence could meet WWC standards without reservations, while well-designed and well-implemented Tier II evidence could meet WWC standards with reservations. In our assessment of whether a finding could potentially meet WWC standards, we applied attrition standards for RCTs and baseline equivalence standards for quasi-experiments. We also examined whether the design was free of confounds (e.g., the treatment or control condition includes only one school or district in its entirety). In addition, findings that used outcome measures with questionable reliability or validity or that were overly aligned with the interventions (per WWC definitions) could not meet this standard.
- **the broad application.** The USDOE recommends that Tier I and II evidence have broad application beyond a small group of students and one site. Specifically, the USDOE suggested that evidence for Tiers I and II come from a study (or a combination of studies that evaluated the same intervention) involving at least 350 students and more than one site. Although guidance stops short of defining “site,” the USDOE has used “school district” as the definition of site in its own tiered-evidence grant competitions, and we use that definition in this report.

- **the relevance to the population and context where the program will be implemented.** The USDOE recommends that Tier I evidence come from studies that were conducted with *a similar population and context* to those in which the program will be offered. Tier II evidence should come from a similar population *or* context. Whether a population or context is similar is a judgment call to some extent, and the USDOE does not define population and context further. In its own grant competitions, however, the USDOE has considered population to reference student characteristics and context to reference elements of the setting (e.g., urban or rural, school or nonschool location) that may be relevant to the effectiveness of the program.
- **the overall effectiveness and absence of harm.** The USDOE makes two recommendations that seek to steer decisionmakers away from cherry-picking research results. The first recommendation is to consider the overall effectiveness of the program by examining the full body of evidence from well-designed and well-implemented studies. The second recommendation is to consider whether any positive results are overridden by negative results—in other words, whether any negative results would cast doubt on the overall potential of the program to improve outcomes for students.

Table A.1 summarizes ESSA’s requirements and the USDOE’s recommendations and vocabulary that we use to describe the extent to which findings, studies, and programs fulfill these requirements and recommendations. The first column presents the word or phrase that we use as shorthand for the requirement or recommendation, and subsequent columns explain the key question, source, and specifics of each requirement or recommendation, as well as the tiers to which it applies.

In this report, we provide information on whether a program has evidence that meets the first five criteria (rigor, positive result, broad application, absence of harm, and overall effectiveness). It is important to note that our assessment of absence of harm was limited to the collective evidence that our review has identified and examined, and it did not consider the findings from additional studies that may have examined the programs in our review but did not meet our eligibility criteria. For practitioners to determine similarity, we provide information that decisionmakers can use to make their own determination. Intervention summaries presented in Section Two provide some of this information.

How We Address Remaining Gaps in ESSA and Evidence Guidance

ESSA provides clear guidance to identify studies that meet the Tier I and Tier II cause-and-effect requirements by linking these evidence tiers directly to WWC standards. Our review, therefore, uses the *What Works Clearinghouse Standards Handbook* (version 4.0) as our standard for Tier I and Tier II evidence. However, the legislation and guidance are less clear about how to identify studies that meet the rigor of study design criteria for Tier III evidence.

The guidance indicates that Tier III studies must use a “well-designed and well-implemented correlational study with statistical controls for selection bias” (USDOE, 2016, p. 9). To meet this requirement for our review, we required that studies employ a comparison group design (e.g., an RCT, RDD, or QED that does not meet the rigor criteria for Tier I or II), control for selection bias using statistical adjustment methods acceptable under the WWC standards (e.g., multivariate regression, ANCOVA, growth modeling, fixed effects, or difference-in-difference adjustments), and apply outcome measures that meet the WWC’s outcome standards (i.e., having face validity and reliability and not being overly aligned with treatment). We also des-

Table A.1
Summary of Evidence Requirements from ESSA Legislation and Recommendations from U.S. Department of Education Guidance

Shorthand Title	Key Question	Source	Requirement or Recommendation	Relevance to Tiers
Criteria Used in the Tier Assessments Presented in This Report				
Rigor of study design	Can the study provide a credible assessment of whether the program is responsible for the outcomes?	ESSA	Study must use a well-designed and well-implemented experimental, quasi-experimental, or correlational design.	Tiers I–III
	Does the evidence meet WWC requirements?	Guidance	Tier I–II studies must meet WWC standards with or without reservations.	Tiers I–II
Positive result	Did the program improve any outcomes?	ESSA	There must be at least one statistically significant improvement.	Tiers I–III
Broad application	Has the program demonstrated its effectiveness in multiple places and with a sufficiently large group of students?	Guidance	A study (or studies) must involve a large sample ($n > 350$) and more than one site (school district).	Tiers I–II
Absence of harm	Is there any evidence from rigorous (Tier I or II) studies that this program harms students?	Guidance	There should be no negative findings that would cast doubt on the overall benefit of the program for students.	Tiers I–III
Overall effectiveness	Considering all the evidence from rigorous studies of this program, how effective is the program?	Guidance	Decisionmakers should consider the overall body of evidence on the program.	Tiers I–III
Additional Determination to Be Considered by Decisionmakers				
Similarity	Has this program improved outcomes for similar students or in a similar context?	Guidance	Evidence should be from a similar population (of students) and/or context (e.g., locale or type of education setting).	Tiers I–II

ignated findings as meeting Tier III if the studies did not provide sufficient information to assess all relevant WWC standards for Tiers I or II or did not meet the WWC standards for the first two evidence tiers for design or analytic issues (or both). For example, we included findings from RCTs and RDDs that did not meet WWC’s attrition and baseline equivalence standards (or did not provide sufficient information for making those assessments) and from QEDs that did not meet WWC’s baseline equivalence standard. Findings that did not meet WWC standards with or without reservations due to specific confounds (e.g., drawing comparison students from only one school that did not have any program participants) were also considered as eligible to meet the Tier III rating.

Literature Search

We conducted a comprehensive search of the major electronic databases of indexed scientific literature (the Education Resources Information Center [ERIC], Education Abstracts, PsycInfo, Scopus, and Web of Science) and relevant websites on summer program research to

identify evaluation reports. We limited our search to reports published from 2000 to July 2017. Our search focused only on full-text reports (conference abstracts were excluded) published in English. We removed any duplicates arising from the multiple searches by using the “remove duplicate” feature in EndNote, then we screened and removed duplicates manually as they were found. Non-U.S. citations were removed manually by title and abstract searching and reviewing for non-U.S. countries and locations.

Search Strategy

We used the following search strings for ERIC (all other search strings are available upon request):

2000-present; English Language; Limit to Academic Journals, Eric Documents, Educational Reports

TI Summer OR AB Summer

AND

TI ((student* OR youth OR child* OR adolescent* OR teen* OR “high school*” OR “elementary*” OR “middle school*” OR “junior high” OR “secondary” OR pre-kindergarten* OR kindergarten* OR “first grade*” OR “second grade*” OR “third grade*” OR “fourth grade*” OR “fifth grade*” OR “sixth grade*” OR “seventh grade*” OR “eighth grade*” OR “ninth grade*” OR “tenth grade*” OR “eleventh grade*” OR “twelfth grade*”)) OR AB ((student* OR youth OR child* OR adolescent* OR teen* OR “high school*” OR “elementary*” OR “middle school*” OR “junior high” OR “secondary” OR pre-kindergarten* OR kindergarten* OR “first grade*” OR “second grade*” OR “third grade*” OR “fourth grade*” OR “fifth grade*” OR “sixth grade*” OR “seventh grade*” OR “eighth grade*” OR “ninth grade*” OR “tenth grade*” OR “eleventh grade*” OR “twelfth grade*”)) OR DE “Grade 1” OR DE “Grade 10” OR DE “Grade 11” OR DE “Grade 12” OR DE “Grade 2” OR DE “Grade 3” OR DE “Grade 4” OR DE “Grade 5” OR DE “Grade 6” OR DE “Grade 7” OR DE “Grade 8” OR DE “Grade 9”

AND

TI ((“rigorous research” OR impact OR effect OR outcome OR random OR randomly OR randomized OR randomization OR correlational OR quantitative OR “research synthesis” OR “meta-analysis” OR “meta analyses” OR review OR “control group*” OR “control condition*” OR “comparison group*” OR “comparison condition*” OR “regression discontinuity” OR “matched group*” OR baseline OR treatment* OR experiment* OR experimental* OR trial OR intervention OR empirical OR evaluation* OR evaluate OR “research study” OR impact OR impacts OR effectiveness OR casual OR casually OR causality OR posttest OR post-test OR “follow up*” OR follow-up* OR pretest* OR pre-test* OR QED OR QEDs OR QES OR RCT OR RCTS OR “propensity score*” OR “propensity scores” OR “quasi-experiment*” OR “research synthesis” OR “meta-analysis” OR “systematic review*”)) OR AB ((“rigorous research” OR impact OR effect OR outcome OR random OR randomly OR randomized OR randomization OR correlational OR quantitative OR “research synthesis” OR “meta-analysis” OR “meta analyses” OR review OR “control group*” OR “control condition*” OR “comparison group*” OR “comparison condition*” OR “regression discontinuity” OR “matched group*” OR baseline OR treatment* OR experiment* OR experimental* OR trial OR intervention OR empirical OR evaluation* OR evaluate OR “research study” OR impact OR impacts OR effectiveness OR casual OR casually OR causality OR posttest OR post-test OR “follow up*” OR follow-up* OR pretest* OR pre-test* OR QED OR QEDs OR QES OR RCT OR RCTS

OR “propensity score*” OR “propensity scores” OR “quasi-experiment*” OR “research synthesis” OR “meta-analysis” OR “systematic review*”))
 NOT
 SU Foreign countries

We uploaded 3,671 retrieved citations into the EPPI-Reviewer software for evidence synthesis. The full research team developed criteria for excluding citations based on the title and abstract. Titles and abstracts were reviewed by one of two researchers who first completed an inter-rater reliability (IRR) exercise based on a sample of 52 citations. The reviewers consulted with the study team on any citations in which the decision to retain or exclude was not easily determined. The following criteria were used for this screening:

- EXCLUDE on no intervention: no specific intervention was evaluated
- EXCLUDE on date: document published prior to 2000
- EXCLUDE on country: not in the United States
- EXCLUDE on publication type: OpEd; letter to the editor; newspaper, magazine, or newsletter article, book or book chapter, book review
- EXCLUDE on target population: not targeted at rising K–12 students
- EXCLUDE on outcomes: study does not examine an eligible outcome in at least one of the domains of interest.

Following the title and abstract screening, 1,360 citations were advanced to screening for eligibility based on full-text review. Each document was screened by one of three researchers who first participated in two IRR exercises in which 20 documents were reviewed by all four reviewers. If results were not unanimous, the team conferred and clarified rules for exclusion. After completing the IRR exercises, one researcher reviewed the full text for each citation, and, if there was a question about how to apply the criteria, a second reviewer conducted an additional review. Remaining questions were resolved by the entire study team. The above criteria for exclusion were used in addition to the following:

- EXCLUDE on availability: full text of study could not be located
- EXCLUDE on conference publication: conference abstract, presentation, panel, or paper
- EXCLUDE on literature review: only prior studies were reviewed with no new evaluation of an intervention
- EXCLUDE on meta-analysis: only a meta-analysis with no new evaluation of an intervention
- EXCLUDE on WWC evidence review: only a review of previously published research
- EXCLUDE on no treatment or comparison group: no comparison between interventions and groups
- EXCLUDE on not a summer program: intervention does not take place during the summer
- EXCLUDE on treatment-treatment design: no comparison between interventions and an eligible comparator condition
- EXCLUDE on combined summer and school-year intervention: intervention takes place during the school year and the summer, and the school-year portion is more extensive than the summer portion

- **EXCLUDE on duplicate document:** another publication presenting the study was already included in our review.

During the eligibility assessment, we also identified documents that reported results from the same study (defined as the evaluation of a program or intervention in a specific location with a specific sample). Each of the resulting 83 studies went through a process that involved an in-depth review and extraction of results and study details, which is described in the next section.

In-Depth Reviews and Extraction of Study Details

The documents corresponding to the 83 studies that passed all eligibility criteria were then subject to in-depth reviews per ESSA evidence criteria as operationalized by the study team. These in-depth reviews were carried out by a team of three researchers. One of the three researchers conducted the initial review of the document and recorded all relevant findings using the Study Review Guide tool, which is developed and used by the WWC. The reviewer used the Study Review Guide to apply WWC Group Design Standards (version 4.0) to each finding and make the necessary statistical adjustments and calculations (e.g., assessing attrition rates, checking baseline equivalence, cluster correction, accounting for multiple-hypothesis testing, assessing whether the estimated effect is statistically significant, and calculating effect sizes). The reviewer also assessed whether each finding met the additional ESSA criteria pertaining to the use of large and multisite samples (relevant to Tiers I and II) and the presence of any evidence of the intervention being examined having statistically significant negative effects on relevant outcomes (in the same study or in other studies that evaluated the intervention), which is relevant for Tiers I through III. All of the initial review results and evidence tier determinations were examined and corroborated (or revised in consultation with the initial reviewer) by an independent researcher who was a certified WWC reviewer. As noted in Chapter Two, the reviews conducted for this report were not official WWC reviews and the decisions regarding whether findings meet ESSA evidence tiers should be seen as unofficial assignments made by the study team.

Another team of three researchers extracted the following information (to the extent that data were available) from 46 studies of 43 programs that we had assigned to Tiers I or III:

- **Intervention features:** main components of the program, duration, staffing (e.g., whether program was delivered by certified teachers, instructors, or camp staff), participant-staff ratio for instructional periods, youth targeted by the program, attendance rates of participants, support and training provided to staff, setting (e.g., district-owned public-school building, community location, or home), cost of the program, and fee for families
- **Study participants and location:** locale (e.g., urban, suburban, or rural), total number of participants and sites, rising grade level of participants, race and ethnicity of participants, household income level of participants, and special populations served (e.g., percentage of participants who are English language learners or have Individualized Education Plans).

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Research evidence suggests that summer breaks contribute to income-based achievement and opportunity gaps for children and youth. However, summertime can also be used to provide programs that support an array of goals for children and youth, including improved academic achievement, physical health, mental health, social and emotional well-being, the acquisition of skills, and the development of interests.

This report is intended to provide practitioners, policymakers, and funders current information about the effectiveness of summer programs designed for children and youth entering grades K–12. Policymakers increasingly expect that the creation of and investment in summer programs will be based on research evidence. Notably, the 2015 Every Student Succeeds Act (ESSA) directs schools and districts to adopt programs that are supported by research evidence if those programs are funded by specific federal streams.

Although summer programs can benefit children and youth who attend, not all programs result in improved outcomes. RAND researchers identified 43 summer programs with positive outcomes that met the top three tiers of ESSA’s evidence standards. These programs were identified through an initial literature search of 3,671 citations and a full-text review of 1,360 documents and address academic learning, learning at home, social and emotional well-being, and employment and career outcomes. The authors summarize the evidence and provide detailed information on each of the 43 programs, focusing on the evidence linking summer programs with outcomes and classifying the programs according to the top three evidence tiers (strong, moderate, or promising evidence) consistent with ESSA and subsequent federal regulatory guidance.

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