



After-School Programs and High School Success

**Analysis of Post-Program Educational Patterns
of Former Middle-Grades TASC Participants**

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Summary

This study, funded by the C.S. Mott Foundation as part of its national research agenda in the after-school field, examined the high school performance of New York City students who participated in after-school programs sponsored by The After-School Corporation (TASC) while enrolled in the middle grades during school years 1998-99 through 2001-02. The study examined whether youth experiences in TASC programs were associated with measurable achievements during the high-school years, when compared to achievements of similar students who did not participate in a TASC program.

The analysis addressed the following question:

Does participation in a TASC program in the middle grades promote the development of protective factors that result in higher levels of school engagement and academic progress and in lower levels of delinquent behavior than are characteristic of similar students who do not participate in TASC programs?

The study relied on program-participation data contained in the TASC evaluation database, along with demographic and educational performance data maintained in the central databases of the New York City Department of Education (DOE) for the 1998-99 through 2004-05 school years. Analyses examined the high school engagement and performance of former middle-grades TASC participants, compared to two matched comparison groups of same-age students: (1) matched students who attended a middle school that hosted a TASC program but who did not participate in the after-school program, and (2) matched students who attended similar New York City middle-grades schools that did not have TASC programs. The study also explored the feasibility of linking TASC participation data to New York City data on delinquency.

Overall, the study found positive outcomes in **high school attendance** and **credit accumulation** for former middle-grades TASC participants, compared to both matched comparison groups. Key findings are summarized below:

- Middle-grades TASC participants had an average ninth-grade attendance rate of 91 percent, which was significantly higher than the 87 percent attendance rate of matched nonparticipants from TASC middle schools. On average, participants attended ninth grade for almost seven days more than these matched nonparticipants (effect size=0.26).

The same general results were found using the study's other comparison group, which consisted of matched students who attended similar middle schools with no TASC program. Former TASC participants had higher average daily attendance in the ninth grade than did those matched students (91 percent, compared to 89 percent, effect size=0.16), translating to an additional four days of ninth-grade instruction for TASC participants.

Former participants attended tenth grade at a rate of 89 percent, compared to 86 percent for matched nonparticipants from TASC middle schools (effect size=0.18), a difference of approximately six school days.

- Former participants earned more high school credits in the ninth grade than did matched nonparticipants from TASC middle schools (10.2, compared to 9.7 credits, effect size=0.12).

These findings support other research indicating that participation in a middle-grades after-school program is associated with positive outcomes for youth, particularly as measured by greater attachment to school. This emerging trend warrants further investigation of the ways in which after-school participation contributes to positive long-term outcomes for youth, including a reduction in delinquency and criminal behaviors. However, the absence of coordination across youth-level educational and juvenile-justice data in New York City makes a study of possible links between after-school participation and rates of crime and delinquency logistically challenging, if not impossible. To explore the relationship between delinquency and after-school programming from a different direction, the current report briefly describes three possible studies: (1) a study of the effects of the availability of high-quality after-school programming on communities and schools; (2) a study of youth attitudes, after-school engagement, and high-risk behaviors; and (3) a study of after-school programming targeted at delinquent youth, examining the processes through which after-school participation affects their behaviors and motivations.

Context for This Analysis

Program evaluations and other studies, including the multi-year TASC evaluation (Reisner, White, Russell, & Birmingham, 2004), have examined the effects of after-school programs on children and youth. These studies suggest that after-school participation at certain threshold levels is associated with positive short-term outcomes for participants. The studies have generally not been designed to trace longer-term outcomes for participant populations. However, evidence from several sources suggests that high-quality after-school programming in the early and middle grades is associated with positive student outcomes in the high school years.

The present study examined the high school performance of New York City students who participated in TASC after-school programs in grades 6, 7, and/or 8. The study was grounded in a theory that the personal growth promoted in well-designed after-school programs increases participants' attachment to school and their capacity to avoid risky behaviors, especially for those participants who attend after-school programs on a regular basis. The study examined whether after-school program experiences resulted in protective factors that encouraged measurable achievements during high school. The study sought to quantify the relationship of middle-grades after-school experiences with high school behaviors through comparison of former participants' behaviors with those of similar students who did not participate in a TASC program.

The analysis addressed the following question:

Does participation in a TASC program in the middle grades promote the development of protective factors that result in higher levels of school engagement and academic progress and in lower levels of delinquent behavior than are characteristic of similar students who do not participate in TASC programs?

Among the findings of the multi-year evaluation of TASC programs was the association between program participation and improved school attendance, especially for students in the middle grades (Reisner et al., 2004). This finding was clear for one-year participants in grades 5-8 and even more pronounced for two-year participants at these grade levels. For example, the difference in the attendance gain of TASC participants and similar nonparticipants measured from seventh to eighth grade was the equivalent of a net gain of almost three school days. This finding was important for many reasons, including the fact that middle-grades attendance patterns are strong predictors of students' later likelihood of either dropping out or successfully completing high school, according to many educators.

The TASC evaluation also found evidence that participation in after-school activities was linked to improvements in academic performance, especially in mathematics and for students who participated regularly in TASC programming over two consecutive years. Comparable findings in reading and English language arts were not apparent.

Several recent studies provide evidence explaining how after-school programs might be stimulating positive youth outcomes among middle-grades students. For example, a study of promising after-school programs found that middle-school youth who attended high-quality after-school programs (alone or in combination with other structured activities) reported more favorable change patterns regarding misconduct and substance use than did students with less exposure to structured, adult-supervised time after school (Vandell, Pierce, Brown, Lee, Bolt, Dadisman, Pechman, & Reisner, 2006). Similarly, a study focused on delinquency found that middle-grades students' participation in after-school programs reduced their incidence of delinquent behavior by strengthening participants' intentions not to use drugs and increasing their associations with positive peers (Gottfredson, Gerstenblith, Soule, Womer, & Lu, 2004).

Consistent with these findings, evidence from research involving youth who participated in LA's BEST, a city-wide after-school program in Los Angeles that is similar to TASC, found that the short-term benefits of after-school participation were maintained into high school. In particular, students who had participated in LA's BEST posted higher academic achievement and lower engagement in crime, based on a two-part comparison design similar to the design used in the current study (Goldsmidt, Huang, & Chinen, 2007).

Study Design and Methods

This study of former middle-grades TASC participants' educational performance in their high school years relied on data available in the TASC evaluation database and also data maintained in DOE central databases. No new data were collected directly from youth or

programs. The study focused on students who were enrolled in the middle grades in New York City public schools anytime during the 1998-99 through 2001-02 school years, the first four years of TASC operations. To examine students' academic progress into their high school years, the study obtained data on students' demographic characteristics, school attendance, credit accrual, and test scores for all years from 1998-99 through 2004-05. The student cohorts studied are summarized in Exhibit 1.

Exhibit 1
Study Cohorts and Years of DOE Student-Level Data

| School Year | Grade Levels | | | | | |
|-----------------------|--------------|----|----|----|----|----|
| 1998-99 (TASC Year 1) | | | | 6 | 7 | 8 |
| 1999-00 (TASC Year 2) | | | 6 | 7 | 8 | 9 |
| 2000-01 (TASC Year 3) | | 6 | 7 | 8 | 9 | 10 |
| 2001-02 (TASC Year 4) | 6 | 7 | 8 | 9 | 10 | 11 |
| 2002-03 | 7 | 8 | 9 | 10 | 11 | 12 |
| 2003-04 | 8 | 9 | 10 | 11 | 12 | -- |
| 2004-05 | 9 | 10 | 11 | 12 | -- | -- |

Shaded cells indicate the cohorts of students selected for inclusion in the study in each school year.

Exhibit reads: Researchers obtained high school data through grade 12 for students who were in grades 6-8 in 1998-99. For students who were in grade 6 in 2001-02, the study obtained data through grade 9.

Study Groups

As described below, using student-level data from the DOE, the study compared the high school enrollment, attendance, and academic progress of former middle-grades TASC participants with the high school performance of two matched comparison groups of same-age students. The first comparison group was drawn from the population of students who attended a middle school that hosted a TASC program but did not participate in the after-school program. The second group consisted of students drawn from similar middle-grades schools in New York City that did not have TASC after-school programs.

Participant group. Using the participant database developed for the longitudinal TASC evaluation, the present study identified students in grades 6-8 who attended a middle-grades after-school program on an active basis (for at least 60 days and for at least 60 percent of the possible days) in at least one year from 1998-99 through 2001-02. The analysis was limited to those students for whom DOE high school data were available, indicating that they remained in the New York City public school system through at least their ninth-grade year. This selection process resulted in a population of 2,390 former middle-grades participants from 28 TASC programs throughout New York City.

Matched nonparticipants from TASC middle schools. Using the TASC evaluation database, the study also identified 12,464 students who attended grades 6-8 in the same 28 TASC host schools from 1998-99 to 2001-02 but never participated in the TASC after-school program. This sample was also limited to those students who attended a New York City high school for at least one year before 2004-05. Researchers then employed a propensity-matching technique to identify the nonparticipants who were most similar to the former TASC participants. Propensity matching selected the closest match for each participating student using an automated procedure that minimized the overall “distance” between students in the participant and matched nonparticipant groups on key demographic variables, including race/ethnicity, gender, and English Language Learner (ELL) status.

This process yielded a sample of very similar matched students corresponding to 1,933 TASC middle-school participants, as illustrated in Exhibit 2. Participants and nonparticipants from the TASC middle schools were closely matched on each of the demographic variables included in propensity matching, with no statistically significant differences between groups on those measures.

Exhibit 2
Closeness of Student-Level Matches of Former TASC Middle-Grades Participants and Nonparticipants from TASC Middle Schools

| Student Characteristics | Group Means | | Pooled SD | Standardized Difference | T-test Results | |
|--------------------------|---------------------------|------------------------------|-----------|-------------------------|----------------|---------|
| | Participants (n=1,933) | Nonparticipants (n=1,933) | | | t-value | p-value |
| Gender (percent female) | 51.3 | 51.3 | 50.0 | 0.00 | 0.00 | 1.00 |
| Percent Native American | 0.3 | 0.1 | 4.3 | 0.04 | 1.14 | 0.26 |
| Percent Asian | 7.2 | 8.2 | 26.6 | -0.04 | -1.15 | 0.25 |
| Percent Hispanic | 45.1 | 45.6 | 49.8 | -0.01 | -0.29 | 0.77 |
| Percent African American | 42.2 | 40.5 | 49.3 | 0.03 | 1.08 | 0.28 |
| Percent White | 5.1 | 5.5 | 22.4 | -0.02 | -0.50 | 0.62 |
| Percent ELL | 9.9 | 8.4 | 28.9 | 0.05 | 1.62 | 0.11 |
| Percent FRPL | 86.8 | 86.2 | 34.2 | 0.02 | 0.52 | 0.61 |

Exhibit reads: Fifty-one percent of former middle-grades TASC participants in the sample were female, as were 51 percent of members of the nonparticipant sample.

Because middle-grades TASC participation could be expected to have an effect on measures of middle-grades educational performance, the study did not control for school achievement or attendance in the matching procedure. As a result, on average, participants had a higher school attendance rate in the eighth grade than did nonparticipants (93 percent compared to 90 percent). This could be either a reflection of a self-selection bias, with middle-grades students who were more engaged in school also more likely to participate in an after-school program, or the reflection of a positive effect of TASC participation on the student attitudes and behaviors that determine school attendance rates. Participants and matched nonparticipants from the same schools did not differ significantly in terms of their eighth-grade reading or math scores.

Matched nonparticipants from non-TASC schools. To address the selection bias that might be introduced by the use of comparison students who had the opportunity to enroll in a TASC program in their schools but did not, the study also compared TASC after-school participants to youth with similar characteristics who attended similar middle schools that did not host TASC programs during the designated time period.¹

Selection of this comparison sample employed a two-stage propensity matching approach. In the first stage, for each TASC host school, researchers identified two very similar New York City middle schools that did not have TASC after-school programs available to their students during the 1998-99 to 2001-02 period. Propensity matching selected the two closest school matches for each host school, based on key school-level demographic and performance variables. Exhibit 3 describes the results of the school-level propensity matching process. Schools were matched exactly on the span of grades served, and there were no significant differences between the TASC host schools and comparison schools on key demographic or educational features. Researchers received DOE data on 38,334 students who attended these 56 matched comparison schools and continued on to enroll in a New York City high school during the study period.

Exhibit 3

Closeness of School-Level Matches of TASC Host Schools with Similar Schools

| Student Characteristics | Group Means | | Pooled SD | Standardized Difference | T-test Results | |
|------------------------------|----------------------------|-----------------------------|-----------|-------------------------|----------------|---------|
| | Treatment School (n=28) | Comparison School (n=56) | | | t-value | p-value |
| Enrollment | 1,128 | 957 | 419.35 | 0.39 | -1.88 | 0.63 |
| Percent at ELA level 3 or 4 | 29.2 | 31.1 | 17.73 | -0.09 | 0.45 | 0.67 |
| Percent at Math level 3 or 4 | 28.4 | 30.3 | 18.20 | -0.11 | 0.46 | 0.65 |
| Attendance rate (mean) | 91.1 | 91.5 | 2.23 | -0.22 | 0.82 | 0.42 |
| Percent Asian | 8.5 | 10.1 | 12.34 | -0.14 | 0.56 | 0.58 |
| Percent Hispanic | 39.9 | 41.1 | 25.99 | -0.14 | 0.19 | 0.85 |
| Percent African-American | 40.9 | 36.8 | 30.81 | 0.22 | -0.58 | 0.56 |
| Percent White | 10.7 | 12.0 | 16.45 | -0.08 | 0.33 | 0.74 |
| Percent Recent Immigrant | 6.6 | 5.1 | 4.12 | 0.32 | -1.53 | 0.13 |
| Percent ELL | 13.0 | 11.8 | 9.48 | 0.10 | -0.54 | 0.59 |
| Percent FRPL | 74.6 | 73.2 | 22.41 | 0.06 | -0.27 | 0.79 |

Exhibit reads: TASC host schools had an average enrollment of 1,128 students, while matched comparison schools had an average enrollment of 957. This difference was not statistically significant (p=0.63).

Data source: 2002 DOE School Report Cards

In the second matching stage, researchers identified the students from the matched schools who were most similar to the former middle-grades TASC participants, based on

¹ Data are not reliably available in the DOE database to determine whether comparison students (or former TASC participants, for that matter) attended other, non-TASC after-school programs. However, during the 1998-2002 period, TASC was by far the largest sponsor of daily after-school programming in New York City.

demographic characteristics, in a matching process that was parallel to that used with the nonparticipant group from the TASC middle schools. This yielded a sample of matched students for 2,208 former TASC middle-grades participants, as illustrated in Exhibit 4. Similar to the pattern noted with the matched nonparticipant group from TASC middle schools, former TASC participants had a slightly higher school attendance rate in the eighth grade than did matched students from similar non-TASC middle schools (93 percent, compared to 92 percent), although they did not differ significantly in terms of eighth-grade reading or math scores.

Exhibit 4
Closeness of Student-Level Matches of Former TASC Middle-Grades Participants and Students from Similar Non-TASC Middle Schools

| Student Characteristics | Group Means | | Pooled SD | Standardized Difference | T-test Results | |
|-------------------------|---------------------------|------------------------------|-----------|-------------------------|----------------|---------|
| | Participants (n=2,208) | Nonparticipants (n=2,208) | | | t-value | p-value |
| Gender (percent female) | 52.0 | 51.1 | 50.0 | 0.02 | 0.60 | 0.55 |
| Percent Non-White* | 92.9 | 92.6 | 25.9 | -0.01 | -0.41 | 0.68 |
| Percent ELL | 9.2 | 8.4 | 28.3 | 0.03 | 1.01 | 0.31 |
| Percent FRPL | 83.8 | 83.3 | 37.0 | 0.01 | 0.49 | 0.63 |

*To improve the overall matches, students were matched using a simplified “White/Non-White” race variable, not on specific race variables.

Exhibit reads: Fifty-two percent of former middle-grades TASC participants in the sample were female, compared to 51 percent of matched comparison students. This difference was not statistically significant (p=0.55).

Analysis Approach

Analyses examined indicators of high school engagement and educational performance among former middle-grades TASC participants, compared to matched nonparticipants from both TASC host middle schools and from similar non-TASC middle schools, in order to identify patterns of benefit associated with participation in after-school programs in the middle grades. For engagement in school, indicators included school attendance rates, persistence in school, and rates of suspension. For educational performance, indicators included credits earned in each year of high school, the number of Regents tests passed, progress towards on-time grade promotion, and diploma status.

Analyses did not control for variations in the content or quality of programming in the TASC after-school programs attended by the former middle-grades participants. However, all programs followed the TASC model of after-school programming. In the TASC model, after-school services are provided through a partnership between a public school and a local nonprofit organization, under the direction of a full-time site coordinator. All students enrolled in the school are eligible to participate in the TASC program, which runs from the end of each school day to approximately 6 p.m. and is intended to supplement the learning experiences of the regular school day through activities that may include academic enrichment, homework assistance, the arts, and recreation.

All analyses tested the difference in means between the two groups, noting whether the difference was statistically significant at the $p < 0.05$ level. For each measure reported, the study also computed an effect size to describe the standardized magnitude of the difference. For continuous variables, effect size was computed as measured by Cohen's d (the difference in means divided by the pooled standard deviation); for dichotomous variables, the effect size was computed using an arcsine transformation (Lipsey & Wilson, 2001). There is no single accepted standard for interpreting an effect size, and the current custom is to consider the effect size in light of previous research. After-school studies generally yield small effect sizes on youth outcomes. In this study, an effect size of 0.10 or higher is considered meaningful (and is bolded in exhibits). Effect sizes below this threshold, even if statistically significant, are deemed not to represent meaningful effects.

The parallel comparisons of participants to matched nonparticipants from TASC middle schools and from similar non-TASC schools strengthen the interpretation of findings. Findings of positive associations between middle-grades TASC participants and high school outcomes are strongest when both comparisons reveal differences that are statistically significant, in the same direction, and of similar magnitude.

Evidence of Greater Engagement in High School

Researchers examined the high school attendance, school persistence, and suspension rates of former TASC participants and nonparticipants from TASC host schools and from similar non-TASC middle schools to measure engagement in education.

School Attendance in High School

The longitudinal TASC evaluation (Reisner et al., 2004) found that the school-attendance advantage associated with active TASC participation through the middle grades was particularly noteworthy. School attendance rates typically decline as students age, with a clear decline in school attendance in the middle grades. However, the TASC evaluation found that the school attendance rates of TASC participants declined significantly less than that of nonparticipants between the fifth and seventh grades. Further, school attendance rates increased between seventh and eighth grades for participants, while they declined for nonparticipants.

Given these findings of the effects of after-school participation on middle-grades school attendance, researchers anticipated that former middle-grades participants would continue to demonstrate greater engagement in high school than did students who did not participate in a TASC program. In fact, analyses demonstrated that former TASC participants had higher school attendance rates in the early high school years than either matched nonparticipants from the middle schools hosting TASC programs or matched students who attended similar non-TASC middle schools.

As illustrated in Exhibits 5 and 6, former TASC participants had an average ninth-grade daily attendance rate of 91 percent, significantly higher than the 87 percent rate for

nonparticipants who had attended TASC middle schools. This difference translates into a substantial number of days of school: on average, former TASC participants attended ninth grade for almost seven days more than did matched nonparticipants from TASC middle schools, based on a 180-day school year (effect size=0.26). This pattern was also evident in the comparison of former TASC participants to students who attended similar middle schools that did not host TASC programs. In that comparison, former participants had an average daily attendance of 91 percent in the ninth grade, compared to 89 percent for matched students from non-TASC middle schools (effect size=0.16), meaning that on average participants received about four additional days of instruction in ninth grade than did comparison students. The consistency and magnitude of this finding supports the conclusion that middle-grades TASC participation is associated with greater school attendance in the ninth grade. However, the smaller effect size in the comparison of matched students from non-TASC middle schools suggests that a portion of the difference found in the comparison of nonparticipants from TASC schools may be due to self-selection.

These patterns of association between middle-grades TASC participation and high school attendance diminished in the later high-school grades, with one exception. Former participants attended tenth grade at a rate of 89 percent, compared to 86 percent for matched nonparticipants from TASC middle schools (effect size=0.18), a difference of approximately six school days. However, the tenth-grade comparison did not reveal significant differences when researchers compared former participants to matched students from similar middle schools that did not host TASC programs. There were no significant findings in analyses of eleventh- and twelfth-grade school attendance.

Exhibit 5
Average High School Daily Attendance Rates of Former Middle-Grades TASC Participants and Matched Nonparticipants from TASC Middle Schools

| Grade | Mean ADA | | p-value | Effect Size |
|----------|--------------------------|--------------------------|-------------|-------------|
| | Participants | Nonparticipants | | |
| Grade 9 | 90.8% (<i>n</i> =1,906) | 87.1% (<i>n</i> =1,915) | 0.00 | 0.26 |
| Grade 10 | 89.1% (<i>n</i> =1,257) | 85.8% (<i>n</i> =1,202) | 0.00 | 0.18 |
| Grade 11 | 90.7% (<i>n</i> =588) | 89.4% (<i>n</i> =520) | 0.17 | 0.08 |
| Grade 12 | 89.6% (<i>n</i> =213) | 89.0% (<i>n</i> =204) | 0.64 | 0.04 |

Exhibit reads: The ninth-grade average daily attendance rate of former TASC participants was 90.8 percent, compared to 87.1 percent for matched nonparticipants from TASC middle schools. This difference was statistically significant ($p=0.00$), with an effect size of 0.26.

Exhibit 6
Average High School Daily Attendance Rates of Former Middle-Grades TASC Participants and Matched Students from Non-TASC Middle Schools

| Grade | Mean ADA | | p-value | Effect Size |
|----------|--------------------------|--------------------------|-------------|-------------|
| | Participants | Nonparticipants | | |
| Grade 9 | 90.8% (<i>n</i> =2,178) | 88.6% (<i>n</i> =2,177) | 0.00 | 0.16 |
| Grade 10 | 89.0% (<i>n</i> =1,495) | 88.4% (<i>n</i> =445) | 0.29 | 0.04 |
| Grade 11 | 90.8% (<i>n</i> =746) | 90.0% (<i>n</i> =687) | 0.29 | 0.06 |
| Grade 12 | 89.9% (<i>n</i> =305) | 90.6% (<i>n</i> =298) | 0.50 | -0.06 |

Exhibit reads: The ninth-grade average daily attendance rate of former TASC participants was 90.8 percent, compared to 88.6 percent for matched students who attended non-TASC middle schools. This difference was statistically significant ($p=0.00$), with an effect size of 0.16.

Persistence in School

As another measure of school engagement, the study examined the number of years in which students continued enrollment in New York City public schools after their ninth-grade year (regardless of promotion to the next grade). Students with a greater degree of engagement in school and motivation to continue their education would be expected to persist in high school for a longer period than would less-engaged students.

Findings from the longitudinal TASC evaluation suggested that after-school programs developed participants’ sense of the importance of school. The evaluation reported that 84 percent of students responded very positively to an “importance of school” scale that incorporated student responses to items related to beliefs about the value of finishing school for success in future careers and life. In addition, students’ positive responses to this scale were strongly associated with the frequency of their self-reported after-school attendance (Reisner et al., 2004), suggesting that after-school participation may be associated with a higher rate of persistence throughout high school.

In the present study, significantly more participants remained enrolled in a New York City high school for at least two years after ninth grade than did matched nonparticipants from TASC middle schools, although the size of the effect was relatively small (89 percent compared to 86 percent, effect size=0.08). For the most part, students remained enrolled in high school at fairly similar rates with no other significant persistence-related findings in the comparisons of former middle-grades TASC participants to matched nonparticipants from either TASC host schools or similar non-TASC middle schools.

Rates of Suspension

In general, both former TASC participants and comparison students had relatively low suspension rates, consistent with district-wide patterns in New York City. (The estimated 2005 citywide high school suspension rate was approximately 6 percent.) There were no meaningful differences in the incidence of suspension of former participants and matched comparison students at any grade level.

Although former TASC participants had significantly fewer suspensions in the ninth grade than did matched comparison students, the effect sizes were negligible. In the ninth grade, 4 percent of participants had never been suspended, compared to 5 percent of matched nonparticipants from TASC middle schools (effect size=0.02). Similarly, by the end of ninth grade, 4 percent of former participants had been suspended, compared to 6 percent of matched students who had attended non-TASC middle schools (effect size=0.02). There were no significant differences in suspension rates by the end of grades 11 and 12, based on comparison with either match group.

Evidence of Improved Educational Performance

The study used several measures to assess and compare educational achievement among former TASC participants and comparison students during the high school years: (1) the rate at which students accumulated high school credits for graduation; (2) the number of Regents exams that students passed at each grade; and (3) whether students were promoted on time from one high school grade to the next. For the cohorts of students who were in the twelfth grade in New York City during or prior to the 2004-05 school year, the study also examined whether students had met the Regents requirements for a high school diploma.

The multi-year TASC evaluation reported evidence of academic benefits for participants, including better performance on mathematics exams for students in grades 3-8. In addition, the evaluation developed a scale to measure the academic benefits that students believed they gained from the TASC program experience, including participant reports of increased homework completion and confidence in academic abilities as a result of participating in the after-school program. The evaluation reported that more than half of middle-grades respondents provided very positive responses to this scale (Reisner et al., 2004). Given these findings, the study anticipated small differences in high school performance between former middle-grades TASC participants and comparison students.

Credits Earned Toward Graduation

Starting with the class of students who first entered ninth grade during the 2001-02 school year, students were required to earn at least 44 credits in order to graduate. Students who entered the ninth grade prior to the 2001-02 school year were required to earn 41 credits. Students were expected to earn a minimum of 8 high school credits in their ninth-grade year in

order to be promoted to the tenth grade, at least 20 credits to be promoted from tenth to eleventh grade, and at least 28 credits to be promoted to the twelfth grade.

As shown in Exhibits 7 and 8, former middle-grades TASC participants earned significantly more high school credits in their ninth-grade year than did matched nonparticipants from TASC middle schools (10.2 credits, compared to 9.7 credits, effect size=0.12). This trend of former middle-grades participants earning more high school credits than matched students was evident for both comparison groups, with significant, meaningful differences recorded at the ninth grade (based on comparison to matched nonparticipants from TASC schools) and eleventh grade (based on comparison to matched students from non-TASC schools), although the eleventh grade sample is small.²

Exhibit 7
High School Credits Earned by the End of Each Grade by Former Middle-Grades TASC Participants and Nonparticipants from TASC Middle Schools

| Grade | Participation Status | Average Number of Credits Earned | n | Statistical Comparison to Participants | |
|------------------------|----------------------|----------------------------------|-------|--|-------------|
| | | | | p-value | Effect Size |
| 9 th grade | Participants | 10.2 | 1,344 | 0.02 | 0.12 |
| | Nonparticipants | 9.7 | 1,238 | | |
| 10 th grade | Participants | 22.2 | 708 | 0.19 | 0.07 |
| | Nonparticipants | 21.8 | 667 | | |
| 11 th grade | Participants | 38.3 | 286 | 0.68 | -0.04 |
| | Nonparticipants | 38.5 | 240 | | |

Exhibit reads: Former TASC participants earned an average of 10.2 credits by the end of their ninth-grade year, while matched nonparticipants from TASC middle schools earned 9.7 credits. This difference was statistically significant ($p=0.02$), with an effect size of 0.12.

Performance on Regents Exams

In addition to the credit requirements, New York City students must pass state-level subject-area tests known as Regents examinations to earn a high school diploma. Students are not required to pass a certain number of Regents tests at each grade, but they must pass a certain number of Regents tests before graduation. During the period of the study (through 2004-05), two types of high school diplomas were endorsed by the state, the Regents Diploma and the Advanced Regents Diploma. Local school districts could also choose to award a Local Diploma.

² Because of data problems, researchers were unable to use information on high school credits from the 1998-99 through 2001-02 school years. Analyses of high school credits are limited to those cohorts of students who entered the ninth grade in 2002-03 or later. This limit precludes analyses of grade 12 credits, because no students in those cohorts had reached grade 12 by 2004-05.

Exhibit 8
High School Credits Earned by the End of Each Grade by Former Middle-Grades TASC Participants and Matched Students from Non-TASC Middle Schools

| Grade | Participation Status | Average Number of Credits Earned | n | Statistical Comparison to Participants | |
|------------------------|--------------------------|----------------------------------|-------|--|-------------|
| | | | | p-value | Effect Size |
| 9 th grade | Former TASC participants | 10.2 | 1,309 | 0.11 | 0.06 |
| | Nonparticipants | 10.0 | 1,317 | | |
| 10 th grade | Former TASC participants | 22.4 | 762 | 0.11 | 0.08 |
| | Nonparticipants | 21.8 | 730 | | |
| 11 th grade | Former TASC participants | 38.2 | 317 | 0.03 | 0.18 |
| | Nonparticipants | 37.1 | 288 | | |

Exhibit reads: Former TASC participants earned an average of 10.2 credits by the end of their ninth-grade year, while matched students who attended similar schools that did not host a TASC program earned 10.0 credits. This difference was not statistically significant ($p=0.11$), with an effect size of 0.06.

Students who entered the ninth grade in September 2001 or later were required to pass at least five Regents examinations. Students who passed Regents tests in English, mathematics, global history and geography, U.S. history and government, and science with a score of 55 or higher earned a Local Diploma. Passing these same five tests with a score of 65 or higher resulted in a Regents Diploma. In order to earn an Advanced Regents Diploma, students were required to pass eight Regents examinations with a score of 65 percent or higher, including two science Regents, two math Regents, and a Regents exam in a language other than English.

In general, researchers found that there were no significant differences in the number of Regents exams passed by students who had participated in TASC during their middle-grades years and matched comparison students who attended either the same host schools or similar schools. This finding of no difference was true at all grade levels, from grade 9 to grade 12.

On-Time Promotion and Graduation

Another measure of academic performance in the high school years is whether a student is promoted on schedule from one grade to the next. Researchers examined the patterns of on-time grade promotion for former middle-grades TASC participants and matched comparison students at each high school grade. Former middle-grades TASC participants were significantly more likely to be promoted on schedule from the ninth to tenth grade than were matched nonparticipants from TASC middle schools. However, this effect of participation was very small: 73 percent of former participants were promoted on time, compared to 69 percent of nonparticipants (effect size=0.05). There were no other significant differences in the rates of on-time grade promotion between former middle-grades participants and either group of comparison students at any grade level.

Finally, the study examined high school graduation rates. For the cohorts of students in the study who were expected to have completed grade 12 by the 2004-05 school year, the last year for which data were available, and who were still enrolled in the New York City school system in twelfth grade, the study examined Regents passing rates to determine students' eligibility for each of the three levels of diplomas. Researchers found no meaningful differences between former TASC participants and comparison students in terms of the percent who were eligible to receive each type of high school diploma.

Summary and Recommendations for Future Research

Overall, findings from this study suggest that active participation in a high-quality after-school program in the middle grades is associated with higher levels of school engagement and performance during the high school years. Most notably, analyses pointed to higher school attendance and more credits earned among former participants, especially in the early high school grades. On average, former TASC participants attended ninth grade six days more than comparable nonparticipants who had attended TASC middle schools and four days more than matched students from similar non-TASC middle schools. In addition, participants who participated in a TASC program in middle school on average earned more credits in ninth grade than did matched nonparticipants who attended the same middle schools.

The relative strength of findings in these areas is consistent with findings from previous studies, which found that early participation in after-school programs was associated with reduced delinquency and lower dropout rates in the high school years (Goldsmidt et al., 2007; Gottfredson et al., 2004). Given emerging evidence of the benefits of after-school participation, future studies may want to focus on the long-term effects of after-school participation on youth engagement in delinquent behaviors. For example, a compelling study might examine differences in the rates of crime and delinquency for former TASC middle-grades participants and comparison students during their high school years, building on analyses of differences in educational performance and engagement presented in this report. However, the feasibility of engaging in such a study is limited by the ability of researchers to connect after-school participation to records of crime and delinquency, including challenges in obtaining informed parental consent to access those records.

To explore the possibility of such analyses, this study investigated the feasibility of collecting and analyzing data to examine the effects of participating in New York City after-school programs. The New York City DOE Office of School Intervention and Development collects and reports incident data for crimes that occur in schools. These data are organized in three categories: major crimes (grand larceny, robbery, felony assault), minor crimes (possession of controlled substances or weapons, reckless endangerment, petit larceny), and non-criminal incidents (disorderly conduct, harassment, loitering). However, the data are not currently tracked at the student level but rather at the building (or "location") level, minimizing their utility for a study of associations between a youth's after-school participation status and engagement in delinquent behaviors.

In addition, the New York City Police Department (NYPD) and the City's Department of Juvenile Justice (DJJ) each collect data on crimes committed by youth outside of the school day and away from school grounds. However, these data are not currently linked to DOE student records or records of after-school participation. Officials also noted that even if a data-sharing agreement were obtained, it would be difficult to match the crime and delinquency data to other data sources about students enrolled in the public schools because names, birthdates, and other identifying information are often incomplete in the NYPD and DJJ data.

The current lack of coordination across youth-level educational and juvenile-justice data in New York City makes a potential study of youth-level links between after-school participation and rates of crime and delinquency logistically challenging, if not impossible. However, the available data present an opportunity to examine how communities—both school communities and neighborhoods—are affected by the availability of out-of-school time opportunities. Three possible studies are described below.

Study of community-level outcomes. Using the school incident data collected by the DOE, it would be possible to compare the prevalence of delinquent behavior in schools hosting after-school programs and schools that do not offer after-school services, controlling for variation in after-school enrollment and participation rates and for baseline student characteristics. Groups such as the Citizen's Committee for Children of New York collect and report on youth data in each of New York City's 59 community districts. These data include all youth and juvenile criminal arrests in community districts, permitting possible analyses of the relationship between the availability of after-school services and youth delinquency within a community district.

Study of self-reported youth behaviors. Researchers could consider collecting survey data from New York City youth who participated in middle-grades after-school programs and from a group of comparable students, regarding their participation in and attitudes toward risky and criminal behaviors. These self-reported data could be more easily linked to individual students and their after-school participation records than could data collected by other organizations and agencies. However, due to the nature of the anticipated survey items, gaining approval for the study could prove challenging. Other research teams have set a precedent for successfully collecting such data, however. For example, the National Center for Victims of Crime surveyed youth in Boys & Girls Clubs programs (Whitman & Davis, 2007).

Study of programs targeting delinquent youth. Finally, a study could focus on out-of-school time programs that are intentionally designed to assist students who are already involved in the juvenile justice system and that aim to prevent recidivism. Conducting this research with organizations that provide services to youth who have previously been involved in the juvenile-justice system could facilitate a deeper understanding of youths' behavior and attitudes towards delinquency. For example, in New York City, the Children's Aid Society and CASES (Center for Alternative Sentencing and Employment Services) each operate programs that work with youth who have been involved in the justice system to help them successfully reenter their communities.

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