

Staying On Track:

Testing Higher Achievement's Long-Term Impact on Academic Outcomes and High School Choice

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Foreword

This evaluation of the Higher Achievement program was initiated by Public/Private Ventures in partnership with Dr. Leigh Linden, who was at Columbia University at the start of the project and now serves as an assistant professor of economics and public affairs at the University of Texas at Austin. The study began in 2006, adding to an extensive body of research that P/PV had conducted on out-of-school-time programs over several decades. When P/PV ceased operations in July of 2012, this brief was still in development, and our colleagues at MDRC generously agreed to publish it. The findings and conclusions are solely those of the authors.

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In addition, we are grateful to the youth, parents, mentors, teachers and program staff who took the time to complete surveys or participate in our interviews and focus groups. Their insights have been invaluable in expanding our knowledge of effective out-of-school-time programs.

Staff at Higher Achievement were supportive partners throughout the study's implementation. Numerous staff members helped set up our site visits, cooperated with data collection efforts, and patiently responded to our many requests over the course of the evaluation. The efforts of Edsson Contreras and Gail Williams (around youth recruitment) were particularly instrumental to the study's success. Special recognition goes to the leadership of Higher Achievement. Maureen Holla helped design and secure initial funding for the project; Lynsey Jeffries and Richard Tagle provided continued support throughout data collection.

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The contributions of several other colleagues were also crucial to completing the project. Annelies Raue at Columbia University and Audrey Straus at the University of Texas at Austin provided exceptional assistance in conducting the analyses. Ama Baafrá Abeberese, Evan Borkum and Mariesa Herrmann also assisted with data analysis during earlier phases of the project at Columbia. At P/PV, Jennifer McMaken co-directed the project throughout the first several years of its implementation. Laura Colket, Siobhan Cooney, Jennifer Pevar, Brittany Rhoades and Salem Valentino joined the project as summer interns, conducting site visits, analyzing the resulting data and assisting with survey development and analysis. Nora Gutierrez and Becca Raley conducted site visits and interviewed staff and mentors to provide implementation feedback to the program.

Yolanda Fowler and Claudia Ross translated our surveys and consent forms.

Chelsea Farley edited the brief, provided excellent feedback that shaped its direction and tone and coordinated its publication. Clare O'Shea provided final copyediting. Malish & Pagonis designed the brief.

The middle school years are increasingly recognized as a critical, “make or break” period in youth’s academic lives (Balfanz et al. 2007). Studies show that how well students do in middle school—and how smoothly they make the transition to high school—have profound implications for their futures (Balfanz 2009; Grossman, Cooney 2009; Kieffer, Marinell 2012). Attendance, grades, test scores and behavior during the middle grades all predict students’ performance in high school and their odds of graduating. Unfortunately, many students struggle academically and lose their way during the middle school years (Crockett et al. 1989; Petersen, Crockett 1985). And, for youth who fall off track—especially in poor communities, where resources and supports are limited—it can be exceedingly difficult to get back on a steady path.

One crucial decision that middle schoolers (and their families) make is where they will attend high school. Many districts employ school choice systems designed to allow students to pick a high school that will meet their needs and interests. Yet most students prefer high schools that are close to home, and for youth in low-income neighborhoods, this often means attending a more disadvantaged, lower-performing school (Nathanson et al. 2013).

Youth who defy these odds and choose a competitive high school instead have much to gain. Cullen et al. (2005), for instance, found that Chicago public middle school students who chose to attend a higher-achieving high school were substantially more likely to graduate. However, even as eighth graders, these students already differed in many ways from their peers who chose a neighborhood school—they had better self-reported grades and higher expectations for the future, felt more prepared for high school and were more likely to have spoken with their parents about what school to attend. These findings raise the question of how we can prepare more disadvantaged students to take the many steps necessary—throughout the middle school years—to successfully transition to a competitive, high-quality high school that can ultimately launch them toward college and careers.

The Washington, DC–based Higher Achievement program is taking on this challenge. Higher Achievement targets rising fifth and sixth graders from “at-risk communities” and serves them throughout the middle school years. Its goal is to strengthen participants’ academic skills, attitudes and behaviors, reinforce high aspirations and help students and their families navigate the process of applying to and selecting a high-quality high school.

In 2006, the authors began a comprehensive multiyear evaluation of Higher Achievement to test its impact on participants’ academic performance, attitudes and behaviors and on their high school enrollment. The evaluation used random assignment—the most rigorous design available to researchers—to assess program impacts. This brief summarizes the study’s findings.

About the Evaluation

In the spring of 2006, 2007 and 2008, youth who were entering fifth or sixth grade and met Higher Achievement’s admission criteria¹ completed a standardized test and were surveyed (as were their parents). Then a lottery was used to determine which students would be offered the opportunity to participate in Higher Achievement (i.e., the “treatment group”) and which would not (i.e., the “control group”). This design ensured that at the start of the study the two groups of youth were, on average, identical, and that any differences that emerged between them over time could be attributed to the Higher Achievement program.²

After the initial assessment, we re-surveyed both groups of youth and their parents several times:

- In the spring, one, two and four years after random assignment; and
- In the fall of 2010, when we conducted a survey focused primarily on their learning and experiences over the previous summer.

At each time point, our surveys measured attitudes, behavior and participation in a range of activities. Standardized tests were administered, in concert with the surveys, to assess youth’s performance in reading comprehension and math problem-solving (which we refer to throughout this brief as “reading” and “math”). In the fourth-year follow-up

The study has yielded several other publications:

Testing the Impact of Higher Achievement's Year-Round Out-of-School-Time Program on Academic Outcomes (Herrera et al. 2011a) summarizes findings from the first two follow-ups.

Summer Snapshot: Exploring the Impact of Higher Achievement's Year-Round Out-of-School-Time Program on Summer Learning (Herrera et al. 2011b) describes the program's effect on learning during the summer of 2011.

Findings from these reports and the current brief are described in a more detailed technical report about findings across the entire evaluation (see Linden et al. 2013).

survey, we also asked parents and youth about the high school application process. Finally, in addition to these sources of data, we conducted program observations, interviews and surveys of Higher Achievement program staff, mentors and teachers to elicit information about staff qualifications and training, the program's curriculum and culture, and other implementation issues.

The evaluation has yielded two previous reports—one describing Higher Achievement's impacts after two years and the other outlining program effects over the course of one summer (see textbox). This brief summarizes the findings from the full four-year evaluation, addressing the following core questions:

- What is Higher Achievement?
- Who does the program serve?
- How long do youth participate?
- Does Higher Achievement improve academic performance over one, two and four years?
- Does Higher Achievement affect high school placement?
- If so, how does the program foster these benefits?

We conclude with a discussion of the implications of these findings for funders, policymakers and program leaders, as well as possible directions for future research.

What Is Higher Achievement?

Higher Achievement is an intensive summer and after-school program that began in its current form in 1999 in Washington, DC.³ Today, there are Higher Achievement programs in Washington, DC/Alexandria, VA; Richmond, VA; Pittsburgh, PA; and Baltimore, MD.⁴ The study includes the five Higher Achievement centers that were operating in DC and Alexandria when the study began.⁵

Each center serves about 85 students, or “scholars,” recruited mainly through school referrals. Starting the summer before youth enter fifth or sixth grade, and extending through eighth grade, Higher Achievement provides scholars with up to 650 hours of academic instruction per year, as well as enrichment activities and targeted, academic mentoring. See the “Higher Achievement's Afterschool and Summer Academies” textbox on the next page for more details about the program.

Who Does Higher Achievement Serve?

A total of 952 youth participated in the study. They were recruited in three annual cohorts starting in 2006.⁶ A little over half of these students entered the study as rising fifth graders. The remainder started in the summer before the sixth grade. Most of the students were African American (75 percent); 13 percent were Latino. More than half (59 percent) were girls. About 60 percent were eligible for free or reduced-price lunch, and only 28 percent lived with both parents. Twelve percent reported speaking a language other than English at home. Thus, in many ways, the youth were fairly typical of disadvantaged students in the DC area.

Yet, they also differed in important ways. First, these youth scored slightly above the national average on the standardized tests—much better than the typical disadvantaged student in the DC area.⁷ Second, they seemed to have better-than-average grades. Close to two thirds (65 percent) of applying youth reported earning mostly As or As and Bs in school, and only 6 percent reported earning mostly Cs or lower. Additionally, to be eligible for Higher Achievement, students and their parents needed to complete an application, attend an in-person

Higher Achievement's Afterschool and Summer Academies

Higher Achievement is a year-round out-of-school-time (OST) program with two main components, the Afterschool Academy and the Summer Academy, both of which participating scholars are required to attend.

During the school year, Higher Achievement's *Afterschool Academy* is offered three days a week, from 3:30 p.m. to 8 p.m., over a 25-week period. Each daily session includes homework help, dinner, an arts or recreation elective, a 25-minute "community gathering" (attended by all staff, volunteers and youth) and 75 minutes of small-group academic instruction using a structured curriculum. The small groups are led by volunteer mentors who work with their group one day a week and commit to staying with the program through at least one school year. One day each week is focused on math, one on literature and one on a seminar that includes such topics as creative writing, conflict resolution and technology. The curriculum that guides these mentoring groups follows skill standards set by the DC and Virginia public school systems and reflects Common Core state standards that are being developed and adopted across the country. It is framed around four social justice themes (freedom, justice, solidarity and voice) and is designed for youth's specific grade in school. The Afterschool Academy also offers scholars the opportunity to take part in monthly field trips, career shadowing days and community service projects.

Higher Achievement's six-week *Summer Academy* operates from 8 a.m. to 4 p.m., five days a week. Scholars have four core classes, focusing on academic concepts they will be exposed to during the coming school year. Classes are taught by paid teachers in math, science, social studies and literature and typically include about 13 youth. As with the Afterschool Academy, the summer curriculum is aligned with the DC and Virginia public school standards and assessments. In addition to core academics, youth take two electives (such as sculpture, chess or martial arts) and participate in weekly field trips, academic competitions and a three-day out-of-town university trip, in which they experience college life by sleeping in dorms, eating in the cafeteria and attending lectures.

As students approach high school, Higher Achievement increases its focus on this important transition. For example, at the end of the seventh grade, staff hold a "family night" that includes a group discussion with parents about high school applications. During the Summer Academy, rising eighth graders spend two days visiting high-quality high schools and engaging in guided discussions about these schools. Staff also meet individually with each eighth grade parent to review the student's grades, answer questions and make recommendations for high school. During the following fall, eighth graders have one mentoring session each week devoted to high school applications. The manager of school placement from the DC Metro Office also makes biweekly visits to each center to answer individual scholars' questions and help with the application process.

interview and commit to active participation for three to four years. These requirements generated a group of eligible youth who had backgrounds similar to those of their peers, but who were particularly motivated to succeed in school.

One might ask whether these students need the kind of intensive support that Higher Achievement provides. In considering this question, it is important to note that even highly motivated students can become disengaged from school during the middle grades, and low-income youth of color may be particularly vulnerable to subsequent academic declines (Simmons et al. 1991; see Gutman, Midgley 2000). Moreover, because the Higher Achievement applicants were already doing fairly well in school, it is unlikely that their teachers would have given them the extra help or attention needed to raise their achievement levels to be on par with those of the high-performing

students who typically attend DC's more competitive schools. Thus, these youth *could* very well benefit from the types of support Higher Achievement offers.

This study allows us to determine whether, in fact, they do. It examines the difference that a program like Higher Achievement can make, over several years, for this group of initially motivated students, compared to an equally motivated control group. By comparing the outcomes of the eligible youth who were offered a spot in the program with the outcomes of those who were not, we were able to discern Higher Achievement's effects on youth's academic trajectories. Examining differences in the experiences of these two groups of youth, in turn, sheds light on how these effects may have been achieved and the types of support that could promote similar gains for promising young people in other disadvantaged communities around the country.

How Long Do Youth Participate?

Higher Achievement is a multiyear program with a curriculum that advances from grade to grade and many activities that are designed for specific age groups. Youth are typically admitted only at the end of the fourth or fifth grade, when they can attend the full three- or four-year program, and they are asked to commit to that full program. (Scholars who enter as rising fifth graders can receive four years of programming before graduating from Higher Achievement; scholars who enter as rising sixth graders can receive three years of programming.)

Keeping youth engaged in OST programs over time is challenging. Few programs have been able to consistently retain youth for more than a year or two, particularly during middle school. For example, a survey of 198 OST programs in six cities found that, on average, programs retained only 22 percent of their middle-school-aged participants for a year or more (Deschenes et al. 2010).⁸

For these reasons, it is important to know how many youth actually stay in Higher Achievement for the entire length of the program. At the first-year follow-up, 75 percent of the youth in the treatment group who completed our survey reported that they were still attending Higher Achievement. After two years, this percentage was still fairly high, at 70 percent. Four years after the baseline, when considering only those youth who started the program

before the fifth grade (i.e., those who were still eligible to participate four years later), 47 percent were still attending. Even acknowledging that these numbers are likely slightly inflated (because youth who completed the survey were probably more likely to be involved with Higher Achievement than those who did not), these retention rates are impressive, especially compared to those seen in other OST programs serving middle school youth.

Does Higher Achievement Improve Academic Performance?

Retaining youth over time provides a good foundation for making a difference in their lives, but not all OST programs—even those that effectively engage youth—are capable of producing measurable academic gains. We assessed youth’s academic progress via standardized tests of math and reading, conducted at each follow-up.

After one year, youth in the treatment and control groups performed similarly. However, after two years, youth with access to Higher Achievement performed significantly better on both tests (see Table 1). By the fourth-year follow-up, when about half of the study youth had transitioned to high school and thus no longer had access to the program, Higher Achievement youth retained their edge in math, but not in reading.⁹

Table 1
Effects of Higher Achievement on Standardized Test Scores

	First-Year Follow-Up	Second-Year Follow-Up	Fourth-Year Follow-Up
Math problem-solving	0.03	0.10*	0.11*
Reading comprehension	0.02	0.08†	0.04

Note: The values in the table are standardized mean differences, namely “effect sizes.” The effect sizes were calculated as the estimated average difference between each student’s score and the national average score divided by the standard deviation of the national scores. (The standard deviation is a measure of the variation of scores around the average score for the test.) An effect size of .10, for example, means that the treatment group’s average score is 1/10 of a standard deviation higher than the control group’s average. These regression estimates control for a number of variables—the youth’s baseline scores for reading and math; self-perceptions of academic abilities, industry and persistence, creativity, enjoyment of learning, curiosity, and ability to change the future through effort; peer academic support; and general adult support—in addition to grade at baseline, gender, age, receipt of free or reduced-price lunch, race and whether the student applied with a sibling. Family-level controls include fixed effects for the center to which the family applied, parent’s education level, household income, household composition and whether English is the primary language spoken at home.

****p* < .001 level of significance.

** *p* < .01 level of significance.

* *p* < .05 level of significance.

† *p* < .10 level of significance.

We also explored whether any specific groups of youth may have benefited more than others. Generally, Higher Achievement's effects on academic performance did not differ as a function of any of the youth characteristics we examined.¹⁰

How Large Are These Effects?

To put these gains into perspective, we compared them to the typical 12-month gains made by youth in the same grades without any intervention. Bloom et al. (2008) estimated these gains using national spring-to-spring average changes in seven major standardized tests. During the middle school years, the average yearly change in test scores was .32 in reading and .42 in math. Thus, the second-year impacts seen in our study (i.e., the extra help Higher Achievement provides by the end of the second year) are about a quarter of a year's progress for an average middle school student in both reading and math. Similarly, the fourth-year math impact represents a boost of approximately 26 percent of what youth this age would typically experience in one year.

Higher Achievement's impacts are larger than those seen in other rigorous, large-scale evaluations of OST programs.¹¹ To date, there have been very few large-scale randomized controlled trials of OST programs. Two of the largest randomized studies examined impacts after two years. James-Burdumy et al. (2007) found no academic effects from the 21st Century Community Learning Centers in a large-scale experimental evaluation. In a follow-up study that examined the marginal impacts of a well-delivered, research-based math and reading curriculum, above and beyond the typical homework help/academic period offered in the 21st Century Community Learning Centers, Black et al. (2009) found that the enhanced programs in the sample did not significantly increase math scores over the typical program and *decreased* reading scores by .21 standard deviations.^{12,13}

More comprehensive educational interventions—like changing the entire school-day setting for youth—have yielded larger impacts than those produced by Higher Achievement. For example, Tuttle et al.'s (2013) evaluation of KIPP schools found much larger four-year impacts in both math (.31) and reading (.22). And the Harlem Children's Zone

Promise Academy charter schools produced even larger improvements in math scores (.23 *per year*), but no improvements in English (Dobbie, Fryer 2011). These efforts expand well beyond those of OST programs, however, both in scope and cost.

Why Did the Program Yield Consistent Improvements in Math but Not Reading?

Although other rigorous studies of OST programs—and of educational interventions more broadly—have found improvements in math, changes in reading scores are much less common, and when effects on reading are found, they are generally smaller than those in math (e.g., Decker et al. 2004; Dobbie, Fryer 2011; Abdulkadiroglu et al. 2011; Furgeson et al. 2012; Tuttle et al. 2013). Very few OST programs have rigorous evidence of improvements in both areas. Thus, it is impressive that Higher Achievement was able to improve reading scores, even if only in the second year of the program.

These second-year results likely reflect the fact that the program has a strong focus on reading and literature. One day a week during the school year and one class a day during the summer is focused on literature, and grammar and reading comprehension are woven into all of these lessons. Higher Achievement scholars also participate regularly in contests and have many informal learning opportunities that may boost their language abilities. For example, scholars are given a “word of the week” and “quote of the week” in Higher Achievement's community meeting—a gathering that emphasizes public speaking.

Given this focus on reading and language, it is perhaps surprising that Higher Achievement did not have even stronger and longer-lasting effects on reading comprehension. The high motivation level of the controls may help to explain this pattern. Students proficient in reading can fairly easily improve their reading comprehension on their own (while improving problem-solving independently is more difficult). We observed that at least two thirds of *both* the control and treatment groups had “done writing” (e.g., poems, letters or essays) not assigned at school, and almost three quarters had read books not assigned at school at all three points of follow-up. Thus, even without access to Higher

Achievement, these youth appeared to be engaged in activities conducive to advancing the types of skills measured by reading comprehension tests. In addition, less than half of the eighth-grade treatments were still participating in Higher Achievement at the fourth-year follow-up—very likely decreasing our estimated effects, because the analyses include all youth in the treatment group regardless of participation.¹⁴

In sum, Higher Achievement fosters improvements in both math and reading. However, these changes take more than a year to materialize, and only the math impacts were sustained four years after youth enrolled in the program. The size of the gains was substantial relative to those yielded in other studies of OST programs and year-to-year gains typically seen in middle school, yet not as large as those seen in some more comprehensive educational interventions.

Does Higher Achievement Affect High School Placement?

In addition to examining Higher Achievement's impact on academic performance, we also wanted to know whether the program accomplished its goal of improving youth's matriculation at high-quality high schools. The landscape of schools in DC provides a range of strong options for students. For example, the DC area is home to a host of well-regarded private schools. Many families of means opt for these private schools over available public schools, because they believe these schools will offer a richer educational experience and better outcomes for youth. At a national level, private schools tend to have smaller class sizes and more rigorous academic programs than public schools (Choy 1997). And seniors enrolled in private schools are more likely to go to college, even after accounting for differing aspirations, abilities, and socio-economic status (Falsey, Heyns 1984). DC also offers some very strong public magnet and public charter schools. Like private schools, DC public magnet schools have an application process that includes a review of youth's grades, test scores and writing and an interview, which are used to select students for admission. Some charter schools also require that students complete a written essay, interview and/or application, but the quality of their submission does not determine whether or not students are admitted (if more youth apply to a given school than it has slots for, a lottery is used to decide

who gets in). Still, these hurdles decrease the odds that less motivated families will complete the process and that youth will end up attending one of these charter schools.

Higher Achievement encourages scholars to apply to strong schools of all three types—private, magnet and charter. Because these schools vary widely in rigor and focus—particularly the public options—the program distinguishes among stronger, more competitive schools and tailors their recommendations to each scholar's interests and strengths.

To discern Higher Achievement's effects, we examined high school choices and placement at the last (fourth-year) follow-up, when youth were finishing either their last year of middle school or their first year of high school.¹⁵ We focused on four categories of schools: DC-area private schools, academically “competitive” public magnet and charter schools, “noncompetitive” public magnet and charter schools, and public high schools in the youth's neighborhood (i.e., public schools that were not magnet or charter schools and that youth could attend without applying, based on where they lived).¹⁶ We hypothesized that Higher Achievement would make it more likely that youth would apply to, be accepted to and attend private schools and competitive magnet and charter schools and less likely that youth would attend non-competitive magnet/charter schools or the public school in their neighborhood.

As seen in Table 2 on the next page, we found that parents of youth in the treatment group were indeed more likely than those of controls to report that their child applied to, was admitted to and matriculated at private high schools. About 27 percent of treatments

How Did We Determine that Schools Were Academically “Competitive”?

For the purposes of this study, we defined competitive magnet schools as those with an academic focus (which were thus academically competitive to get into). Competitive charter schools were defined as those that the DC public school system had classified as “Tier 1” in their three-tier classification system (based on such measures as standardized test scores and graduation rates). Academically noncompetitive charters and magnets were those that did not fall into the “competitive” category.

Table 2
High School Application and Matriculation

	Private Schools	Competitive Public Charter/Magnet Schools	Noncompetitive Public Charter/Magnet Schools	Neighborhood Public Schools ^a
Applied^b				
Controls (%)	21	55	22	N/A
Treatment – Control Difference (%)	6 [†]	-1	-8**	N/A
Admitted^b				
Controls (%)	14	49	16	N/A
Treatment – Control Difference (%)	7*	-3	-6*	N/A
Matriculated				
Controls (%)	9	43	13	35
Treatment – Control Difference (%)	6*	-4	-7**	5

Note: Each “Controls” row presents the proportion of youth in the control group who applied to, were admitted to or matriculated at each type of school. These values are estimated, controlling for a number of variables—the youth’s baseline scores for reading and math; self-perceptions of academic abilities, industry and persistence, creativity, enjoyment of learning, curiosity, and ability to change the future through effort; peer academic support; and general adult support—in addition to grade at baseline, gender, age, receipt of free or reduced-price lunch, race and whether the student applied with a sibling. Family-level controls include fixed effects for the center to which the family applied, parent’s education level, household income, household composition and whether English is the primary language spoken at home. The “Treatment – Control Difference” rows show the proportion of youth in the treatment group who applied to, were admitted to or matriculated at each type of school above and beyond the percentage of controls. For example, in the first set of cells, 21 percent of controls applied to a private school; 6 additional percentage points (27 percent) of treatments applied to a private school. This was a statistically significant difference.

*** $p < .001$ level of significance.

** $p < .01$ level of significance.

* $p < .05$ level of significance.

† $p < .10$ level of significance.

^a Application to and acceptance at neighborhood public high schools were not calculated because these schools do not require an application.

^b Youth could apply and be admitted to more than one type of school.

applied to these schools, compared to 21 percent of controls. Treatment youth were also 50 percent more likely than control youth to be admitted (21 percent versus 14 percent), and 67 percent more likely to matriculate (15 versus 9 percent) at these schools.

Many students also applied to public charter and magnet schools. In fact, close to two thirds of the youth in both the treatment and control groups applied to, and close to half eventually chose to attend, a public charter or public magnet school. Although treatment and control youth matriculated to *competitive* public magnet and charter schools at similar rates, treatment youth were much *less* likely to apply to and matriculate at *noncompetitive* public magnet/charter schools (6 percent versus 13 percent for controls). Essentially, Higher Achievement steered scholars away from weaker magnet and charter schools.

Finally, less than half of youth in both the treatment and control groups ultimately decided to attend the public high school in their neighborhood. We know that some youth moved to very strong neighboring school districts over the course of the study (for example, in Virginia and Maryland). However, we did not have a consistent measure of quality or “competitiveness” that we could use to categorize the neighborhood schools, thus we do not know if Higher Achievement youth were systemically more likely to attend a high-performing neighborhood school than were youth in the control group. Additional research could test this hypothesis.

In sum, our findings suggest that Higher Achievement did not affect the odds that youth would matriculate at a public high school in their neighborhood. Yet the program does appear to expand the options available to its students by

making them more likely to apply to and attend private schools and less likely to apply to and attend weaker public magnet and charter schools. This, in turn, may position youth for better outcomes in high school and beyond.

How Are These Changes Fostered?

To understand more about *how* Higher Achievement may have produced these benefits for youth, we examined a number of potential contributing factors. We found that—over the course of the study—Higher Achievement fostered differences in the treatment group in five of the areas we examined. In particular, Higher Achievement changed:

- The types of academic activities youth engaged in;
- The extent to which youth engaged in academic activities with adults;
- Youth's academic attitudes and behaviors;
- The high school–related activities youth engaged in; and
- The extent to which youth's parents participated in the high school application process.

Higher Achievement did *not* change:

- Youth's learning over the course of the summer;¹⁷
- The types of peers youth spent time with;
- The amount of general adult support youth experienced; or
- Youth's stated preferences for the type of high school they wanted to attend.

We discuss each of these outcomes in more depth below.

Educational Programming

Academic OST programs aim to improve student performance by providing academic experiences that add to and complement what youth do during the school day. Higher Achievement may have boosted youth's test scores, at least in part, by simply providing more academic instruction and experiences than youth would have had otherwise.

To test this hypothesis, we compared the educational experiences of scholars and their peers, in terms of the total amount of time they spent in academic OST programs and their likelihood of engaging in specific academic activities outside of school.¹⁸

First, as would be expected, we found that youth in the treatment group spent much more time in academic OST programs than their peers. Importantly, though, the control group also spent a significant amount of time in academic OST programs.¹⁹ At the first follow-up, for example, they reported spending an average of 1.7 days per school week and 0.8 days per week during the summer in these programs. However, youth in the treatment group received an *additional* 1.5 days of instruction per week during the academic year and 2.2 additional days during the summer. This translates to about 10 additional hours of instruction each week during the academic year and 20 hours per week during the summer. Significant but smaller differences in time spent in academic OST programs remained two and four years after baseline. Converting these values into annual estimates (assuming the 25 weeks during the academic year and 6 weeks during the summer when the program operates), Higher Achievement provided youth with about 370 *additional* educational hours in the first year and 327 in the second. Even in the fourth year, when participation was the lowest, the amount of additional time was still 226 hours.

Second, we found that youth in the treatment group were more likely than their peers in the control group to participate in several specific academic activities—for example, participating in academic contests or doing writing outside of school assignments—as well as several other enrichment activities (see Table 3 on the next page). At each follow-up, treatment youth participated more frequently in most of these activities, despite the fact that controls were also fairly likely to participate in them.

Preventing the Summer Learning Loss

Preventing the decline in academic performance that typically occurs over the summer is a common goal of OST programs that include summer activities. Disadvantaged youth are especially likely to experience academic setbacks over the summer (Cooper et al. 1996), in part because learning is dependent

Table 3:
Academic and Enrichment Activities

Activity ^a	First-Year Follow-Up		Second-Year Follow-Up		Fourth-Year Follow-Up	
	Controls (%)	Treatment – Control Difference (%)	Controls (%)	Treatment – Control Difference (%)	Controls (%)	Treatment – Control Difference (%)
Community service or volunteer work	53	0	56	4	70	4
Spoken to a group outside of school about your ideas/work	57	6 [†]	55	9*	58	11*
Visited a college campus to see what it would be like to be a college student	44	28**	45	28**	53	25**
Read books that are not for school	71	3	75	4	77	8 [†]
Written things (e.g., poems, letters or essays) not assigned at school	66	7*	71	3	68	14**
Visited a business to see what it would be like to work there	52	4	53	8*	56	14**
Gone to events outside of your neighborhood with your OST program	67	10**	74	6 [†]	75	9*
Participated in academic contests at your OST program	55	13**	57	11**	55	16**

Note: The values listed in each "Controls" column are the proportions of youth in the control group who reported ever participating in the activities listed. These values are estimated, controlling for a number of variables—the youth's baseline scores for reading and math; self-perceptions of academic abilities, industry and persistence, creativity, enjoyment of learning, curiosity, and ability to change the future through effort; peer academic support; and general adult support—in addition to grade at baseline, gender, age, receipt of free or reduced-price lunch, race and whether the student applied with a sibling. Family-level controls include fixed effects for the center to which the family applied, parent's education level, household income, household composition and whether English is the primary language spoken at home. The values in the "Treatment – Control Difference" columns are the proportions of youth in the treatment group who reported participating in the activities, above and beyond the proportions reported by youth in the control group.

*** $p < .001$ level of significance.

** $p < .01$ level of significance.

* $p < .05$ level of significance.

[†] $p < .10$ level of significance.

^a With the exception of the last two activities, youth were asked whether they had participated in these activities broadly (i.e., not only in the context of an OST program).

on home and community resources, which are often lacking for poor children. Higher Achievement aims to give scholars academic continuity by providing intensive instruction during the summer months—an approach that could help stem the summer learning loss that so many youth experience.

To evaluate Higher Achievement's effects on the summer learning loss, we conducted assessments in the spring before the 2010 Summer Academy and again in the fall, after the Academy ended.²⁰ As of the spring, treatment students (who had had the opportunity to participate in Higher Achievement for two to three years) already had significantly

better test scores in both reading and math, compared with youth in the control group. However, surprisingly, the following fall, the control students had *not* experienced the expected summer learning loss. Rather, their reading scores *increased*, and their math scores remained roughly stable. Scholars' reading scores also increased, but not as much as those for the control group; the treatment group's edge in math was also smaller and no longer statistically significant. As a result, treatment youth did not make bigger gains than controls over the summer, suggesting that while Higher Achievement may

prevent the summer learning loss, the very motivated youth it serves would have found other ways to avoid this decline even without the program.²¹

Changing Academic Attitudes and Behavior

Higher Achievement hopes to improve scholars' trajectories, in part by improving their attitudes toward school and learning, and increasing their confidence in their own abilities—attitudes that research suggests are linked with stronger academic performance (e.g., Wong et al. 2002). Thus, in addition to assessing youth's performance on standardized tests, we measured six aspects of students' self-perceptions: industry and persistence (i.e., their tendency to persist despite failure), creativity, perceptions of their own academic abilities, enjoyment of learning, curiosity, and the extent to which they believe they could change the future through their own effort.

Surprisingly, rather than improving students' academic perceptions, after their first year of access to the program, youth in the treatment group were less confident relative to controls. After the first follow-up, however, these differences basically disappeared.²² These negative effects may have been the consequence of entering a rigorous program with similarly motivated peers—a process that could have caused students to realize they had room for improvement. While decreased confidence could be viewed as an adverse outcome, it is possible that this process actually primed youth for future gains, encouraging scholars to work harder.²³

We also assessed the effects of the program on students' reports of their own negative behaviors, such as stealing, breaking something on purpose or going to the principal's office. Similar to the dip scholars experienced in their academic attitudes, students in the treatment group reported *worse* behavior one year after baseline. Although this difference became less pronounced in the last two follow-ups, it is still noteworthy, echoing reports by James-Burdumy et al. (2007) in their evaluation of the 21st Century Community Learning Centers. Higher Achievement scholars, in particular, may have "acted out" due to the stress of a more competitive environment. The program also encourages personal responsibility and honesty, so these youth may have been more apt than their peers to *report* negative behaviors.²⁴

Changing Youth's Peer Group

Past research has shown that youth's peer relationships can also affect academic outcomes (e.g., Wentzel, Caldwell 1997). It is possible that by putting students in closer contact with similarly motivated students, Higher Achievement provides a more academically supportive peer group, which might in turn encourage more diligent academic work and shifts in scholars' decisions about high school. Overall, Higher Achievement did change *where* scholars made their close circle of friends—youth in the treatment group were more likely to report that they met at least one of their closest friends through their academic OST program or through their family (and less likely to report that they had made these friends at school).²⁵ However we found no difference across groups in how academically supportive they perceived their peers to be.

We also asked about four specific academically oriented activities that youth could have participated in with their peers—whether they had helped their peers with their school work, presented their ideas in front of a group of peers, gotten praise from their peers for their achievements or talked with their peers about a math or science project outside of school. Similarly high proportions (over 80 percent) of youth in *both* groups had engaged in most of these activities with peers, at all three time points.²⁶

Increasing Youth's Access to Adult Support

Higher Achievement provides scholars with many opportunities for positive adult interaction. Program staff lead centers across multiple years, teachers interact with small groups of students throughout the Summer Academy, and mentors are encouraged to work with their mentoring group (two to five scholars)²⁷ throughout the school year and beyond. These relationships could foster improvements in academic performance both by providing more "emotional" aspects of support (e.g., helping youth through personal problems, listening, caring about youth) and by providing more direct academic support and guidance (e.g., talking with youth about college or high school). We asked youth questions about both types of adult support.

More than half of control students (typically, over two thirds) reported engaging with nonparental adults in each of the academically related

interactions that we asked about (e.g., talking with adults about how to get into a good high school, going to college or future jobs). Youth with access to Higher Achievement were still about 5 to 10 percentage points *more* likely to engage in each of these activities than controls. However, this increased engagement with adults did not translate into increases in more general perceptions of adult support—that is, in the number of adults who they said paid attention to them or were available to help them with problems. In fact, youth in both groups reported similarly high numbers of supportive adults outside their family (on average, a little over three adults), suggesting that even without Higher Achievement, these youth felt relatively well supported.

Student Preferences

To understand more about how Higher Achievement may have affected youth’s high school choices, we asked youth what characteristics were important to them as they decided which schools to apply to and attend, including, for instance, the school’s academic strength, its proximity to home, its cost, whether they believed they had a good chance of getting in, whether other friends were attending and whether others (e.g., parents, teachers, OST staff) thought they should apply. Higher Achievement did not appear to affect these priorities. Both control and treatment students reported that the school’s academic strength was the most important characteristic for them, followed closely by the school’s strength in the arts, sports or another area of interest. Thus,

Table 4
High School Application Activities

Activity	Controls (%)	Treatment – Control Difference (%)
Attended a mock interview	15	12**
Attended a test preparation class for the SSAT or HSPT ^a	13	11**
Practiced for the SSAT or HSPT, but not as part of a class	12	17**
Took the SSAT or HSPT	18	7*
Applied for a scholarship	13	6†
Received a scholarship	10	5†
Visited a high school of interest	60	7†
Spoke with teachers or other staff at a school of interest	52	10*
Spoke with students who attended these schools about how they liked it there	54	12**
Got information about specific high schools	60	4
Attended a “shadow” day at a high school	26	5

Note: The values listed in the “Controls” column are the proportions of youth in the control group who reported ever participating in the activities listed. These values are estimated, controlling for a number of variables—the youth’s baseline scores for reading and math; self-perceptions of academic abilities, industry and persistence, creativity, enjoyment of learning, curiosity, and ability to change the future through effort; peer academic support; and general adult support—in addition to grade at baseline, gender, age, receipt of free or reduced-price lunch, race and whether the student applied with a sibling. Family-level controls include fixed effects for the center to which the family applied, parent’s education level, household income, household composition and whether English is the primary language spoken at home. The values in the “Treatment – Control Difference” column are the proportions of youth in the treatment group who reported participating in the activities, above and beyond the proportions reported by youth in the control group.

*** $p < .001$ level of significance.

** $p < .01$ level of significance.

* $p < .05$ level of significance.

† $p < .10$ level of significance.

^a The Secondary School Admission Test (SSAT) and High School Placement Test (HSPT) are tests required for admission to many private and independent schools.

even without exposure to the program, this group of motivated students had a strong preference for academically rigorous schools.

High School–Related Activities

Although Higher Achievement did not appear to influence youth's high school priorities and preferences, the program did boost youth's engagement in a wide range of activities related to the high school application process (see Table 4 on the previous page). For example, youth in the treatment group were more likely to visit schools and to speak with students or teachers from a high school of interest. Higher Achievement also increased the likelihood that students took steps in the application process for more competitive high schools. For instance, a higher percentage of treatment students attended a mock interview, prepared for and took the admissions test, and applied for and received a scholarship, compared to youth in the control group.

Parent Involvement

We also found some evidence that Higher Achievement increases parent involvement in the application process, although this evidence is not as strong as that presented for the other experiences described above. The parents of youth in the treatment group were significantly more likely than parents of control youth (67 versus 59 percent respectively) to report that they (as opposed to their child) spent the most time on their child's high school applications. Treatment youth were also more likely than controls to indicate that their parents provided help in test preparation and applying for financial aid.²⁸

Higher Achievement strives to involve parents throughout the middle school years, but it particularly focuses on engaging them in high school placement activities as scholars approach this important transition. At the fourth-year follow-up, almost two fifths (37 percent) of parents whose children were still attending Higher Achievement reported that they spoke to program staff about their child at least once a week. Staff work with parents as a group and individually to answer questions, review each student's grades and make specific high school recommendations. This process may give parents tools they need to take a more active role in their child's applications.

Conclusions

Middle school is a key juncture in a student's academic path. Yet, there are relatively few OST programs serving middle-school-aged youth, and most have not figured out how to effectively engage these youth for more than a day or two a week (James-Burdumy et al. 2007; Grossman et al. 2002). This is mainly because this age group is very difficult to serve. Early adolescence is a time of powerful physical, cognitive and emotional changes. Peers and adults outside the home become more central to youth, and they seek more autonomy and control over their lives, including in their learning environments.

Regrettably, most middle schools are organized in ways that do not meet these emerging developmental needs. For example, public middle school classrooms are generally organized as teacher-led, whole-class instruction, giving students little control over their learning (Newman et al. 2000; Holcomb-McCoy 2007). Students also rotate between classes, making it difficult to form solid relationships with their teachers. Consequently, many students—even the very able—become disengaged from learning during the middle school years. By contrast, Higher Achievement's Afterschool and Summer Academies center around small-group instruction led by volunteer mentors (during the school year) and trained teachers (during the summer). This setting makes learning an active process, in which students can exert more control and provide more input. The small-group setting also fosters relationships between students and their mentors and teachers.

This evaluation provides rigorous evidence that intensive OST programs like Higher Achievement can produce results. The program successfully engages middle school youth and retains sizable numbers of them for multiple years. Higher Achievement not only improves their academic performance, but also increases the odds that students will attend a private high school and decreases their likelihood of attending a weaker public magnet/charter school. The study's findings highlight a number of important lessons for policymakers, funders and OST program leaders:

Intensive OST programs can boost critical math skills. Higher Achievement improved both math and reading by the end of the second summer and school year, with gains in math persisting after four

years. And these gains are larger than those yielded in other large-scale, rigorous studies of OST programs. The impact in math is particularly important because recent work has shown that math skills in middle school and ninth grade are very predictive of success in high school, particularly graduation rates (Kieffer, Marinell 2012). Thus, OST programs that improve math skills may help put youth on a positive path that lasts well beyond the program itself.

While Higher Achievement's impacts are impressive relative to others in the OST field, they are not as large as those yielded by some whole-school models, such as KIPP schools or the Harlem Children's Zone Promise Academies. To produce these kinds of large improvements in test scores, funders and policymakers will likely need to support more comprehensive educational interventions. Our evaluation shows that programs like Higher Achievement are a good option, short of these more expensive, whole-school reforms.

Programs like Higher Achievement can help students effectively navigate the high school choice process. Perhaps even more important than Higher Achievement's academic impacts were the information and experiences it provided to students about college, careers and—most pressing—high school choice. The program offers opportunities to talk with people from different professions, to job shadow and to learn about college and college life, as well as providing concentrated support throughout the process of selecting and applying to an academically rigorous high school. Our study suggests that these activities may contribute to youth's successful matriculation at high-quality high schools that, for many, would have been out of reach without Higher Achievement.

Changing youth's high school trajectories is difficult. While the treatment students had better test scores than controls over the course of middle school, other aspects of the program likely drove the impacts around high school choice. Disadvantaged families often have inadequate information about the high school application process (Sattin-Bajaj 2009). Higher Achievement helped youth take the many needed steps to go to a competitive high school, including preparing for the high school entrance exams, attending a mock interview and applying for and receiving scholarships.

Higher Achievement also recognizes that parents are an integral part of improving youth's academic trajectories. If parents are not willing to make the commitments necessary to enable their children to attend competitive high schools, it will not happen. But engaging parents is no easy task—it is something that most programs struggle with. Higher Achievement successfully involves parents throughout middle school and increases their participation in the high school application process—efforts that likely contributed to the effects we measured.

OST programs may be most effective when taking a long-term approach. Higher Achievement represents a comprehensive, long-term investment in children's lives. Its intensive and rigorous academic environment improved scholars' academic performance—but not until after the first year of program involvement. Similarly, the decision to attend a competitive high school is not simply made in the eighth grade but rather is a culmination of experiences and choices (such as course selection) throughout the middle school years (Eccles et al. 2004). Thus, the fact that Higher Achievement is able to work with and support youth throughout middle school is probably critical to its success.

These effects may also compound over time, even after program participation ends. Many of the youth in the treatment group are now attending academically rigorous high schools better prepared than they would have been otherwise. These students (as well as those who matriculated to less competitive schools but were likewise better prepared academically) may well end up attending better colleges and ultimately having higher-paying jobs and careers. They and their parents are now familiar with a long set of choices and steps that are similar to those they will face in the college application process. Funders and policymakers who hope that OST programs can foster substantial changes in youth's trajectories may need to consider longer-term investments—like Higher Achievement—to produce benefits similar to those seen in this study.

Higher Achievement's pattern of effects highlights the importance not only of investing in long-term programs but also in designing and supporting evaluations that last multiple years. Many OST programs have undergone evaluations that span a

single year, hoping for academic impacts, and few have found them. Raising students' test scores may simply take longer than a year in most OST settings.

Final Thoughts

This study points to several important implications for policy and research. First, Higher Achievement produced these benefits for a group of highly motivated but disadvantaged youth. Perhaps the program would have yielded even bigger impacts if less motivated students—with more pressing academic needs and fewer supporting resources—were served at the same intensity.²⁹ However, less motivated students and their families might not persist in the program long enough for it to have its effects. In the end, only another impact study could determine with certainty if the program is equally (or more) effective for less motivated youth. Given the potential long-term benefits of Higher Achievement's model, this is a crucial next-step question for research.

Second, while we have been able to identify some of the elements of Higher Achievement that likely contributed to youth's gains, we do not know which are necessary and which (if any) could be streamlined without diminishing the effectiveness of the program. Future research that rigorously examines the mechanisms underlying OST program benefits—starting with some of those outlined here—would provide important guidance about how to get the greatest return on OST investments.

Higher Achievement costs about \$4,500 per scholar per year. These funds support up to 650 hours of structured activities over the school year and summer (at about \$7 per hour), led by well-trained staff who use a curriculum that mirrors and builds on what youth learn during the school day. Programming related to the high school choice process begins in early middle school and ramps up considerably as students approach and enter eighth grade. This constellation of services appears to keep students on a positive path during a critical time in their development. Other intensive academic OST programs with a similar structure and focus may yield similar results and could therefore be a viable tool for helping disadvantaged youth stay on track during the middle school years and beyond.

Endnotes

1. To enroll in the program, youth must complete an application, attend an interview alone and with their parents, and be deemed “academically motivated” by Higher Achievement staff (i.e., staff determine that the student understands the program’s requirements and is excited about getting involved). Parents are also required to attend a program orientation if their child is accepted.
2. The study uses an intent-to-treat design—the most rigorous and conservative approach available to researchers—whereby, at each follow-up, we surveyed all youth in the sample whom we could contact, including all treatment youth regardless of whether they had actually attended the program. We then grouped youth according to their *original* random assignment status. In the analysis, the outcomes of the originally assigned treatment group are compared to those of the originally assigned control group. Thus, technically, the study addresses the question of whether having access to the program affects youth outcomes, not whether program participation, per se, affects outcomes. In this way, the impacts we report likely *understate* Higher Achievement’s effects on those youth who fully participate in the program.
3. An earlier version of the program operated from 1975 to 1998 and provided some of the services included in the current program exclusively to gifted and advanced students.
4. City offices are supported by a national office in DC. In each city, one or more Achievement Centers is located in an elementary or middle school.
5. The center in Alexandria started serving youth in 2006; we began recruiting applicants to that center one year after the start of the study. DC also has one additional center that started operating in 2010, after recruitment for the study was completed. That center is not included in the evaluation.
6. These cohorts included 277, 276 and 399 youth respectively.
7. While impressive for this group of disadvantaged youth, it should be noted that students who typically matriculate to competitive public and private schools score even higher.
8. Some of the programs included in this study were short-term by design. While most OST programs encourage youth to participate for multiple years, many do not ask youth for a long-term commitment and instead structure activities as voluntary 8- to 12-week or school-year-long sessions, which youth may have the option of repeating.
9. We also conducted these analyses attempting to isolate the effects of attending Higher Achievement, rather than simply being offered the opportunity to attend the program. The pattern of effects is very similar to the intent-to-treat estimates, but the effects are slightly larger (see Linden et al. 2013).
10. These tests compared groups of youth that varied on test scores, race/ethnicity, income, gender, whether they started the program as rising fifth or sixth graders, the “ward” or area of DC in which they lived, whether the youth received free or reduced-price lunch, or the Higher Achievement center of application.
11. It is important to note in this comparison that few published studies have tracked students longer than a year. Thus, the effect sizes described in the literature typically reflect only one year of dosage, whereas the benefits yielded in this study reflect two to four years of access to the program.
12. There are a number of other studies in the literature that use random assignment. However, the vast majority have very small sample sizes—often fewer than 100 youth (Beckett et al. 2009). Chaplin and Capizzano (2006) conducted a randomized controlled study on a larger sample to estimate the effects of the Build Educated Leaders for Life (BELL) summer program on students’ reading comprehension scores. However, the control group experienced more total days of school than the treatment group. Their preferred 0.08 treatment effect estimate adjusts for the days of school received by each student. The unadjusted intent-to-treat estimates show no effect.
13. Several meta-analyses have reported larger effects on students’ standardized test scores. While some of these estimates are comparable to the estimates in our study (Lauer et al. 2006, for example), these meta-analyses (a) rely, in part, on nonexperimental studies or experimental studies that use very small samples to calculate their overall treatment effect and (b) are subject to potential problems associated with aggregating results across studies, including, for instance, publication bias. That is, studies are often published only when they yield significant findings; thus, estimates that aggregate across these studies do not adjust for the many studies that have no findings, and, for that reason, these estimates are likely somewhat inflated.
14. One might also suspect that the decay from the second-year to the fourth-year follow-up was related to the fact that at the latter time point the ninth graders in the sample (i.e., those who started the program as rising sixth graders) no longer had access to the program’s resources and support. If this were the case, then we would expect to see bigger treatment effects for eighth relative to ninth graders at the fourth-year follow-up, because the eighth graders still had access to Higher Achievement. However, there were no significant differences between the reading impacts experienced by the eighth and ninth graders.
15. When they completed their survey in the spring, some parents of eighth graders did not know which high school their child would attend. A small number, for example, had not heard back from all of the schools they had applied to. We followed up with these families again over the summer to get their final decision.

16. Students have the option of enrolling in a “neighborhood school” that is located in a neighborhood other than their own, if that school has an available slot.
17. Only the summer of 2010 was examined in these analyses—the second or third summer after youth’s enrollment.
18. At the first- and second-year follow-ups, these analyses include all youth. However, for the fourth-year follow-up, we include only students entering the study prior to the fifth grade to restrict the sample to those still eligible to attend Higher Achievement.
19. None of the controls attended Higher Achievement.
20. These assessments included all students who were eligible for the 2010 Summer Academy—i.e., all students in Cohort 3 and those in Cohort 2 who had applied as rising fifth graders (those who had applied as sixth graders were no longer in middle school and thus no longer had access to Higher Achievement programming by the summer of 2010).
21. We examined these changes over the course of only one summer, after scholars had participated in the program for two or three years. We did not test whether the program fosters relative improvements over the course of earlier (or later) summers of program involvement.
22. Except for self-perceptions of academic abilities, which showed a positive treatment effect in the second year, all of the estimates are small and not statistically significant after the first year.
23. Not all treatment youth experienced this dip in attitudes after the first year of the program. It was driven primarily by the students entering the study as rising fifth (as opposed to rising sixth) graders. The academic attitudes of the fifth grade treatments fell sharply after their first year in the program—unlike their fifth grade control peers, who did not experience this decline. This decline is similar to what the later-enrolling youth in both the treatment and control groups experienced during their sixth grade year—attitudes in both groups fell during the sixth grade—which is consistent with a dip that most students experience upon entering middle school (Eccles, Midgley 1989). Unlike the fifth grade treatments, fifth grade control students experienced improvements in their attitudes over the last year of elementary school. They then declined sharply in their first year of middle school. By placing fifth grade students in a more competitive environment, the Higher Achievement program seems to have caused the middle school decline a year before these students would otherwise have experienced it.
24. We hypothesized that in the fourth year, youth who were now in more academically rigorous high schools may have been exposed to more strict rules than those they experienced when attending their previous public middle school. Thus, these treatment youth may have reported more school-related misbehavior (e.g., visits to the principal’s office) than controls who were less likely to attend these schools. However, we did not find evidence to support this hypothesis: When we conducted the analyses separately for the younger and older youth, we did not see differences depending on whether the youth were in their last year of middle school or first year of high school.
25. Students could select three options for where they met their close friends: school, family (e.g., cousin or sibling) or another place. When they responded with “another place,” they were asked to specify the location. “An OST program” and “Higher Achievement” were self-reported answers tabulated from the last category. For Higher Achievement, we checked students’ responses by matching the names of listed friends to the students in our sample.
26. We found only one difference between treatments and controls in these four measures across the three time points: At the last follow-up, treatment youth were more likely to report that they had talked with peers about a math or science problem outside of school (85 percent of treatments versus 72 percent of controls reported this activity).
27. The number of scholars in each group decreased over time as the study progressed—from four or five in the first couple of years to two or three later in the study.
28. Although treatments were more likely to rate their parents as engaging in these two activities, there were eight other application activities that showed no difference between treatments and controls, and an aggregate measure across all of these activities was not significant. Thus, the differences we estimated between these two activities may have been significant by chance alone.
29. In fact, Higher Achievement’s new strategic plan emphasizes finding ways to serve less motivated students.

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