

# The Talent Development High School Model

## Context, Components, and Initial Impacts on Ninth-Grade Students' Engagement and Performance

June 2004

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### Technical Resources



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Unit 1:  
Analytic Appendix

Unit 2:  
Supplementary Tables

- a. Impacts for All Ninth-Grade Students
- b. Impacts for First-Time Ninth-Grade Students
- c. Impacts for Repeating Ninth-Grade Students

**\*Click the above links to access each unit**



**Unit 1**

**Analytic Appendix**

## **Introduction**

This appendix outlines the analytic approach used by MDRC to estimate the Talent Development High School model's impact on student engagement and performance. Impact findings are from Talent Development's first three years of implementation in a large, urban school district. The full report, which discusses the findings in detail and describes the components of Talent Development and the context in which it operates, is available online at this Web site or from MDRC as a printed document.

Talent Development is a comprehensive reform model for large secondary schools that face serious problems with student attendance, discipline, achievement scores, and dropout rates. The model calls for specific changes in school organization and curricula with the goals of establishing a strong, positive school climate for learning; promoting high standards for English and mathematics coursework for all students; and providing professional development systems to support implementation of recommended reforms. Each of these changes is aimed specifically at enhancing student attendance in school, improving measurable student learning, and keeping students on track toward high school graduation.

The impact analysis for this report focuses on the use of the model in high schools and more specifically on engagement and performance outcomes for ninth-grade students. The three outcomes that are examined are the ones likely to be most relevant in the early phases of Talent Development's implementation: daily attendance, credits earned, and promotion rates. The analytic approach used to measure the model's impact on these outcomes can best be described as a comparative interrupted time series design.<sup>1</sup>

Before detailing the steps of the design, it is important to distinguish between this study's measures of program outcomes and its measures of program impacts. The term "outcomes" here refers to the grade level, course credits earned, attendance rate, or behavior of individual students or groups of students at various points during the period under study. The term "impacts" here refers to Talent Development's effects on an outcome.

### **Constructing a Counterfactual**

In this study, the average outcome levels (or even year-to-year changes in outcomes) for students in the Talent Development schools provide potentially misleading indications of Talent Development's impacts. Previous research has shown that students within a school or set of

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<sup>1</sup>For further discussion about using an interrupted time series analysis to measure impacts of whole school reform, see Bloom (2003) and Snipes (2003).

schools may improve from year to year or differ from other students for reasons not necessarily related to a special intervention like Talent Development. The ideal research situation would allow for an absolutely reliable estimate of the student performance levels that would have been observed in the absence of the intervention and that could be compared with actual student performance — that is, it would allow for a counterfactual. Random assignment is the most reliable basis from which to construct estimates of a counterfactual. However, since random assignment was not possible for this evaluation, the comparative interrupted time series analysis attempted to construct the best counterfactual possible short of random assignment and to estimate the true impact of Talent Development.

To this end, it was necessary to weigh the experiences of a group of students who were exposed to Talent Development against those of a comparable group of students who were not. The more comparable the two groups prior to the introduction of Talent Development, the more likely it is that later differences can be attributed to the program. Moreover, using this kind of comparison makes it possible to account for factors other than Talent Development that may have caused a change or difference in student engagement and performance.

### **The Logic of the Comparative Interrupted Time Series Design**

The comparative interrupted time series design consists of an interrupted time series analysis and a comparison school analysis, each of which builds on the strengths of the other and addresses the other's potential limitations. Together, the two analyses construct a counterfactual for this evaluation. Specifically, the interrupted time series assesses the extent to which measures of engagement and performance for students in Talent Development schools differ from measures of engagement and performance for similar students in the same schools prior to Talent Development implementation. The school comparison looks at Talent Development schools versus non-Talent Development schools (which are similar high schools in the same district that are not implementing the reform model).

The first analysis provides an indication of whether participating high schools experience a deviation from their historical patterns in student outcomes coincident with the introduction of Talent Development. The projection of each high school's recent history acts as the counterfactual, and it is a particularly good counterfactual because, in the absence of the reform, many aspects of the schools would be expected to stay the same (for example, no major changes would be expected in students, faculty, school cultures, neighborhoods, or physical plants). Using a historical pattern as a counterfactual has the potential to control for both measurable and unmeasurable characteristics of a given school.

However, the deviation from the baseline alone may not necessarily reflect the impact of Talent Development. Similar deviations from historical patterns could have been caused by

district-wide policies or interventions that occurred at about the same time as Talent Development implementation. For example, while Talent Development scaled up, the schools in the district under study changed course promotion requirements.<sup>2</sup> Such a change could cause positive deviations from baseline averages of course credits earned at high schools in the district. An interrupted time series design would ascribe this improvement to Talent Development, but the reform model may have caused some, all, or none of the change in credits earned.

The second analysis in the comparative interrupted time series design (the comparison between Talent Development and Non-Talent Development schools) helps to account for other factors in the broader school district that may influence school functioning and student engagement and performance. For this part of the analysis, Talent Development schools are matched with sets of comparison schools that are similar on several dimensions, including racial composition and promotion rates of ninth-grade students, average test scores, and attendance rates. The Talent Development and comparison schools are all nonselective, comprehensive high schools in the same large, urban district. Measures of student achievement and engagement at the comparison schools are a good — but not perfect — indication of what might have been observed in Talent Development schools in the absence of the intervention.

It should be noted, however, that differences between the Talent Development schools in the past and present, and between the Talent Development schools and the comparison schools, do not necessarily reflect the actual impact of Talent Development, because some differences could be an artifact of differences in the prior trends in student engagement and performance. For example, test scores for students in Talent Development schools may actually have been lower than for students in non-Talent Development schools, and they might have improved only marginally after Talent Development began. At the same time, test scores for students attending similar non-Talent Development schools in the district may actually have been declining over the same period. In such an instance, Talent Development would have a positive impact by preventing test scores from dropping rather than by improving the overall average. This could be observed only by comparing an interrupted time series for both Talent Development and non-Talent Development comparison schools.

The comparative interrupted time series analysis makes this comparison by estimating the deviations from historical patterns for the Talent Development schools and subtracting from these the deviations from historical patterns for similar non-Talent Development schools during the same period. The differences between these deviations constitute impacts in student outcomes. When combined with regression analysis to control for differences in individual student

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<sup>2</sup>In order to preserve the anonymity of the subjects in this study, this appendix refers to the participating school district as “the district” and uses pseudonyms for individual schools.

background characteristics and prior school experiences, the approach isolates the unique impact Talent Development has on student engagement and performance.

It should be noted, however, that the comparative interrupted time series approach carries with it the limitations that are present in all quasi-experimental designs. In this case, projection of a baseline average for a given school may not be a reliable predictor of future student outcomes. Also, finding comparison schools for the Talent Development schools is limited to observable characteristics of the student body and may miss important factors that affect student outcome trajectories. In addition, multiple-regression techniques control for compositional changes in measurable student characteristics, but there may be changes in unmeasurable student characteristics that correlate with student outcomes. Despite these limitations, using the comparative interrupted time series approach to pool impacts estimates over several schools provides the best estimate of the true impact of Talent Development in high schools in the district.

The primary sources of data for this analysis were individual students' school records, which were obtained from the district. Table 1 provides a list of the types of data that were obtained and the school years and grade levels for which they were available. In general, administrative, attendance, and course-detail information is available for all high school students in the district from the 1995-1996 school year through the 2001-2002 school year. Table 2 gives a brief overview of the types of information included in these data sets. Table 3 defines several key outcomes included in the analysis.

The rest of this appendix will provide a step-by-step description of the analyses. The following section details the steps that make up the interrupted time series approach, including estimating deviations from baseline, controlling for compositional shifts, and accounting for cohort effects. The section after that describes the comparison school approach, including selecting comparison schools and estimating their deviations from baseline. The final section describes estimating impacts and pooling estimates across schools. To provide a concrete example in support of the descriptions, this appendix refers throughout to the ninth-grade outcome of earning one or more math credits.

## **Interrupted Time Series Approach**

### **Estimating Deviations from Baseline**

For this evaluation, outcomes for students enrolled in a given school prior to Talent Development's implementation were compared with outcomes for students enrolled in the same school during the years after implementation began. For most measures of student engagement and performance, the analysis focuses on the three years prior to implementation and the three

**Talent Development Evaluation**  
**Analytic Appendix**  
**Table 1**  
**Data Sources and Availability,**  
**by School Year and Grade Level**

Data Source	School Year										
	1991-1992	1992-1993	1993-1994	1994-1995	1995-1996	1996-1997	1997-1998	1998-1999	1999-2000	2000-2001	2001-2002
Administrative records					9-12	6-12	6-12	6-12	6-12	6-12	6-12
Attendance records					9-12	6-8	6-12	6-12	6-12 <sup>a</sup>	6-12 <sup>a</sup>	6-12
Course-detail records					6-12	6-12	6-12	6-12	6-12	6-12	6-12
Test scores											
CTBS	1-8	1-8	1-8	4-8 <sup>b</sup>							
SAT-9					2-4, 6-8, 11	2-4, 6-8, 11	2-4, 7-8	2-4, 7-8	2-4, 7-8, 10-11	3, 4, 7, 8	3, 4, 7, 10
SSA					5, 8, 11	5, 8, 11	5, 8, 11	5, 8, 11	5, 8, 11	5, 8, 11	5, 8, 11

SOURCE: Individual students' school records from a large, urban school district.

NOTES: Blank spaces indicate that no records are available for those years.

Administrative records include information on students' race; gender; birth date; and final school-enrollment status for the year, including withdrawal and dropout status and number of suspensions.

Attendance records include information on the number of days a student is present and absent for each marking period. Unless otherwise noted, this sample includes students who attended at least one day in any of the marking periods.

Course-detail records include information on credits attempted, credits earned, grades, and absences for each course in which a student was enrolled during the year. Unless otherwise noted, this sample includes students who were enrolled in at least one course during the year, according to the course-detail records.

Test scores may not be available for every student.

Comprehensive Test of Basic Skills (CTBS) records include test scores for reading, math, science, and social studies.

Stanford Achievement Test, Ninth Edition (SAT-9) records include test scores for reading, math, problem solving, procedures, and science.

State Standards Assessment (SSA) records include test scores for reading and math.

<sup>a</sup>Attendance records for years 1999-2000 and 2000-2001 include only students who were present for at least one day in the last marking period.

<sup>b</sup>Test scores for 1994-1995 are missing for a number of middle and high schools.

## Talent Development Evaluation

### Analytic Appendix

#### Table 2

#### Data Types and Descriptions

Data Type	Description
<b>Administrative</b>	Administrative data typically include student background information, such as birth date, race, and gender, as well as information on school enrollment status, special education classification, and English Speakers of Other Languages (ESOL) training. The administrative data are also the primary source of information about the grade level in which students were enrolled during each school year. These records were used to determine whether students were promoted from year to year or retained in grade. Typically, administrative records are available for all students in a given school level regardless of whether they entered the district after the school year began or whether they dropped out or left the district before the end of the year.
<b>Attendance</b>	Attendance data include information about the number of days a student was present or absent during a given school year. In some years, these data were provided on a quarterly basis and in other years they were provided as cumulative records. This information was used to construct an attendance rate and an absentee rate for each student in the files. Typically, the attendance files include only students who were present for at least one day during the final marking period of the year. This means that students who dropped out of school or who left the district before the start of the final marking period do not have an attendance record for this analysis.
<b>Course-detail records</b>	Course-detail records include, for each course in which a student was enrolled during a given school year, the course code number, an abbreviated name, the number of credits the student attempted, the number of credits the student earned, and the grade the student received. For each student in the file, this information was used to construct both an annual and a cumulative count of credits earned and attempted. The information was also used to calculate credits earned in particular subject areas.
<b>Test scores (nationally normed)</b>	The California Test of Basic Skills (CTBS) and the Stanford Achievement Test, Ninth Edition (SAT-9) are norm-referenced test scores, which provide information on individual student achievement relative to scores obtained from a random sample of students from across the country. SAT-9 scores in math and reading are available as Normal Curve Equivalents, National Percentiles, and Scale Scores. In general, these test scores were used in the analysis to control for student achievement prior to entering high school.
<b>Test scores (state)</b>	The State Standards Assessment (SSA) is a criterion-referenced test, which provides information on student skills and content knowledge specified by the state. SSA test scores in math and reading are available as Normal Curve Equivalents (NCEs), State Percentiles, and Scale Scores for each of these grades and the school years listed in Analytic Appendix Table 1.

**Talent Development Evaluation**

**Analytic Appendix**

**Table 3**

**Key Outcome Definitions**

<b>Outcome</b>	<b>Definition</b>
<b>Attendance rate</b>	The total number of days a student was marked present during the school year divided by the total number of days the student was listed as enrolled. These data were available consistently only for students who attended school for at least one day in the final marking period of the year. Thus, the analysis did not include students who dropped out or left the district prior to that point.
<b>Chronic absenteeism</b>	Indicates that a student had an attendance rate of 80 percent or lower for the year.
<b>Regular attendance</b>	Indicates that a student had an attendance rate of 90 percent or higher for the year.
<b>Course-taking patterns</b>	Indicators of whether a high school student earned course credits in selected subjects, including mathematics, English, and science. Other indicators, which signify credits earned in academic subjects, career-technical subjects, and other electives, are also available.
<b>Earned 4 or more credits</b>	Designation given to a high school student who was awarded credit for having passed 4 or more courses for the year. Until the 1998-1999 school year, students were required to earn 4 or more credits in order to be promoted to the next grade.
<b>Met minimum requirements for promotion</b>	Beginning in the 1998-1999 school year, minimum requirements for promotion included earning at least 5 credits during the year, with at least one of these credits in English, one in mathematics, and one in science.
<b>Promoted to the 9th grade on time</b>	Designation given to a student who was listed as a 9th-grader in a given school year in the district's administrative records and as a 10th-grader in the following school year. Note that this is not necessarily the same as indicating that a student met various criteria for promotion, such as earning the required number of course credits or completing a designated sequence. While the vast majority of students who were promoted according to the definition above did in fact meet these requirements, some students were promoted without meeting them. Some of these students may have completed some of the necessary requirements in a prior year.

years after implementation. The three years prior to implementation are referred to as the baseline period. The year of implementation and each subsequent year are referred to as follow-up years. Differences in student outcomes between the baseline and follow-up periods are referred to as deviations from the baseline.

The key feature of the interrupted time series design is to project what student engagement and performance would most likely be without Talent Development. This projection extends over one or more years after Talent Development began and is based on measures of student engagement and performance during a multiyear pre-Talent Development baseline period. For example, to project into the follow-up period students' pattern of earning one or more math credits for a given year, the analysis used the annual percentage of ninth-graders earning one or more math credits over the three baseline years. The equation below specifies the simplest form of a regression model that can be used to estimate an interrupted time series from a baseline derived from the three-year average at a single school.<sup>3</sup>

$$Y_i = A + \sum_{k=1}^K D_k FY_{ki} + e_i$$

where:

- $Y_i$  = dummy for earning one or more math credits for student  $i$
- $FY_{ki}$  = 1 if student  $i$  was a member of the cohort for follow-up year  $k$ , and 0 otherwise
- $e_i$  = a random error term for student  $i$
- $A$  = a constant term equal to the percentage of ninth-grade students earning one or more math credits during the baseline years
- $D_k$  = deviation in the percentage of ninth-grade students earning one or more math credits from the baseline average  $A$  in year  $k$  of the follow-up period (that is, the year  $k$  deviation from the baseline mean)

This equation pools data from the baseline and follow-up years and estimates both the baseline mean and the average deviation from this mean for each year of the follow-up period

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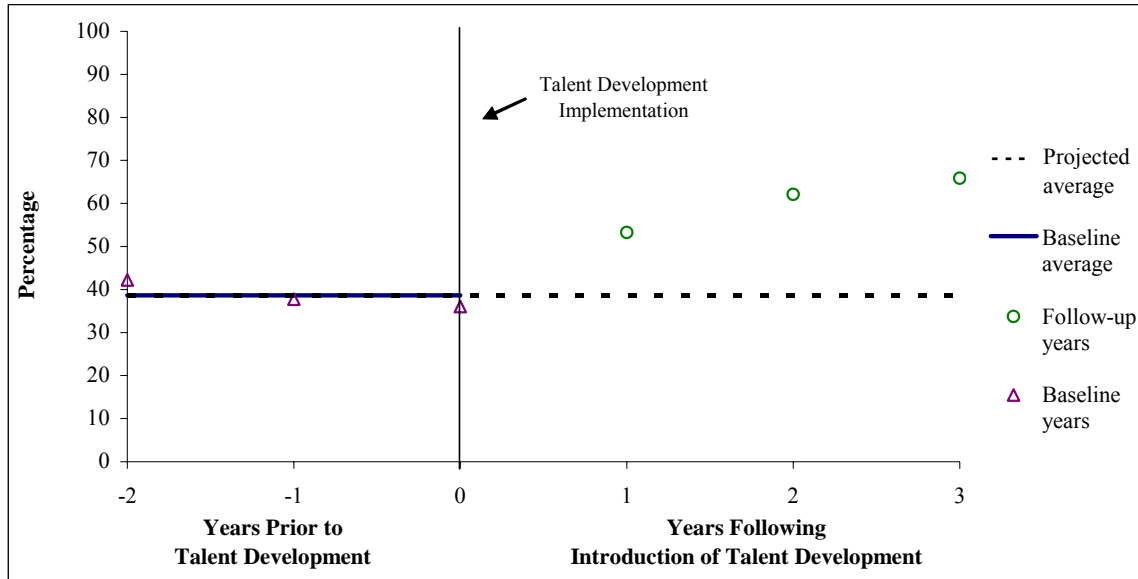
<sup>3</sup>It is also possible to project a baseline trend derived from a consistent pattern of year-to-year increases or decreases in credits earned in the pre-Talent Development period. This was discounted for the current analysis because only three years of pre-Talent Development data were available, leaving only minimal confidence in an estimate of a consistent year-to-year slope in baseline credits-earned patterns. See Bloom (2003) for both baseline-trend and baseline-average interrupted time series techniques.

## Talent Development Evaluation

### Analytic Appendix

#### Figure 1

### Percentage of Ninth-Grade Students Earning One or More Math Credits for the Year in Talent Development School A, Three-Year, Unadjusted, Follow-Up Results



SOURCE: MDRC calculations from individual students' school records from a large, urban school district.

NOTES: The sample includes all students whose course-detail records indicate that they attempted one or more credits.

for a single school. Figure 1 shows the unadjusted interrupted time series estimates for one Talent Development school in the district, School A. The triangles plot observed means for each baseline year. The solid line represents the baseline average, while the dashed line is the projection of this average into the first three Talent Development implementation years. The circles plot observed means for each follow-up year. The difference between the dashed line and each circle represents the deviation from baseline average for each year of implementation. (Note that the years listed in the x-axis of this figure and Figures 2, 3, 4, and 5 are presented relative to the first year of Talent Development implementation.)

### Controlling for Changes in Student Characteristics

In some cases, a Talent Development school (or a comparison school) may experience a change in the composition of its student population. For example, a neighborhood may undergo demographic changes, or geographic boundaries or rules governing school assignment patterns

may change. More importantly, Talent Development may cause a change in the student population, by preventing students from dropping out of high school, for example (which may keep lower-performing students in school longer). In order to help account for systematic changes in the characteristics of student cohorts over time, the analysis incorporates individual student characteristics into the model. The following equation represents the enhanced regression model for a single school:

$$Y_i = A + \sum_{k=1}^K D_k F Y_{ki} + \sum_{j=1}^J C_j X_{ji} + e_i$$

where the parameters specified above are the same and:

- $X_{ji}$  = a vector of  $J$  background characteristics for student  $i$
- $C_j$  = the difference in the percentage of ninth-graders earning one or more math credits over time associated with a unit change in background characteristics  $X$

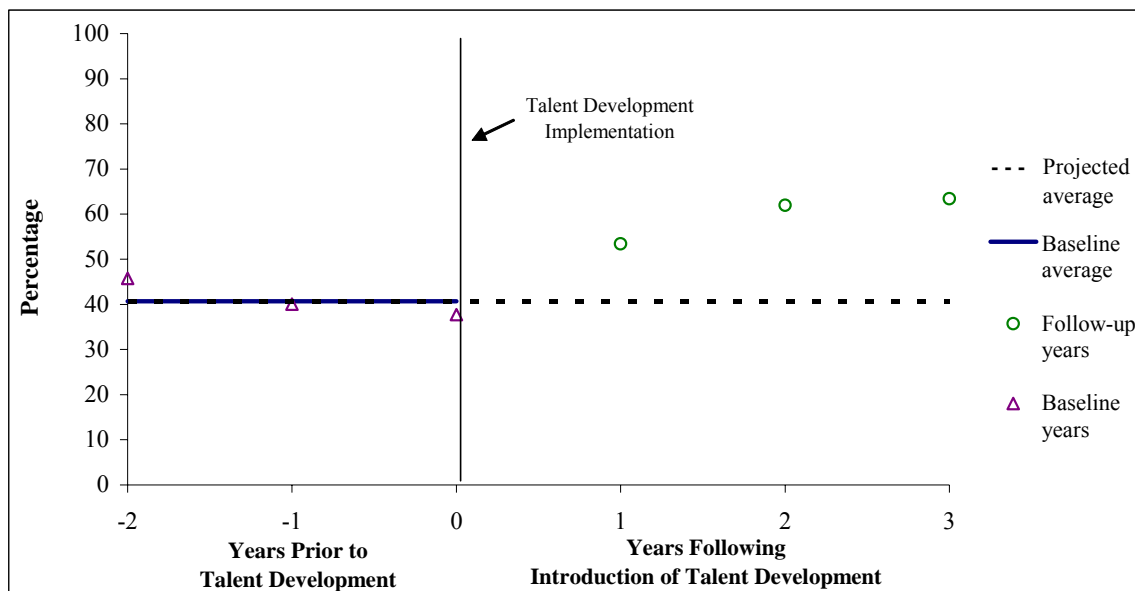
The capacity of the analysis to control for systematic changes in the characteristics of student cohorts is increased if the  $X$  covariates and the outcomes are correlated. For example, suppose that, in one school, Talent Development increases the percentage of ninth-graders who had been retained in a prior grade or who start high school with very low achievement levels. Such a scenario might occur if Talent Development prevents these students from dropping out of school altogether. Because such students are likely to be retained in grade and less likely to complete course requirements, it could appear that Talent Development is reducing average course credits earned if the analysis does not account for the change in the composition of the ninth grade. Thus, it will be important to identify characteristics that are correlated with key outcomes, such as retention in grade. This can help disentangle Talent Development's impact on earning course credits from impacts that are caused by changes in the composition of the ninth-grade cohorts. In this case, the following covariates were incorporated into the interrupted times series models:

- Overage = whether the student was overage for the current grade, indicating that she or he had been retained in a previous grade
- Race = dummy variables indicating whether the student was black, white, or of another race
- Test scores = Separate variables indicating students' eighth-grade reading comprehension and math test scores (in normal curve equivalents)

Figure 2 shows the adjusted interrupted time series estimates for Talent Development School A. As in Figure 1, the triangles plot observed means for each baseline year. The solid line represents the baseline average, while the dashed line is the projection of this average into the first three Talent Development implementation years. The circles plot observed means for each follow-up year. The difference between the dashed line and each circle represents the deviation from baseline average for each year of implementation.

**Talent Development Evaluation  
Analytic Appendix  
Figure 2**

**Percentage of Ninth-Grade Students Earning One or More Math Credits for the Year  
in Talent Development School A,  
Three-Year, Adjusted, Follow-Up Results**



SOURCE: MDRC calculations from individual students' school records from a large, urban school district.

NOTES: The sample includes all students whose course-detail records indicate that they attempted one or more credits.

**Accounting for Cohort Effects**

In addition to controlling for changes in student characteristics, the analysis also attempts to account for cohort effects which are year-to-year variations in the average engagement and performance of students as a group. Because cohort effects reflect variation that can-

not be adequately explained or controlled for by individual random sampling error, the analysis must account for this variation when estimating the standard error of the projected baseline average as well as the standard error of the deviations from the baseline in subsequent follow-up years. If cohort effects are ignored, the standard error of the deviations from the baseline will be understated and their statistical significance will be overstated.

For example, Figure 3 shows that the annual percentage of ninth-grade students earning one or more credits in math varied around the baseline average. The year-to-year variation is the source of estimated uncertainty or random error associated with future projections from the baseline average. Thus, it is also an additional source of random error associated with the deviations from the baseline. The more tightly the outcome percentages cluster around the baseline average, the more confidence can be placed in future projections from this average and, thus, the more confidence can be placed in the estimates of the deviations from the baseline.

Cohort effects can be accounted for by adding a random error term  $v_t$  for each cohort to the random error term in the equation above. Adding this error component to the interrupted time series model above yields the following equation:

$$Y_i = A + \sum D_k F Y_{ki} + \sum C_j X_{ji} + v_t + e_i$$

This equation cannot be estimated using ordinary least squares. This error structure represents a form of a hierarchical linear model.<sup>4</sup> Therefore, in order to use comparative interrupted time series techniques to estimate the effect of Talent Development on student performance, the interrupted time series model is translated into a multilevel system of equations. In particular, the structure of the analysis can be thought of as having three levels: students nested within annual cohorts nested within schools.

The analysis can be executed using hierarchical linear modeling software. In this case, the analysis modeled an equivalent composite equation through the use of the Proc Mixed procedure in SAS software.<sup>5</sup> This procedure also allowed for calculation of impact estimates and corresponding standard errors for five “clusters” of schools, with each cluster consisting of one Talent Development school and its set of non-Talent Development comparison schools. The average of these cluster-by-cluster impacts represents an estimate of the net impact of Talent Development on student outcomes.

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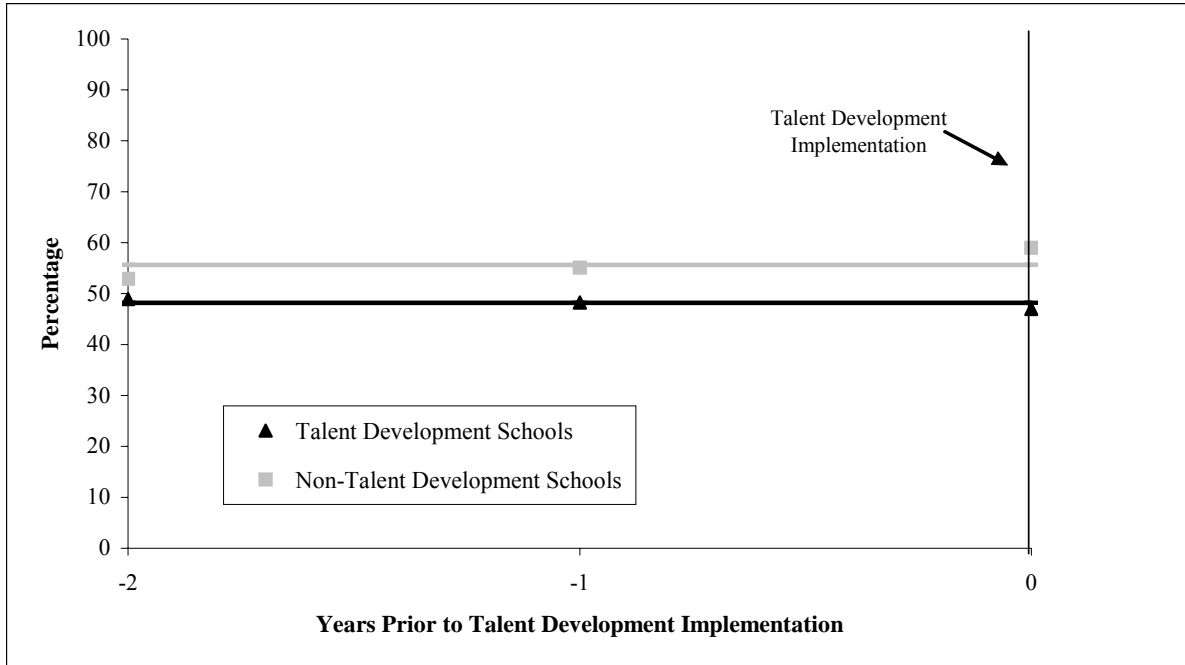
<sup>4</sup>Raudenbush and Bryk, 2001.

<sup>5</sup>For a full description of hierarchical linear model equations for comparative interrupted time series analyses, see Snipes (2003). For more information on using the Proc Mixed procedure in the SAS program, see Singer (1998).

## Talent Development Evaluation

### Analytic Appendix Figure 3

#### Percentage of Ninth-Grade Students Earning One or More Math Credits for the Year in Talent Development and Non-Talent Development Schools for Pre-Talent Development Baseline Years



SOURCE: MDRC calculations from individual students' school records from a large, urban school district.

NOTES: Results were pooled over five Talent Development high schools and over five groups of non-Talent Development high schools consisting of between two and five schools each.

## Comparison School Analysis

### Identifying Comparison Schools

The analysis uses comparison schools to assess the extent to which the baseline and follow-up patterns of student engagement and performance in Talent Development schools differed from the same patterns in similar schools that did not attempt to implement the Talent Development model. The comparison was accomplished by matching each Talent Development

high school with one or more schools in the district that served students with similar characteristics and exhibited a similar pattern of student outcomes during the period before Talent Development began. In this way, the non-Talent Development comparison schools can provide a good indication of the effects on student engagement and performance that may be caused by other policies and events that occur in the district over and above those brought about by Talent Development. To get as robust an estimate of these potential effects as possible, the analysis sought to identify truly comparable non-Talent Development schools and to include as many comparable non-Talent Development schools in the analysis as possible.

Comparison schools were selected from among the 17 nonselective, comprehensive high schools in the district that were not implementing Talent Development prior to the 2002-2003 school year. The criteria for identifying comparison schools were based on average student characteristics and student outcomes over the three years before Talent Development was first introduced. Specifically, schools were classified by racial composition and ninth-grade promotion rates averaged over the 1996-1997 school year through the 1998-1999 school year. As noted earlier, the ninth-grade represents the most dramatic point at which students fall off the path toward graduation, and it is Talent Development's most intensive focus. A critical indicator of the severity of the problem within a ninth-grade class in a given school is the rate at which ninth-graders are promoted to the tenth grade in that school. Given this, it is important to ensure that, prior to implementation, Talent Development and non-Talent Development schools are as similar as possible in terms of the rates at which ninth-grade students are promoted.

The process of identifying schools that were as comparable as possible to the eventual Talent Development high schools occurred in two steps. The first step was designed to ensure a high degree of similarity in the racial composition of the ninth-graders. Here, the 22 nonselective, comprehensive high schools in the district were stratified into four mutually exclusive groups based on their racial and ethnic compositions. These groups included schools in which:

- 90 percent or more of the ninth-grade population were black
- about 50 percent of the ninth-grade population were of other races (predominantly Hispanic)
- 50 percent or more of the ninth-grade population were white
- the racial composition of the ninth grade was more mixed

All of the Talent Development high schools fell into the first two groups. For each Talent Development school, potential comparison schools were limited to those that fell into the same group.

The second step in identifying schools that were comparable to the Talent Development schools was examining ninth-grade promotion rates. Schools were considered comparable if their ninth-grade promotion rates fell within a .25 standard deviation from the three-year average for a given Talent Development school.<sup>6</sup> This process resulted in clusters of between two and five non-Talent Development comparison schools for each Talent Development school.<sup>7</sup>

The more closely the two groups of schools were similar prior to the start of Talent Development, the more likely it is that differences that emerged later can be attributed to the implementation of Talent Development. Table 4 provides an indication of the extent to which the matching process resulted in two closely comparable groups. The table compares the five Talent Development schools with their matched non-Talent Development clusters, reflecting average characteristics of ninth-graders in each group over the three years prior to the implementation of Talent Development. The table indicates that there are systematic but modest differences between the Talent Development and non-Talent Development comparison schools over the years leading up to Talent Development implementation.

In general, Talent Development schools and non-Talent Development schools are similar in terms of race and prior test scores. Talent Development schools exhibited lower attendance and promotion rates and higher chronic-absentee rates than their non-Talent Development counterparts. This finding is not surprising given that, based on most indicators, the five Talent Development schools were among the lowest performing in the district. Thus, almost any school used as a comparison started out with somewhat higher outcome levels for their students. The analytic strategy used in this study controls for these initial differences by framing the impacts of Talent Development in terms of differences between deviations from the baseline averages of Talent Development and non-Talent Development schools' student characteristics.

The information presented in Table 4 may mask some year-to-year differences between the groups of schools or a trend, upward or downward, that may occur for the non-Talent Development schools or for the Talent Development schools. The more the baseline averages remain stable and similar from year to year, the more likely it is that changes in these averages are truly caused by Talent Development rather than by random spikes or troughs. Furthermore, the less variation there is in baseline trends from year to year, the more likely it is that these trends would continue into the future if Talent Development were not implemented.

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<sup>6</sup>The standard deviation of ninth-grade promotion rates was calculated for all 22 high schools in the district over the three years prior to Talent Development (from the 1995-1996 school year through the 1998-1999 school year). Over this period, the average ninth-grade promotion rate was 61 percent and the standard deviation was 49. Thus, a .25 standard deviation for ninth-grade promotion rates was equivalent to approximately 12 percentage points.

<sup>7</sup>A given non-Talent Development school may have been included in more than one comparison cluster.

**Talent Development Evaluation**

**Analytic Appendix**

**Table 4**

**Characteristics of Ninth-Grade Students in Talent Development  
and Non-Talent Development Comparison Schools,  
Averaged Over the Pre-Talent Development Baseline Period**

Characteristic	Talent Development Schools	Non-Talent Development Schools	Difference
Race (%)			
Black	82.0	85.4	-3.4
White	0.9	3.1	-2.2
Hispanic	16.8	9.6	7.2
Other	0.3	1.9	-1.6
Overage for grade <sup>a</sup> (%)	49.6	45.3	4.3
8th-grade SAT-9 test scores			
Reading Comprehension			
Normal Curve Equivalent (NCE) Score	33.5	35.7	-2.2
Math total			
Normal Curve Equivalent (NCE) Score	32.3	33.9	-1.6
Attendance rate <sup>b</sup> (%)	67.0	70.3	-3.4
Attendance rate of 90% or higher (%)	15.5	19.7	-4.2
Attendance rate of 80% or lower (%)	67.7	61.6	6.2
Earned 4 or more credits for the year <sup>c</sup> (%)	50.9	56.2	-5.3
Promoted to 10th grade <sup>d</sup> (%)	52.3	56.2	-3.8

SOURCE: MDRC calculations from individual students' school records from a large, urban school district.

NOTES: Sample includes 9th-grade students from five Talent Development high schools and seven non-Talent Development high schools. Students in the sample were included on the district's transcript and attendance records. The sample excludes students who did not attempt at least one credit during a given school year.

Results in the non-Talent Development columns reflect averages across five clusters of non-Talent Development schools. Each cluster consisted of between two and five non-Talent Development schools. Some schools were counted in more than one cluster.

Estimates are not regression-adjusted for students' background characteristics or prior achievement.

Numbers reflect averages over the three-year period prior to the initial implementation of Talent Development for a given cluster.

<sup>a</sup>Typically, students who are overage for grade were retained in the current grade or a prior one. "Overage for grade" means a student turned 15 before the start of the 9th grade, 16 before the start of the 10th grade, 17 before the start of the 11th grade, or 18 before the start of the 12th grade.

(continued)

**Analytic Appendix**  
**Table 4 (continued)**

<sup>b</sup>Attendance rates were calculated for each student by dividing the number of days the student was present by the total number of days the student was enrolled in a given school year.

<sup>c</sup>Until the 1998-1999 school year, 9th-grade students in the district were required to earn four course credits in order to be promoted.

<sup>d</sup>For the purposes of this analysis, 9th-grade students were considered to have been promoted to the 10th grade if they were listed as 10th-graders in the next year's administrative data file. Discrepancies between the percentage of students meeting various promotion requirements and the promotion rate may be caused by students earning some credits in previous years, incomplete course-detail records, or inconsistent application of the promotion requirements.

For a specific example of how the variation plays out in terms of outcomes, it is useful to refer to Figure 3. The figure shows the year-to-year variation in the math credit outcome for the Talent Development schools and their non-Talent Development comparison schools in the baseline period. It indicates that the Talent Development schools exhibited lower percentages of ninth-grade students earning one or more math credits than their non-Talent Development counterparts. It also indicates that there was little year-to-year variation in the outcome in the Talent Development schools and slightly more variation in the outcome in the comparison schools.<sup>8</sup>

### **Estimating Deviations from Baseline for Comparison Schools**

To compare deviations from the baseline for Talent Development and non-Talent Development schools, it was necessary to designate baseline and follow-up periods for each group of non-Talent Development comparison schools based on the start of Talent Development implementation in the group's matched Talent Development school.

As with the Talent Development schools, the interrupted time series approach was applied to non-Talent Development schools cluster by cluster. Figure 4 illustrates the adjusted interrupted time series estimates for one group of non-Talent Development comparison schools. As in Figures 1 and 2, the triangles plot observed means for each baseline year. In this case, these are the baseline means across the comparison schools in the School A cluster. The solid line represents the baseline average, while the dashed line is the projection of this average into the first three Talent Development implementation years. The circles plot observed means for each follow-up year across the comparison schools in the School A cluster. The difference

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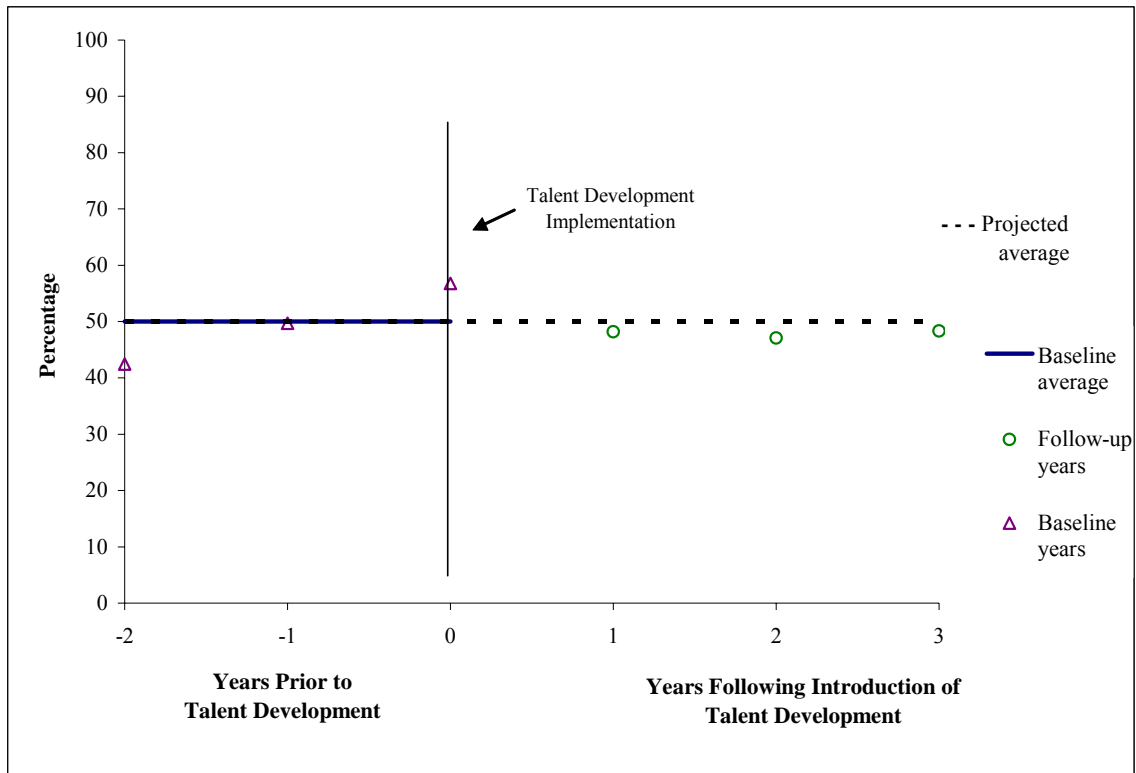
<sup>8</sup>As noted earlier, it is possible to project a baseline trend derived from a consistent pattern of year-to-year increases or decreases in the outcome in the baseline period. This was discounted for the current analysis because only three years of pre-Talent Development data were available, which gave minimal confidence in slope estimates. Therefore, baseline means were used.

**Talent Development Evaluation**

**Analytic Appendix**

**Figure 4**

**Percentage of Ninth-Grade Students Earning One or More Math Credits for the Year in Non-Talent Development Schools, Cluster A, Three-Year, Adjusted, Follow-Up Results**



SOURCE: MDRC calculations from individual students' school records from a large, urban school district.

NOTES: Sample includes all students whose course-detail records indicated that they attempted one or more credits.

between the dashed line and each circle represents the deviation from baseline average for each follow-up year. Despite an apparent upward trend in the baseline period, there is relatively little change in the percentage of ninth-grade students earning one or more math credits in this group of comparison schools. Therefore, in this example, impacts will be driven by deviations from baseline in the matching Talent Development school.

## Estimating Impacts

The equations described previously, in the “Interrupted Time Series Approach” section, were used to generate an estimated deviation from the baseline average for each Talent Development school and for each Talent Development school’s matching group of non-Talent Development schools.<sup>9</sup> Table 5 presents the results from an analysis of the percentage of ninth-grade students earning one or more math credits. These results are presented cluster by cluster in order to illustrate the variability of results from year to year and school to school as well as to help illustrate how impacts are pooled across schools. Impacts for individual schools may not be reliable.

The pooled estimates maximize the reliability of the impact estimates, because estimates for any one school or cluster may be anomalous. In this way, the analysis can assess the likelihood that a non-zero impact was due to chance. In general, the larger the number of schools that exhibited a non-zero impact, the higher the likelihood that the analysis can detect real changes in student engagement and performance that were produced by Talent Development.

The first four columns of numbers in Table 5 show Year 1, Year 2, and Year 3 averages for the Talent Development schools, along with the overall average for the three-year follow-up period. The next four columns of numbers show the same results for the non-Talent Development Schools. The last four columns contain the estimated impact of Talent Development on the percentage of ninth-grade students earning one or more credits in math.

For example, the first row in the table shows the percentage of ninth-grade students earning one or more math credits in each of three implementation years for Talent Development School A and the percentage of ninth-grade students earning one or more math credits over the entire three-year follow-up period for this school. The row also shows the same information averaged across the non-Talent Development schools in this cluster. (This information for School A and the comparison schools in its cluster is also illustrated in Figures 2 and 4, respectively.)

The second row in Table 5 lists the deviation from the baseline average, represented by the difference in the percentage of ninth-grade students earning one or more credits in math in each follow-up year and the percentage of ninth-grade students earning one or more credits in math over the three years prior to Talent Development (baseline average). For example, for Talent Development School A, the average deviation from baseline in Year 1 is about 13. This indicates that the percentage of ninth-grade students earning one or more math credits in School A increased by an average of about 13 percentage points during the first year of Talent Development

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<sup>9</sup>Note that, because some non-Talent Development schools served as comparison schools for more than one Talent Development School, multiple estimates were obtained for these schools. Furthermore, different baseline averages were estimated for some of the same non-Talent Development comparison schools in different years, depending on when the matching Talent Development schools began implementation.

Talent Development Evaluation

Analytic Appendix

Table 5

Interrupted Time Series Estimates and Impacts on  
Percentage of All Ninth-Grade Students Earning One or More Math Credits for the Year,  
Three-Year Follow-Up Results, by Cluster

Cluster	Talent Development Schools				Non-Talent Development				Impact at Follow-Up			
	Follow-Up				Follow-Up				Year 1	Year 2	Year 3	Average <sup>a</sup>
	Year 1	Year 2	Year 3	Average <sup>a</sup>	Year 1	Year 2	Year 3	Average <sup>a</sup>				
School A												
Earned at least 1 math credit (%)	53.4	61.9	63.5	59.5	48.2	47.1	48.3	47.9				
Deviation from baseline	12.6	21.2	22.7	18.8	-1.8	-2.9	-1.7	-2.2	14.5	24.1 **	24.4 **	21.0 ***
School B												
Earned at least 1 math credit (%)	60.6	54.9	65.1	60.2	56.0	60.7	62.7	59.8				
Deviation from baseline	16.4	10.7	20.9	16.0	1.9	6.6	8.6	5.7	14.5 *	4.1	12.3	10.3 *
School C												
Earned at least 1 math credit (%)	64.3	61.0		62.6	59.0	61.2		60.1				
Deviation from baseline	17.3	14.0		15.7	4.8	7.1		5.9	12.5	6.9		9.7
School D												
Earned at least 1 math credit (%)	53.1			53.1	66.7			66.7				
Deviation from baseline	9.8			9.8	5.7			5.7	4.1			4.1
School E												
Earned at least 1 math credit (%)	67.0			67.0	62.9			62.9				
Deviation from baseline	1.2			1.2	4.0			4.0	-2.7			-2.7
All clusters <sup>b</sup>												
Earned at least 1 math credit (%)	59.7	59.3	64.3	60.5	58.5	56.3	55.5	59.5				
Deviation from baseline	11.5	15.3	21.8	12.3	2.9	3.6	3.5	3.8	8.6 ***	11.7 **	18.4 ***	8.5 ***
Effect size									0.17	0.23	0.37	0.17

(continued)

**Analytic Appendix**  
**Table 5 (continued)**

SOURCE: MDRC calculations from individual students' school records from a large, urban school district.

NOTES: Sample includes 9th-grade students from five Talent Development high schools and seven non-Talent Development high schools. Students in the sample were included on the district's transcript and attendance records. The sample excludes students who did not attempt at least one credit during a given school year.

Clusters consisted of a Talent Development school matched with a group of between two and five non-Talent Development schools. Some non-Talent Development schools were counted in more than one cluster.

The deviation from the baseline for Year 1, Year 2, and Year 3 was calculated as the difference between the baseline average and the Year 1, Year 2, and Year 3 averages, respectively.

The impacts for Year 1, Year 2, Year 3, and the average were calculated as the difference between the deviation from the baseline for Talent Development schools and the deviation from the baseline for the non-Talent Development schools.

Blank spaces under the Year 1, Year 2, and Year 3 columns indicate that, at the time of analysis, some clusters had not yet completed a second or third year of implementation.

Estimates are regression-adjusted using ordinary least squares, controlling for 7th-grade math and reading SAT-9 test scores, race, and whether a student had repeated a prior grade. (For the full 9th-grade sample, the analysis also controls for whether students were repeating the 9th grade.)

A two-tailed t-test was applied to the impacts, which are differences in deviations from baseline between Talent Development and non-Talent Development schools. Standard errors and statistical significance levels are adjusted to account for cohort effects. Statistical significance levels are indicated as: \*\*\* = 1 percent; \*\* = 5 percent; \* = 10 percent.

<sup>a</sup>The numbers in the average columns reflect the average outcome for all students in the sample over the years of available follow-up data for each cluster. The length of the follow-up period varies by cluster. Two of the earliest implementing clusters have a three-year follow-up period, one cluster has a two-year follow-up period, and two clusters have only a one-year follow-up period. This column does not reflect the average of one, two, or three follow-up year means, which are also included in the table.

<sup>b</sup>All cluster averages are calculated vertically with the available data for each follow-up year and the overall average.

implementation. The same row shows that the percentage of ninth-grade students earning one or more math credits decreased by an average of about 2 percentage points in the non-Talent Development schools in the same cluster over the same time period. Therefore, the estimated impact of Talent Development in School A is 15 percentage points, or the difference between the deviation in baseline for the Talent Development school and the deviation in baseline for its comparison schools. Again, estimated impacts for individual schools may not be reliable and are given here only to illustrate how estimates were pooled to arrive at the impact across all schools.

The bottom panel of numbers in Table 5 shows results that have been pooled across all five clusters included in the analysis. The average percentage of ninth-grade students earning one or more math credits for each follow-up period was obtained by computing a simple mean across the five Talent Development school averages and the five non-Talent Development cluster averages. Combined standard errors were computed for each of these means accordingly.<sup>10</sup> For example, on average, the deviation from baseline in the follow-up period for Talent Development schools was about 12 percentage points. The average deviation from baseline for non-Talent Development schools was 4. Therefore, the impact of Talent Development on the percentage of ninth-grade students earning one or more credit in math is an increase of about 9 percentage points. This impact is statistically significant at the .05 level and corresponds to an effect size of 0.17. Pooled estimates maximize the reliability of the impact estimates; however, with only five clusters of schools, the analysis has limited power to reliably detect impacts that are not due to chance.

Figure 5 provides a graphic representation of the findings presented at the bottom of Table 5. The top panel of the figure shows the baseline average and the deviation from the projected baseline average for the Talent Development schools. The bottom panel presents the same information for the non-Talent Development schools. The solid line in each part of the figure represents the baseline average for the percentage of ninth-grade students earning one or more math credits and the dashed line represents the projection of that average into the follow-up period. The triangles show the percentage of ninth-grade students earning one or more math credits each year prior to the start of Talent Development implementation, averaged across all five clusters of schools.

The circles in each part of the figure represent the percentage of ninth-grade students earning one or more math credits in the first years of Talent Development implementation. The differences between the dashed lines and the circles represent deviations from the baseline for

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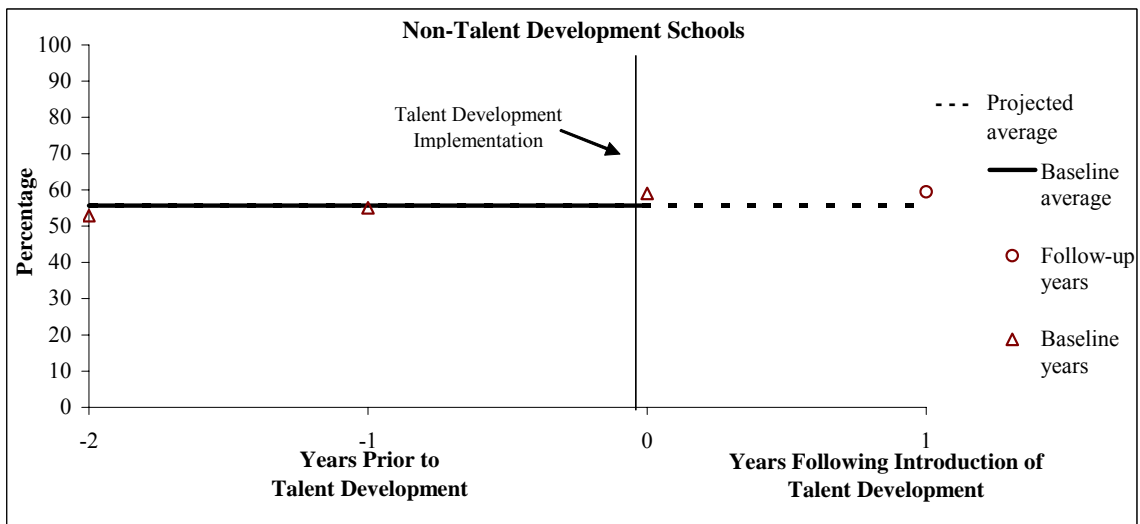
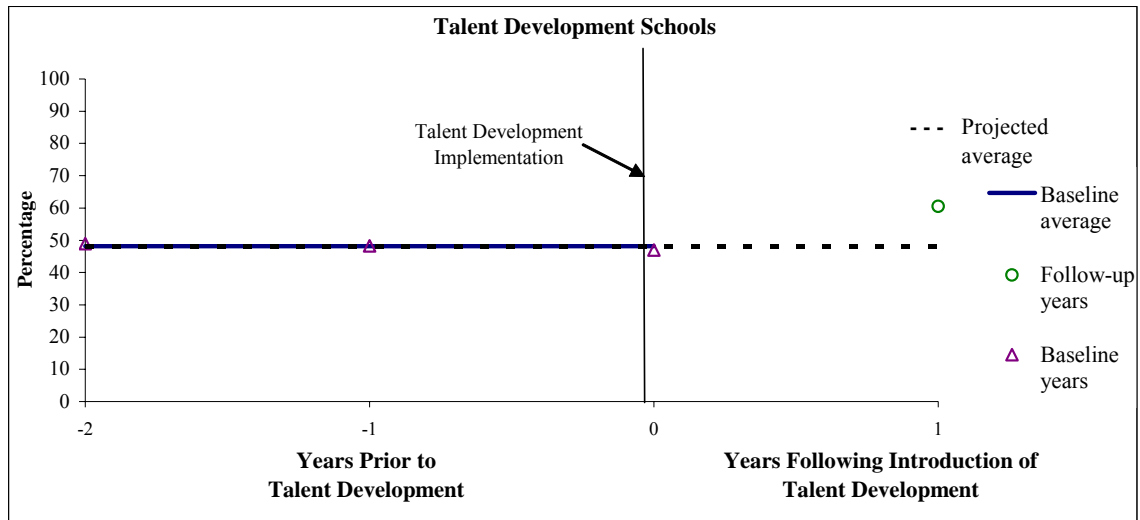
<sup>10</sup>The formula for standard errors for an average of adjusted means was used. The analysis was not able to account for the fact that some comparison schools were used in more than one cluster.

## Talent Development Evaluation

### Analytic Appendix

Figure 5

#### Percentage of Ninth-Grade Students Earning One or More Math Credits for the Year in Talent Development and Non-Talent Development Comparison Schools, Follow-Up Results



SOURCE: MDRC calculations from individual students' school records from a large, urban school district.

NOTES: Sample includes all students whose course-detail records indicated that they attempted one or more credits.

Results were pooled over five Talent Development high schools and over five groups of non-Talent Development high schools consisting of between two and five schools each.

Talent Development and non-Talent Development schools, respectively. Again, it is the difference in these two deviations that represents the impact of Talent Development.

For the study, this process of estimating and pooling impacts was repeated across the five clusters of schools for several student outcomes, including attendance rates, on-time promotion to the tenth grade, course credits earned in algebra and English, and promotion requirements met. The analysis also includes subgroup analyses that examine Talent Development impacts for subpopulations of students that may be more or less likely to benefit from the intervention.

## References

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- Singer, Judith. 1998. "Using SAS Proc Mixed to Fit Multi-Level Models, Hierarchical Models, and Individual Growth Models." *Journal of Educational and Behavioral Statistics* 24 (4): 323-355.
- Snipes, Jason C. 2003. "Using Interrupted Time Series with Comparison Groups to Estimate the Effects of Educational Interventions on Student Achievement." Paper presented at the annual meeting of the Association for Public Policy Analysis and Management, November.



**Unit 2a**

**Supplementary Tables**

**Impacts for All Ninth-Grade Students**

Talent Development Evaluation

Table All.1

Interrupted Time Series Estimates and Impacts on  
Percentage of Students Earning One or More English Credits for the Year  
Three-Year Follow-Up Results, by Cluster  
All Ninth-Grade Students

Cluster	Talent Development Schools				Non-Talent Development Schools				Impact at Follow-Up				
	Follow-Up				Follow-Up				Year 1	Year 2	Year 3	Average <sup>a</sup>	
	Year 1	Year 2	Year 3	Average <sup>a</sup>	Year 1	Year 2	Year 3	Average <sup>a</sup>					
School A													
Earned at least 1 English credit (%)	53.7	54.7	59.4	55.9	44.9	49.4	55.8	50.0					
Deviation from baseline	-1.3	-0.3	4.4	0.9	-3.9	0.5	7.0	1.2	2.7	-0.9	-2.6		-0.3
School B													
Earned at least 1 English credit (%)	64.5	66.3	69.4	66.7	61.1	64.1	62.5	62.6					
Deviation from baseline	13.6	15.4	18.5	15.8	1.4	4.4	2.8	2.9	12.1 *	11.0	15.7 **		12.9 ***
School C													
Earned at least 1 English credit (%)	68.0	64.4		66.2	63.1	62.5		62.8					
Deviation from baseline	10.7	7.1		9.0	4.2	3.7		4.0	6.5	3.4			4.9
School D													
Earned at least 1 English credit (%)	62.5			62.5	66.1			66.1					
Deviation from baseline	8.9			8.9	2.5			2.5	6.4				6.4
School E													
Earned at least 1 English credit (%)	71.6			71.6	62.4			62.4					
Deviation from baseline	4.5			4.5	-0.7			-0.7	5.1				5.1
All clusters <sup>b</sup>													
Earned at least 1 English credit (%)	64.1	61.8	64.4	64.6	59.5	58.7	59.1	60.8					
Deviation from baseline	7.3	7.4	11.5	7.8	0.7	2.9	4.9	2.0	6.6 **	4.5	6.6		5.8 **
Effect size									0.13	0.09	0.13		0.12

(continued)

**Table All.1 (continued)**

SOURCE: MDRC calculations from individual students' school records from a large, urban school district.

NOTES: Sample includes 9th-grade students from five Talent Development high schools and seven non-Talent Development high schools. Students in the sample were included on the district's transcript and attendance records. The sample excludes students who did not attempt at least one credit during a given school year.

Clusters consisted of a Talent Development school matched with a group of between two and five non-Talent Development schools. Some non-Talent Development schools were counted in more than one cluster.

The deviation from the baseline for Year 1, Year 2, and Year 3 was calculated as the difference between the baseline average and the Year 1, Year 2, and Year 3 averages, respectively.

The impacts for Year 1, Year 2, Year 3, and the average were calculated as the difference between the deviation from the baseline for Talent Development schools and the deviation from the baseline for the non-Talent Development schools.

Blank spaces under the Year 1, Year 2, and Year 3 columns indicate that, at the time of analysis, some clusters had not yet completed a second or third year of implementation.

Estimates are regression-adjusted using ordinary least squares, controlling for 7th-grade math and reading SAT-9 test scores, race, and whether a student had repeated a prior grade. (For the full 9th-grade sample, the analysis also controls for whether students were repeating the 9th grade.)

A two-tailed t-test was applied to the impacts, which are differences in deviations from baseline between Talent Development and non-Talent Development schools. Standard errors and statistical significance levels are adjusted to account for cohort effects. Statistical significance levels are indicated as: \*\*\* = 1 percent; \*\* = 5 percent; \* = 10 percent.

<sup>a</sup>The numbers in the average columns reflect the average outcome for all students in the sample over the years of available follow-up data for each cluster. The length of the follow-up period varies by cluster. Two of the earliest implementing clusters have a three-year follow-up period, one cluster has a two-year follow-up period, and two clusters have only a one-year follow-up period. This column does not reflect the average of one, two, or three follow-up year means, which are also included in the table.

<sup>b</sup>All cluster averages are calculated vertically with the available data for each follow-up year and the overall average.

Talent Development Evaluation

Table All.2

Interrupted Time Series Estimates and Impacts on  
Percentage of Students Earning One or More Algebra Credits for the Year  
Three-Year Follow-Up Results, by Cluster  
All Ninth-Grade Students

Cluster	Talent Development Schools				Non-Talent Development Schools				Impact at Follow-Up			
	Follow-Up			Average <sup>a</sup>	Follow-Up			Average <sup>a</sup>	Year 1	Year 2	Year 3	Average <sup>a</sup>
	Year 1	Year 2	Year 3		Year 1	Year 2	Year 3		Year 1	Year 2	Year 3	Average <sup>a</sup>
School A												
Earned at least 1 algebra credit (%)	43.3	47.5	53.3	47.9	9.3	4.4	7.8	7.1				
Deviation from baseline	31.3	35.6	41.4	36.0	-3.5	-8.3	-4.9	-5.6	34.8 ***	43.9 ***	46.3 ***	41.6 ***
School B												
Earned at least 1 algebra credit (%)	47.4	50.6	57.2	51.8	39.7	51.4	52.7	47.9				
Deviation from baseline	19.5	22.7	29.4	23.9	2.0	13.6	15.0	10.1	17.6 *	9.2	14.4	13.7 *
School C												
Earned at least 1 algebra credit (%)	42.1	53.0		47.6	50.8	52.3		51.6				
Deviation from baseline	14.5	25.4		19.9	14.1	15.5		14.8	0.4	9.8		5.1
School D												
Earned at least 1 algebra credit (%)	40.2			40.2	55.8			55.8				
Deviation from baseline	-0.8			-0.8	9.4			9.4	-10.2			-10.2
School E												
Earned at least 1 algebra credit (%)	52.2			52.2	53.1			53.1				
Deviation from baseline	21.9			21.9	8.3			8.3	13.6			13.6
All clusters <sup>b</sup>												
Earned at least 1 algebra credit (%)	45.0	50.4	55.3	47.9	41.8	36.0	30.3	43.1				
Deviation from baseline	17.3	27.9	35.4	20.2	6.1	6.9	5.0	7.4	11.2 ***	21.0 ***	30.3 ***	12.8 ***
Effect size									0.25	0.46	0.67	0.28

(continued)

### Table All.2 (continued)

SOURCE: MDRC calculations from individual students' school records from a large, urban school district.

NOTES: Sample includes 9th-grade students from five Talent Development high schools and seven non-Talent Development high schools. Students in the sample were included on the district's transcript and attendance records. The sample excludes students who did not attempt at least one credit during a given school year.

Clusters consisted of a Talent Development school matched with a group of between two and five non-Talent Development schools. Some non-Talent Development schools were counted in more than one cluster.

The deviation from the baseline for Year 1, Year 2, and Year 3 was calculated as the difference between the baseline average and the Year 1, Year 2, and Year 3 averages, respectively.

The impacts for Year 1, Year 2, Year 3, and the average were calculated as the difference between the deviation from the baseline for Talent Development schools and the deviation from the baseline for the non-Talent Development schools.

Blank spaces under the Year 1, Year 2, and Year 3 columns indicate that, at the time of analysis, some clusters had not yet completed a second or third year of implementation.

Estimates are regression-adjusted using ordinary least squares, controlling for 7th-grade math and reading SAT-9 test scores, race, and whether a student had repeated a prior grade. (For the full 9th-grade sample, the analysis also controls for whether students were repeating the 9th grade.)

A two-tailed t-test was applied to the impacts, which are differences in deviations from baseline between Talent Development and non-Talent Development schools. Standard errors and statistical significance levels are adjusted to account for cohort effects. Statistical significance levels are indicated as: \*\*\* = 1 percent; \*\* = 5 percent; \* = 10 percent.

<sup>a</sup>The numbers in the average columns reflect the average outcome for all students in the sample over the years of available follow-up data for each cluster. The length of the follow-up period varies by cluster. Two of the earliest implementing clusters have a three-year follow-up period, one cluster has a two-year follow-up period, and two clusters have only a one-year follow-up period. This column does not reflect the average of one, two, or three follow-up year means, which are also included in the table.

<sup>b</sup>All cluster averages are calculated vertically with the available data for each follow-up year and the overall average.

Talent Development Evaluation

Table All.3

**Interrupted Time Series Estimates and Impacts on  
Percentage of Students Earning One or More Math Credits for the Year  
Three-Year Follow-Up Results, by Cluster  
All Ninth-Grade Students**

Cluster	Talent Development Schools				Non-Talent Development Schools				Impact at Follow-Up			
	Follow-Up			Average <sup>a</sup>	Follow-Up			Average <sup>a</sup>	Year 1	Year 2	Year 3	Average <sup>a</sup>
Year 1	Year 2	Year 3	Year 1		Year 2	Year 3						
School A												
Earned at least 1 math credit (%)	53.4	61.9	63.5	59.5	48.2	47.1	48.3	47.9				
Deviation from baseline	12.6	21.2	22.7	18.8	-1.8	-2.9	-1.7	-2.2	14.5	24.1 **	24.4 **	21.0 ***
School B												
Earned at least 1 math credit (%)	60.6	54.9	65.1	60.2	56.0	60.7	62.7	59.8				
Deviation from baseline	16.4	10.7	20.9	16.0	1.9	6.6	8.6	5.7	14.5 *	4.1	12.3	10.3 *
School C												
Earned at least 1 math credit (%)	64.3	61.0		62.6	59.0	61.2		60.1				
Deviation from baseline	17.3	14.0		15.7	4.8	7.1		5.9	12.5	6.9		9.7
School D												
Earned at least 1 math credit (%)	53.1			53.1	66.7			66.7				
Deviation from baseline	9.8			9.8	5.7			5.7	4.1			4.1
School E												
Earned at least 1 math credit (%)	67.0			67.0	62.9			62.9				
Deviation from baseline	1.2			1.2	4.0			4.0	-2.7			-2.7
All clusters <sup>b</sup>												
Earned at least 1 math credit (%)	59.7	59.3	64.3	60.5	58.5	56.3	55.5	59.5				
Deviation from baseline	11.5	15.3	21.8	12.3	2.9	3.6	3.5	3.8	8.6 ***	11.7 **	18.4 ***	8.5 ***
Effect size									0.17	0.23	0.37	0.17

(continued)

### Table All.3 (continued)

SOURCE: MDRC calculations from individual students' school records from a large, urban school district.

NOTES: Sample includes 9th-grade students from five Talent Development high schools and seven non-Talent Development high schools. Students in the sample were included on the district's transcript and attendance records. The sample excludes students who did not attempt at least one credit during a given school year.

Clusters consisted of a Talent Development school matched with a group of between two and five non-Talent Development schools. Some non-Talent Development schools were counted in more than one cluster.

The deviation from the baseline for Year 1, Year 2, and Year 3 was calculated as the difference between the baseline average and the Year 1, Year 2, and Year 3 averages, respectively.

The impacts for Year 1, Year 2, Year 3, and the average were calculated as the difference between the deviation from the baseline for Talent Development schools and the deviation from the baseline for the non-Talent Development schools.

Blank spaces under the Year 1, Year 2, and Year 3 columns indicate that, at the time of analysis, some clusters had not yet completed a second or third year of implementation.

Estimates are regression-adjusted using ordinary least squares, controlling for 7th-grade math and reading SAT-9 test scores, race, and whether a student had repeated a prior grade. (For the full 9th-grade sample, the analysis also controls for whether students were repeating the 9th grade.)

A two-tailed t-test was applied to the impacts, which are differences in deviations from baseline between Talent Development and non-Talent Development schools. Standard errors and statistical significance levels are adjusted to account for cohort effects. Statistical significance levels are indicated as: \*\*\* = 1 percent; \*\* = 5 percent; \* = 10 percent.

<sup>a</sup>The numbers in the average columns reflect the average outcome for all students in the sample over the years of available follow-up data for each cluster. The length of the follow-up period varies by cluster. Two of the earliest implementing clusters have a three-year follow-up period, one cluster has a two-year follow-up period, and two clusters have only a one-year follow-up period. This column does not reflect the average of one, two, or three follow-up year means, which are also included in the table.

<sup>b</sup>All cluster averages are calculated vertically with the available data for each follow-up year and the overall average.

Talent Development Evaluation

Table All.4

Interrupted Time Series Estimates and Impacts on  
Percentage of Students Earning Four or More Total Credits for the Year  
Three-Year Follow-Up Results, by Cluster  
All Ninth-Grade Students

Cluster	Talent Development Schools				Non-Talent Development Schools				Impact at Follow-Up			
	Follow-Up			Average <sup>a</sup>	Follow-Up			Average <sup>a</sup>	Year 1	Year 2	Year 3	Average <sup>a</sup>
Year 1	Year 2	Year 3	Year 1		Year 2	Year 3						
School A												
Earned 4 or more credits (%)	55.1	56.7	54.8	55.5	50.3	46.9	50.4	49.2				
Deviation from baseline	3.0	4.6	2.8	3.5	2.0	-1.5	2.0	0.8	1.1	6.1	0.8	2.7
School B												
Earned 4 or more credits (%)	56.9	54.0	58.9	56.6	57.4	58.7	58.2	58.1				
Deviation from baseline	9.8	6.9	11.8	9.5	0.8	2.1	1.6	1.6	9.0	4.8	10.1	7.9 *
School C												
Earned 4 or more credits (%)	63.1	56.0		59.6	57.8	57.9		57.8				
Deviation from baseline	6.6	-0.6		3.0	1.9	2.0		1.9	4.7	-2.6		1.1
School D												
Earned 4 or more credits (%)	50.8			50.8	62.1			62.1				
Deviation from baseline	4.5			4.5	0.9			0.9	3.6			3.6
School E												
Earned 4 or more credits (%)	68.1			68.1	58.3			58.3				
Deviation from baseline	2.5			2.5	-0.5			-0.5	3.0			3.0
All clusters <sup>b</sup>												
Earned 4 or more credits (%)	58.8	55.6	56.9	58.1	57.2	54.5	54.3	57.1				
Deviation from baseline	5.3	3.6	7.3	4.6	1.0	0.9	1.8	0.9	4.3 *	2.8	5.5	3.7 **
Effect size									0.09	0.06	0.11	0.07

(continued)

**Table All.4 (continued)**

SOURCE: MDRC calculations from individual students' school records from a large, urban school district.

NOTES: Sample includes 9th-grade students from five Talent Development high schools and seven non-Talent Development high schools. Students in the sample were included on the district's transcript and attendance records. The sample excludes students who did not attempt at least one credit during a given school year.

Clusters consisted of a Talent Development school matched with a group of between two and five non-Talent Development schools. Some non-Talent Development schools were counted in more than one cluster.

The deviation from the baseline for Year 1, Year 2, and Year 3 was calculated as the difference between the baseline average and the Year 1, Year 2, and Year 3 averages, respectively.

The impacts for Year 1, Year 2, Year 3, and the average were calculated as the difference between the deviation from the baseline for Talent Development schools and the deviation from the baseline for the non-Talent Development schools.

Blank spaces under the Year 1, Year 2, and Year 3 columns indicate that, at the time of analysis, some clusters had not yet completed a second or third year of implementation.

Estimates are regression-adjusted using ordinary least squares, controlling for 7th-grade math and reading SAT-9 test scores, race, and whether a student had repeated a prior grade. (For the full 9th-grade sample, the analysis also controls for whether students were repeating the 9th grade.)

A two-tailed t-test was applied to the impacts, which are differences in deviations from baseline between Talent Development and non-Talent Development schools. Standard errors and statistical significance levels are adjusted to account for cohort effects. Statistical significance levels are indicated as: \*\*\* = 1 percent; \*\* = 5 percent; \* = 10 percent.

<sup>a</sup>The numbers in the average columns reflect the average outcome for all students in the sample over the years of available follow-up data for each cluster. The length of the follow-up period varies by cluster. Two of the earliest implementing clusters have a three-year follow-up period, one cluster has a two-year follow-up period, and two clusters have only a one-year follow-up period. This column does not reflect the average of one, two, or three follow-up year means, which are also included in the table.

<sup>b</sup>All cluster averages are calculated vertically with the available data for each follow-up year and the overall average.

Talent Development Evaluation

Table All.5

Interrupted Time Series Estimates and Impacts on  
Percentage of Students Earning Required Academic Credits  
Three-Year Follow-Up Results, by Cluster  
All Ninth-Grade Students

Cluster	Talent Development Schools				Non-Talent Development Schools				Impact at Follow-Up				
	Follow-Up				Follow-Up				Year 1	Year 2	Year 3	Average <sup>a</sup>	
	Year 1	Year 2	Year 3	Average <sup>a</sup>	Year 1	Year 2	Year 3	Average <sup>a</sup>					
School A													
Earned required academic credits (%)	37.3	40.7	41.7	39.8	28.0	30.9	34.8	31.2					
Deviation from baseline	8.4	11.8	12.8	11.0	-0.9	2.0	5.9	2.3	9.3 *	9.8 *	6.9	8.6 **	
School B													
Earned required academic credits (%)	46.8	40.6	48.8	45.4	40.6	42.3	42.3	41.8					
Deviation from baseline	13.1	7.0	15.1	11.7	4.4	6.0	6.0	5.5	8.8	0.9	9.1	6.2	
School C													
Earned required academic credits (%)	47.1	41.8		44.4	40.5	41.8		41.1					
Deviation from baseline	15.6	10.4		13.0	4.0	5.3		4.7	11.6 *	5.0		8.3 *	
School D													
Earned required academic credits (%)	34.6			34.6	46.0			46.0					
Deviation from baseline	1.8			1.8	3.0			3.0	-1.2			-1.2	
School E													
Earned required academic credits (%)	50.7			50.7	42.4			42.4					
Deviation from baseline	1.4			1.4	1.0			1.0	0.5			0.5	
All clusters <sup>b</sup>													
Earned required academic credits (%)	43.3	41.0	45.2	43.0	39.5	38.3	38.5	40.5					
Deviation from baseline	8.1	9.7	14.0	7.8	2.3	4.5	6.0	3.3	5.8 **	5.3	8.0 **	4.5 **	
Effect size									0.12	0.11	0.17	0.09	

(continued)

### Table All.5 (continued)

SOURCE: MDRC calculations from individual students' school records from a large, urban school district.

NOTES: Sample includes 9th-grade students from five Talent Development high schools and seven non-Talent Development high schools. Students in the sample were included on the district's transcript and attendance records. The sample excludes students who did not attempt at least one credit during a given school year.

Clusters consisted of a Talent Development school matched with a group of between two and five non-Talent Development schools. Some non-Talent Development schools were counted in more than one cluster.

The deviation from the baseline for Year 1, Year 2, and Year 3 was calculated as the difference between the baseline average and the Year 1, Year 2, and Year 3 averages, respectively.

The impacts for Year 1, Year 2, Year 3, and the average were calculated as the difference between the deviation from the baseline for Talent Development schools and the deviation from the baseline for the non-Talent Development schools.

Blank spaces under the Year 1, Year 2, and Year 3 columns indicate that, at the time of analysis, some clusters had not yet completed a second or third year of implementation.

Estimates are regression-adjusted using ordinary least squares, controlling for 7th-grade math and reading SAT-9 test scores, race, and whether a student had repeated a prior grade. (For the full 9th-grade sample, the analysis also controls for whether students were repeating the 9th grade.)

A two-tailed t-test was applied to the impacts, which are differences in deviations from baseline between Talent Development and non-Talent Development schools. Standard errors and statistical significance levels are adjusted to account for cohort effects. Statistical significance levels are indicated as: \*\*\* = 1 percent; \*\* = 5 percent; \* = 10 percent.

<sup>a</sup>The numbers in the average columns reflect the average outcome for all students in the sample over the years of available follow-up data for each cluster. The length of the follow-up period varies by cluster. Two of the earliest implementing clusters have a three-year follow-up period, one cluster has a two-year follow-up period, and two clusters have only a one-year follow-up period. This column does not reflect the average of one, two, or three follow-up year means, which are also included in the table.

<sup>b</sup>All cluster averages are calculated vertically with the available data for each follow-up year and the overall average.

Talent Development Evaluation

Table All.6

Interrupted Time Series Estimates and Impacts on Promotion Rates  
Three-Year Follow-Up Results, by Cluster  
All Ninth-Grade Students

Cluster	Talent Development Schools				Non-Talent Development Schools				Impact at Follow-Up			
	Follow-Up				Follow-Up				Year 1	Year 2	Year 3	Average <sup>a</sup>
	Year 1	Year 2	Year 3	Average <sup>a</sup>	Year 1	Year 2	Year 3	Average <sup>a</sup>				
School A												
Promoted to 10th grade (%)	49.0	47.9		48.5	47.5	48.8		48.2				
Deviation from baseline	-2.1	-3.3		-2.7	-6.4	-5.2		-5.8	4.3	1.9		3.1
School B												
Promoted to 10th grade (%)	61.8	66.2		64.0	54.1	56.3		55.2				
Deviation from baseline	4.7	9.0		6.9	-5.6	-3.4		-4.5	10.3	12.5		11.4 *
School C												
Promoted to 10th grade (%)	63.3			63.3	57.0			57.0				
Deviation from baseline	5.7			5.7	0.7			0.7	5.0			5.0
School D												
Promoted to 10th grade (%)												
Deviation from baseline												
School E												
Promoted to 10th grade (%)												
Deviation from baseline												
All clusters <sup>b</sup>												
Promoted to 10th grade (%)	58.0	57.0		58.6	52.9	52.5		53.5				
Deviation from baseline	2.7	2.9		3.3	-3.8	-4.3		-3.2	6.5	7.2		6.5
Effect size									0.13	0.14		0.13

(continued)

**Table All.6 (continued)**

SOURCE: MDRC calculations from individual students' school records from a large, urban school district.

NOTES: Sample includes 9th-grade students from five Talent Development high schools and seven non-Talent Development high schools. Students in the sample were included on the district's transcript and attendance records. The sample excludes students who did not attempt at least one credit during a given school year.

Clusters consisted of a Talent Development school matched with a group of between two and five non-Talent Development schools. Some non-Talent Development schools were counted in more than one cluster.

The deviation from the baseline for Year 1, Year 2, and Year 3 was calculated as the difference between the baseline average and the Year 1, Year 2, and Year 3 averages, respectively.

The impacts for Year 1, Year 2, Year 3, and the average were calculated as the difference between the deviation from the baseline for Talent Development schools and the deviation from the baseline for the non-Talent Development schools.

Blank spaces under the Year 1, Year 2, and Year 3 columns indicate that, at the time of analysis, some clusters had not yet completed a second or third year of implementation.

Estimates are regression-adjusted using ordinary least squares, controlling for 7th-grade math and reading SAT-9 test scores, race, and whether a student had repeated a prior grade. (For the full 9th-grade sample, the analysis also controls for whether students were repeating the 9th grade.)

A two-tailed t-test was applied to the impacts, which are differences in deviations from baseline between Talent Development and non-Talent Development schools. Standard errors and statistical significance levels are adjusted to account for cohort effects. Statistical significance levels are indicated as: \*\*\* = 1 percent; \*\* = 5 percent; \* = 10 percent.

<sup>a</sup>The numbers in the average columns reflect the average outcome for all students in the sample over the years of available follow-up data for each cluster. The length of the follow-up period varies by cluster. Two of the earliest implementing clusters have a three-year follow-up period, one cluster has a two-year follow-up period, and two clusters have only a one-year follow-up period. This column does not reflect the average of one, two, or three follow-up year means, which are also included in the table.

<sup>b</sup>All cluster averages are calculated vertically with the available data for each follow-up year and the overall average.

Talent Development Evaluation

Table All.7

Interrupted Time Series Estimates and Impacts on Attendance Rates  
Three-Year Follow-Up Results, by Cluster  
All Ninth-Grade Students

Cluster	Talent Development Schools				Non-Talent Development Schools				Impact at Follow-Up				
	Follow-Up				Follow-Up				Year 1	Year 2	Year 3	Average <sup>a</sup>	
	Year 1	Year 2	Year 3	Average <sup>a</sup>	Year 1	Year 2	Year 3	Average <sup>a</sup>					
School A													
Attendance rate	68.6	70.8	71.1	70.2	64.2	68.2	65.8	66.1					
Deviation from baseline	3.7	5.8	6.1	5.2	1.3	5.3	3.0	3.2	2.3	0.5	3.2	2.0	
School B													
Attendance rate	74.3	73.5	68.7	72.2	72.1	72.7	70.8	71.9					
Deviation from baseline	9.8	9.1	4.2	7.7	2.4	2.9	1.0	2.1	7.5 *	6.2	3.1	5.6 *	
School C													
Attendance rate	77.3	79.1		78.2	72.4	70.6		71.5					
Deviation from baseline	11.1	12.9		12.0	1.6	-0.2		0.7	9.5 ***	13.0 ***		11.3 ***	
School D													
Attendance rate	64.4			64.4	73.3			73.3					
Deviation from baseline	-6.7			-6.7	-1.3			-1.3	-5.3 **			-5.3 **	
School E													
Attendance rate	68.6			68.6	70.5			70.5					
Deviation from baseline	-3.4			-3.4	-1.2			-1.2	-2.2			-2.2	
All clusters <sup>b</sup>													
Attendance rate	70.7	74.5	69.9	70.7	70.5	70.5	68.3	70.6					
Deviation from baseline	2.9	9.2	5.2	3.0	0.6	2.7	2.0	0.7	2.4	6.6 ***	3.2	2.3 *	
Effect size									0.08	0.22	0.11	0.08	

(continued)

### Table All.7 (continued)

SOURCE: MDRC calculations from individual students' school records from a large, urban school district.

NOTES: Sample includes 9th-grade students from five Talent Development high schools and seven non-Talent Development high schools. Students in the sample were included on the district's transcript and attendance records. The sample excludes students who did not attempt at least one credit during a given school year.

Clusters consisted of a Talent Development school matched with a group of between two and five non-Talent Development schools. Some non-Talent Development schools were counted in more than one cluster.

The deviation from the baseline for Year 1, Year 2, and Year 3 was calculated as the difference between the baseline average and the Year 1, Year 2, and Year 3 averages, respectively.

The impacts for Year 1, Year 2, Year 3, and the average were calculated as the difference between the deviation from the baseline for Talent Development schools and the deviation from the baseline for the non-Talent Development schools.

Blank spaces under the Year 1, Year 2, and Year 3 columns indicate that, at the time of analysis, some clusters had not yet completed a second or third year of implementation.

Estimates are regression-adjusted using ordinary least squares, controlling for 7th-grade math and reading SAT-9 test scores, race, and whether a student had repeated a prior grade. (For the full 9th-grade sample, the analysis also controls for whether students were repeating the 9th grade.)

A two-tailed t-test was applied to the impacts, which are differences in deviations from baseline between Talent Development and non-Talent Development schools. Standard errors and statistical significance levels are adjusted to account for cohort effects. Statistical significance levels are indicated as: \*\*\* = 1 percent; \*\* = 5 percent; \* = 10 percent.

<sup>a</sup>The numbers in the average columns reflect the average outcome for all students in the sample over the years of available follow-up data for each cluster. The length of the follow-up period varies by cluster. Two of the earliest implementing clusters have a three-year follow-up period, one cluster has a two-year follow-up period, and two clusters have only a one-year follow-up period. This column does not reflect the average of one, two, or three follow-up year means, which are also included in the table.

<sup>b</sup>All cluster averages are calculated vertically with the available data for each follow-up year and the overall average.

Talent Development Evaluation

Table All.8

Interrupted Time Series Estimates and Impacts on  
Percentage of Students with Attendance Rates Greater Than or Equal to 90 Percent  
Three-Year Follow-Up Results, by Cluster  
All Ninth-Grade Students

Cluster	Talent Development Schools				Non-Talent Development Schools				Impact at Follow-Up				
	Follow-Up				Follow-Up				Year 1	Year 2	Year 3	Average <sup>a</sup>	
	Year 1	Year 2	Year 3	Average <sup>a</sup>	Year 1	Year 2	Year 3	Average <sup>a</sup>					
School A													
Attendance rate of 90% or higher (%)	16.2	17.1	20.9	17.8	13.1	14.6	15.0	14.3					
Deviation from baseline	3.9	4.8	8.6	5.5	-0.4	1.0	1.5	0.7	4.4	3.7	7.1 **	4.8 **	
School B													
Attendance rate of 90% or higher (%)	22.4	26.0	22.5	23.7	20.8	21.7	19.5	20.6					
Deviation from baseline	5.2	8.9	5.3	6.5	1.9	2.8	0.6	1.7	3.4	6.1	4.8	4.8	
School C													
Attendance rate of 90% or higher (%)	29.3	30.6		29.9	21.7	19.9		20.8					
Deviation from baseline	18.3	19.6		19.0	2.3	0.6		1.5	16.0 ***	19.1 ***		17.5 ***	
School D													
Attendance rate of 90% or higher (%)	13.7			13.7	23.3			23.3					
Deviation from baseline	-4.7			-4.7	-1.0			-1.0	-3.7			-3.7	
School E													
Attendance rate of 90% or higher (%)	18.0			18.0	19.4			19.4					
Deviation from baseline	-5.6			-5.6	-1.1			-1.1	-4.6			-4.6	
All clusters <sup>b</sup>													
Attendance rate of 90% or higher (%)	19.9	24.5	21.7	20.6	19.6	18.7	17.3	19.7					
Deviation from baseline	3.4	11.1	7.0	4.1	0.3	1.4	1.0	0.4	3.1 *	9.6 ***	6.0 *	3.8 **	
Effect size									0.08	0.25	0.15	0.10	

(continued)

**Table All.8 (continued)**

SOURCE: MDRC calculations from individual students' school records from a large, urban school district.

NOTES: Sample includes 9th-grade students from five Talent Development high schools and seven non-Talent Development high schools. Students in the sample were included on the district's transcript and attendance records. The sample excludes students who did not attempt at least one credit during a given school year.

Clusters consisted of a Talent Development school matched with a group of between two and five non-Talent Development schools. Some non-Talent Development schools were counted in more than one cluster.

The deviation from the baseline for Year 1, Year 2, and Year 3 was calculated as the difference between the baseline average and the Year 1, Year 2, and Year 3 averages, respectively.

The impacts for Year 1, Year 2, Year 3, and the average were calculated as the difference between the deviation from the baseline for Talent Development schools and the deviation from the baseline for the non-Talent Development schools.

Blank spaces under the Year 1, Year 2, and Year 3 columns indicate that, at the time of analysis, some clusters had not yet completed a second or third year of implementation.

Estimates are regression-adjusted using ordinary least squares, controlling for 7th-grade math and reading SAT-9 test scores, race, and whether a student had repeated a prior grade. (For the full 9th-grade sample, the analysis also controls for whether students were repeating the 9th grade.)

A two-tailed t-test was applied to the impacts, which are differences in deviations from baseline between Talent Development and non-Talent Development schools. Standard errors and statistical significance levels are adjusted to account for cohort effects. Statistical significance levels are indicated as: \*\*\* = 1 percent; \*\* = 5 percent; \* = 10 percent.

<sup>a</sup>The numbers in the average columns reflect the average outcome for all students in the sample over the years of available follow-up data for each cluster. The length of the follow-up period varies by cluster. Two of the earliest implementing clusters have a three-year follow-up period, one cluster has a two-year follow-up period, and two clusters have only a one-year follow-up period. This column does not reflect the average of one, two, or three follow-up year means, which are also included in the table.

<sup>b</sup>All cluster averages are calculated vertically with the available data for each follow-up year and the overall average.

Talent Development Evaluation

Table All.9

Interrupted Time Series Estimates and Impacts on  
Percentage of Students with Attendance Rates Less Than or Equal to 80 Percent  
Three-Year Follow-Up Results, by Cluster  
All Ninth-Grade Students

Cluster	Talent Development Schools				Non-Talent Development Schools				Impact at Follow-Up			
	Follow-Up				Follow-Up				Year 1	Year 2	Year 3	Average <sup>a</sup>
	Year 1	Year 2	Year 3	Average <sup>a</sup>	Year 1	Year 2	Year 3	Average <sup>a</sup>				
School A												
Attendance rate of 80% or lower (%)	64.4	63.8	62.0	63.5	72.3	69.8	67.9	70.0				
Deviation from baseline	-6.2	-6.8	-8.6	-7.1	0.5	-1.9	-3.9	-1.8	-6.7	-4.8	-4.7	-5.3 *
School B												
Attendance rate of 80% or lower (%)	53.0	59.5	61.1	57.9	60.0	58.4	60.0	59.5				
Deviation from baseline	-13.7	-7.2	-5.6	-8.9	-2.5	-4.0	-2.4	-3.0	-11.3	-3.2	-3.2	-5.9
School C												
Attendance rate of 80% or lower (%)	52.8	49.0		50.9	58.0	59.1		58.5				
Deviation from baseline	-20.6	-24.4		-22.5	-4.3	-3.3		-3.8	-16.3 ***	-21.1 ***		-18.7 ***
School D												
Attendance rate of 80% or lower (%)	73.5			73.5	53.8			53.8				
Deviation from baseline	10.9			10.9	-0.8			-0.8	11.7 **			11.7 **
School E												
Attendance rate of 80% or lower (%)	62.6			62.6	60.2			60.2				
Deviation from baseline	4.9			4.9	-0.2			-0.2	5.2			5.2
All clusters <sup>b</sup>												
Attendance rate of 80% or lower (%)	61.2	57.4	61.6	61.7	60.9	62.4	63.9	60.4				
Deviation from baseline	-5.0	-12.8	-7.1	-4.5	-1.5	-3.1	-3.2	-1.9	-3.5	-9.7 ***	-3.9	-2.6
Effect size									-0.07	-0.21	-0.08	-0.06

(continued)

### Table All.9 (continued)

SOURCE: MDRC calculations from individual students' school records from a large, urban school district.

NOTES: Sample includes 9th-grade students from five Talent Development high schools and seven non-Talent Development high schools. Students in the sample were included on the district's transcript and attendance records. The sample excludes students who did not attempt at least one credit during a given school year.

Clusters consisted of a Talent Development school matched with a group of between two and five non-Talent Development schools. Some non-Talent Development schools were counted in more than one cluster.

The deviation from the baseline for Year 1, Year 2, and Year 3 was calculated as the difference between the baseline average and the Year 1, Year 2, and Year 3 averages, respectively.

The impacts for Year 1, Year 2, Year 3, and the average were calculated as the difference between the deviation from the baseline for Talent Development schools and the deviation from the baseline for the non-Talent Development schools.

Blank spaces under the Year 1, Year 2, and Year 3 columns indicate that, at the time of analysis, some clusters had not yet completed a second or third year of implementation.

Estimates are regression-adjusted using ordinary least squares, controlling for 7th-grade math and reading SAT-9 test scores, race, and whether a student had repeated a prior grade. (For the full 9th-grade sample, the analysis also controls for whether students were repeating the 9th grade.)

A two-tailed t-test was applied to the impacts, which are differences in deviations from baseline between Talent Development and non-Talent Development schools. Standard errors and statistical significance levels are adjusted to account for cohort effects. Statistical significance levels are indicated as: \*\*\* = 1 percent; \*\* = 5 percent; \* = 10 percent.

<sup>a</sup>The numbers in the average columns reflect the average outcome for all students in the sample over the years of available follow-up data for each cluster. The length of the follow-up period varies by cluster. Two of the earliest implementing clusters have a three-year follow-up period, one cluster has a two-year follow-up period, and two clusters have only a one-year follow-up period. This column does not reflect the average of one, two, or three follow-up year means, which are also included in the table.

<sup>b</sup>All cluster averages are calculated vertically with the available data for each follow-up year and the overall average.

**Talent Development Evaluation**

**Table All.Summary**

**Impacts on Attendance, Course-Taking, and Promotion  
Follow-Up Results  
All Ninth-Grade Students**

Outcome	Talent Development Schools		Non-Talent Development Schools		Impact at Follow-Up	Impact Effect Size
	Baseline	Follow-Up	Baseline	Follow-Up		
	Earned at least 1 English credit for the year (%)	56.8	64.6	58.8		
Deviation from baseline		7.8 ***		2.0 *	5.8 **	0.12
Earned at least 1 algebra credit for the year (%)	27.8	47.9	35.7	43.1		
Deviation from baseline		20.2 ***		7.4 ***	12.8 ***	0.28
Earned at least 1 math credit for the year (%)	48.2	60.5	55.6	59.5		
Deviation from baseline		12.3 ***		3.8 ***	8.5 ***	0.17
Earned 4 or more credits for the year <sup>a</sup> (%)	53.5	58.1	56.2	57.1		
Deviation from baseline		4.6 ***		0.9	3.7 **	0.07
Earned required academic credits <sup>b</sup> (%)	35.2	43.0	37.2	40.5		
Deviation from baseline		7.8 ***		3.3 ***	4.5 **	0.09
Promoted to 10th grade <sup>c</sup> (%)	55.3	58.6	56.7	53.5		
Deviation from baseline		3.3		-3.2 *	6.5	0.13
Attendance rate <sup>d</sup>	67.8	70.7	69.9	70.6		
Deviation from baseline		3.0 ***		0.7	2.3 *	0.08
Attendance rate of 90% or higher (%)	16.5	20.6	19.3	19.7		
Deviation from baseline		4.1 ***		0.4	3.8 **	0.10
Attendance rate of 80% or lower (%)	66.2	61.7	62.3	60.4		
Deviation from baseline		-4.5 **		-1.9 **	-2.6	-0.06

(continued)

SOURCE: MDRC calculations from individual students' school records from a large, urban school district.

NOTES: Sample includes 9th-grade students from five Talent Development high schools and seven non-Talent Development high schools. Students in the sample were included on the district's transcript and attendance records. The sample excludes students who did not attempt at least one credit during a given school year.

Results in the Talent Development columns reflect averages across the five Talent Development schools. Results in the non-Talent Development columns reflect averages across five clusters of non-Talent Development schools. Each cluster consisted of between two and five non-Talent Development schools. Some non-Talent Development schools were counted in more than one cluster.

Numbers in the "Baseline" columns reflect averages over the three-year period prior to the initial implementation of Talent Development for a given cluster.

Numbers in the "Follow-Up" columns reflect averages over the entire follow-up period. The length of the follow-up period varies by cluster. Two of the earliest implementing clusters had a three-year follow-up period, one cluster had a two-year follow-up period, and two clusters had only a one-year follow-up period.

### **Table All.Summary (continued)**

The deviation from baseline, indicated in the row directly below each outcome, reflects the difference between the baseline average and the average over the follow-up period.

The impact was calculated as the difference between the deviation from the baseline for Talent Development schools and the deviation from the baseline for non-Talent Development schools.

The impact effect size was calculated by dividing the impact by the standard deviation of the outcome for all 9th-grade students in the district's nonselective, comprehensive high schools from school years 1996-1997 to 1998-1999.

Estimates are regression-adjusted using ordinary least squares, controlling for 7th-grade math and reading SAT-9 test scores, race, and whether a student had repeated a prior grade. (For the full 9th-grade sample, the analysis also controls for whether students were repeating the 9th grade.)

A two-tailed t-test was applied to deviations from baseline and to differences in deviations from baseline between Talent Development and non-Talent Development schools. Standard errors and statistical significance levels are adjusted to account for cohort effects. Statistical significance levels are indicated as: \*\*\* = 1 percent; \*\* = 5 percent; \* = 10 percent.

<sup>a</sup>Until the 1998-1999 school year, 9th-grade students in the district were required to earn four course credits in order to be promoted.

<sup>b</sup>Beginning in the 1998-1999 school year, 9th-grade students were required to earn at least five course credits, including one credit each in English, math, and science.

<sup>c</sup>For the purposes of this analysis, 9th-grade students were considered promoted if they were listed as 10th-graders in the next year's administrative data file. Discrepancies between the percentage of students meeting various promotion requirements and the promotion rate may be caused by students earning some credits in previous years, incomplete course-detail records, or inconsistent application of the promotion requirements. Due to data availability, this outcome includes data for only three of the five clusters of Talent Development and non-Talent Development schools.

<sup>d</sup>Attendance rates were calculated for each student by dividing the number of days the student was present by the total number of days the student was enrolled in a given school year.



**Unit 2b**

**Supplementary Tables**

**Impacts for First-Time Ninth-Grade Students**

Talent Development Evaluation

Table FT.1

Interrupted Time Series Estimates and Impacts on  
Percentage of Students Earning One or More English Credits for the Year  
Three-Year Follow-Up Results, by Cluster  
First-Time Ninth-Grade Students

Cluster	Talent Development Schools				Non-Talent Development Schools				Impact at Follow-Up			
	Follow-Up			Average <sup>a</sup>	Follow-Up			Average <sup>a</sup>	Year 1	Year 2	Year 3	Average <sup>a</sup>
Year 1	Year 2	Year 3	Year 1		Year 2	Year 3						
School A												
Earned at least 1 English credit (%)	63.8	64.6	71.7	66.6	54.1	56.1	59.7	56.6				
Deviation from baseline	-1.9	-1.1	6.0	0.9	-4.3	-2.3	1.3	-1.8	2.4	1.2	4.6	2.7
School B												
Earned at least 1 English credit (%)	78.4	76.1	82.3	79.0	68.9	70.9	70.8	70.2				
Deviation from baseline	16.5	14.3	20.4	17.1	0.5	2.5	2.5	1.9	16.0 **	11.7 *	18.0 **	15.2 ***
School C												
Earned at least 1 English credit (%)	80.1	77.3		78.7	70.2	71.7		70.9				
Deviation from baseline	15.3	12.6		14.0	2.7	4.2		3.5	12.6 *	8.3		10.5 **
School D												
Earned at least 1 English credit (%)	75.9			75.9	74.7			74.7				
Deviation from baseline	16.9			16.9	3.4			3.4	13.5			13.5 *
School E												
Earned at least 1 English credit (%)	80.8			80.8	71.2			71.2				
Deviation from baseline	5.0			5.0	0.1			0.1	4.9			4.9
All clusters <sup>b</sup>												
Earned at least 1 English credit (%)	75.8	72.7	77.0	76.2	67.8	66.2	65.3	68.7				
Deviation from baseline	10.4	8.6	13.2	10.8	0.5	1.5	1.9	1.4	9.9 ***	7.1 *	11.3 **	9.4 ***
Effect size									0.20	0.14	0.23	0.19

(continued)

**Table FT.1 (continued)**

SOURCE: MDRC calculations from individual students' school records from a large, urban school district.

NOTES: Sample includes 9th-grade students from five Talent Development high schools and seven non-Talent Development high schools. Students in the sample were included on the district's transcript and attendance records. The sample excludes students who did not attempt at least one credit during a given school year. First-time 9th-grade students were defined as students whose records indicate that they were in 9th grade in the year under study and in 8th grade in the previous year's administrative data file.

Clusters consisted of a Talent Development school matched with a group of between two and five non-Talent Development schools. Some non-Talent Development schools were counted in more than one cluster.

The deviation from the baseline for Year 1, Year 2, and Year 3 was calculated as the difference between the baseline average and the Year 1, Year 2, and Year 3 averages, respectively.

The impacts for Year 1, Year 2, Year 3, and the average were calculated as the difference between the deviation from the baseline for Talent Development schools and the deviation from the baseline for the non-Talent Development schools.

Blank spaces under the Year 1, Year 2, and Year 3 columns indicate that, at the time of analysis, some clusters had not yet completed a second or third year of implementation.

Estimates are regression-adjusted using ordinary least squares, controlling for 7th-grade math and reading SAT-9 test scores, race, and whether a student had repeated a prior grade. (For the full 9th-grade sample, the analysis also controls for whether students were repeating the 9th grade.)

A two-tailed t-test was applied to the impacts, which are differences in deviations from baseline between Talent Development and non-Talent Development schools. Standard errors and statistical significance levels are adjusted to account for cohort effects. Statistical significance levels are indicated as: \*\*\* = 1 percent; \*\* = 5 percent; \* = 10 percent.

<sup>a</sup>The numbers in the average columns reflect the average outcome for all students in the sample over the years of available follow-up data for each cluster. The length of the follow-up period varies by cluster. Two of the earliest implementing clusters have a three-year follow-up period, one cluster has a two-year follow-up period, and two clusters have only a one-year follow-up period. This column does not reflect the average of one, two, or three follow-up year means, which are also included in the table.

<sup>b</sup>All cluster averages are calculated vertically with the available data for each follow-up year and the overall average.

Talent Development Evaluation

Table FT.2

Interrupted Time Series Estimates and Impacts on  
Percentage of Students Earning One or More Algebra Credits for the Year  
Three-Year Follow-Up Results, by Cluster  
First-Time Ninth-Grade Students

Cluster	Talent Development Schools				Non-Talent Development Schools				Impact at Follow-Up			
	Follow-Up				Follow-Up				Year 1	Year 2	Year 3	Average <sup>a</sup>
	Year 1	Year 2	Year 3	Average <sup>a</sup>	Year 1	Year 2	Year 3	Average <sup>a</sup>	Year 1	Year 2	Year 3	Average <sup>a</sup>
School A												
Earned at least 1 algebra credit (%)	53.9	61.1	63.2	59.3	7.7	5.3	4.1	5.7				
Deviation from baseline	38.7	45.9	47.9	44.1	-8.2	-10.5	-11.7	-10.2	46.8 ***	56.4 ***	59.6 ***	54.3 ***
School B												
Earned at least 1 algebra credit (%)	59.3	57.4	67.9	61.5	50.3	62.3	65.7	59.4				
Deviation from baseline	27.2	25.3	35.8	29.4	3.7	15.7	19.1	12.8	23.5 *	9.6	16.7	16.6 *
School C												
Earned at least 1 algebra credit (%)	51.7	65.5		58.6	60.9	65.5		63.2				
Deviation from baseline	18.9	32.7		25.8	14.7	19.3		17.0	4.2	13.5		8.8
School D												
Earned at least 1 algebra credit (%)	52.8			52.8	69.7			69.7				
Deviation from baseline	6.2			6.2	13.8			13.8	-7.5			-7.5
School E												
Earned at least 1 algebra credit (%)	68.6			68.6	66.3			66.3				
Deviation from baseline	31.2			31.2	10.9			10.9	20.2			20.2
All clusters <sup>b</sup>												
Earned at least 1 algebra credit (%)	57.2	61.3	65.5	60.2	51.0	44.3	34.9	52.8				
Deviation from baseline	24.4	34.6	41.8	27.3	7.0	8.2	3.7	8.9	17.4 ***	26.5 ***	38.2 ***	18.5 ***
Effect size									0.38	0.58	0.84	0.41

(continued)

### Table FT.2 (continued)

SOURCE: MDRC calculations from individual students' school records from a large, urban school district.

NOTES: Sample includes 9th-grade students from five Talent Development high schools and seven non-Talent Development high schools. Students in the sample were included on the district's transcript and attendance records. The sample excludes students who did not attempt at least one credit during a given school year. First-time 9th-grade students were defined as students whose records indicate that they were in 9th grade in the year under study and in 8th grade in the previous year's administrative data file.

Clusters consisted of a Talent Development school matched with a group of between two and five non-Talent Development schools. Some non-Talent Development schools were counted in more than one cluster.

The deviation from the baseline for Year 1, Year 2, and Year 3 was calculated as the difference between the baseline average and the Year 1, Year 2, and Year 3 averages, respectively.

The impacts for Year 1, Year 2, Year 3, and the average were calculated as the difference between the deviation from the baseline for Talent Development schools and the deviation from the baseline for the non-Talent Development schools.

Blank spaces under the Year 1, Year 2, and Year 3 columns indicate that, at the time of analysis, some clusters had not yet completed a second or third year of implementation.

Estimates are regression-adjusted using ordinary least squares, controlling for 7th-grade math and reading SAT-9 test scores, race, and whether a student had repeated a prior grade. (For the full 9th-grade sample, the analysis also controls for whether students were repeating the 9th grade.)

A two-tailed t-test was applied to the impacts, which are differences in deviations from baseline between Talent Development and non-Talent Development schools. Standard errors and statistical significance levels are adjusted to account for cohort effects. Statistical significance levels are indicated as: \*\*\* = 1 percent; \*\* = 5 percent; \* = 10 percent.

<sup>a</sup>The numbers in the average columns reflect the average outcome for all students in the sample over the years of available follow-up data for each cluster. The length of the follow-up period varies by cluster. Two of the earliest implementing clusters have a three-year follow-up period, one cluster has a two-year follow-up period, and two clusters have only a one-year follow-up period. This column does not reflect the average of one, two, or three follow-up year means, which are also included in the table.

<sup>b</sup>All cluster averages are calculated vertically with the available data for each follow-up year and the overall average.

Talent Development Evaluation

Table FT.3

Interrupted Time Series Estimates and Impacts on  
Percentage of Students Earning One or More Math Credits for the Year  
Three-Year Follow-Up Results, by Cluster  
First-Time Ninth-Grade Students

Cluster	Talent Development Schools				Non-Talent Development Schools				Impact at Follow-Up			
	Follow-Up			Average <sup>a</sup>	Follow-Up			Average <sup>a</sup>	Year 1	Year 2	Year 3	Average <sup>a</sup>
Year 1	Year 2	Year 3	Year 1		Year 2	Year 3						
School A												
Earned at least 1 math credit (%)	65.2	75.9	74.0	71.6	54.2	54.9	51.2	53.5				
Deviation from baseline	16.5	27.1	25.3	22.9	-6.9	-6.2	-10.0	-7.7	23.4 *	33.3 **	35.2 ***	30.6 ***
School B												
Earned at least 1 math credit (%)	71.2	61.8	77.9	70.4	63.7	67.9	73.3	68.3				
Deviation from baseline	18.2	8.8	24.8	17.3	2.3	6.5	11.9	6.9	15.8 *	2.3	13.0	10.5 *
School C												
Earned at least 1 math credit (%)	77.1	74.1		75.6	66.2	71.7		69.0				
Deviation from baseline	22.5	19.5		21.0	4.6	10.1		7.4	17.9 **	9.4		13.6 *
School D												
Earned at least 1 math credit (%)	64.0			64.0	77.4			77.4				
Deviation from baseline	16.4			16.4	8.9			8.9	7.5			7.5
School E												
Earned at least 1 math credit (%)	78.7			78.7	74.1			74.1				
Deviation from baseline	3.8			3.8	7.4			7.4	-3.6			-3.6
All clusters <sup>b</sup>												
Earned at least 1 math credit (%)	71.2	70.6	75.9	72.1	67.1	64.9	62.2	68.5				
Deviation from baseline	15.5	18.5	25.1	16.3	3.3	3.5	1.0	4.6	12.2 ***	15.0 ***	24.1 ***	11.7 ***
Effect size									0.24	0.30	0.48	0.23

(continued)

### Table FT.3 (continued)

SOURCE: MDRC calculations from individual students' school records from a large, urban school district.

NOTES: Sample includes 9th-grade students from five Talent Development high schools and seven non-Talent Development high schools. Students in the sample were included on the district's transcript and attendance records. The sample excludes students who did not attempt at least one credit during a given school year. First-time 9th-grade students were defined as students whose records indicate that they were in 9th grade in the year under study and in 8th grade in the previous year's administrative data file.

Clusters consisted of a Talent Development school matched with a group of between two and five non-Talent Development schools. Some non-Talent Development schools were counted in more than one cluster.

The deviation from the baseline for Year 1, Year 2, and Year 3 was calculated as the difference between the baseline average and the Year 1, Year 2, and Year 3 averages, respectively.

The impacts for Year 1, Year 2, Year 3, and the average were calculated as the difference between the deviation from the baseline for Talent Development schools and the deviation from the baseline for the non-Talent Development schools.

Blank spaces under the Year 1, Year 2, and Year 3 columns indicate that, at the time of analysis, some clusters had not yet completed a second or third year of implementation.

Estimates are regression-adjusted using ordinary least squares, controlling for 7th-grade math and reading SAT-9 test scores, race, and whether a student had repeated a prior grade. (For the full 9th-grade sample, the analysis also controls for whether students were repeating the 9th grade.)

A two-tailed t-test was applied to the impacts, which are differences in deviations from baseline between Talent Development and non-Talent Development schools. Standard errors and statistical significance levels are adjusted to account for cohort effects. Statistical significance levels are indicated as: \*\*\* = 1 percent; \*\* = 5 percent; \* = 10 percent.

<sup>a</sup>The numbers in the average columns reflect the average outcome for all students in the sample over the years of available follow-up data for each cluster. The length of the follow-up period varies by cluster. Two of the earliest implementing clusters have a three-year follow-up period, one cluster has a two-year follow-up period, and two clusters have only a one-year follow-up period. This column does not reflect the average of one, two, or three follow-up year means, which are also included in the table.

<sup>b</sup>All cluster averages are calculated vertically with the available data for each follow-up year and the overall average.

Talent Development Evaluation

Table FT.4

Interrupted Time Series Estimates and Impacts on  
Percentage of Students Earning Four or More Total Credits for the Year  
Three-Year Follow-Up Results, by Cluster  
First-Time Ninth-Grade Students

Cluster	Talent Development Schools				Non-Talent Development Schools				Impact at Follow-Up			
	Year 1	Year 2	Year 3	Average <sup>a</sup>	Year 1	Year 2	Year 3	Average <sup>a</sup>	Year 1	Year 2	Year 3	Average <sup>a</sup>
School A												
Earned 4 or more credits (%)	64.2	68.2	66.7	66.3	58.6	55.5	53.9	56.0				
Deviation from baseline	2.4	6.4	4.9	4.5	-1.6	-4.7	-6.3	-4.2	4.0	11.1	11.2	8.7 *
School B												
Earned 4 or more credits (%)	73.6	63.2	74.5	70.5	66.7	67.2	67.8	67.2				
Deviation from baseline	16.1	5.7	16.9	12.9	0.9	1.3	1.9	1.4	15.2 **	4.3	15.0 **	11.5 **
School C												
Earned 4 or more credits (%)	74.9	69.3		72.1	66.7	68.1		67.4				
Deviation from baseline	11.6	6.0		8.8	1.2	2.7		1.9	10.4 *	3.3		6.9
School D												
Earned 4 or more credits (%)	62.3			62.3	72.4			72.4				
Deviation from baseline	10.1			10.1	2.1			2.1	8.0			8.0 *
School E												
Earned 4 or more credits (%)	77.8			77.8	68.3			68.3				
Deviation from baseline	3.2			3.2	0.3			0.3	2.9			2.9
All clusters <sup>b</sup>												
Earned 4 or more credits (%)	70.6	66.9	70.6	69.8	66.5	63.6	60.8	66.2				
Deviation from baseline	8.7	6.0	10.9	7.9	0.6	-0.2	-2.2	0.3	8.1 ***	6.2 *	13.1 ***	7.6 ***
Effect size									0.16	0.13	0.26	0.15

(continued)

### Table FT.4 (continued)

SOURCE: MDRC calculations from individual students' school records from a large, urban school district.

NOTES: Sample includes 9th-grade students from five Talent Development high schools and seven non-Talent Development high schools. Students in the sample were included on the district's transcript and attendance records. The sample excludes students who did not attempt at least one credit during a given school year. First-time 9th-grade students were defined as students whose records indicate that they were in 9th grade in the year under study and in 8th grade in the previous year's administrative data file.

Clusters consisted of a Talent Development school matched with a group of between two and five non-Talent Development schools. Some non-Talent Development schools were counted in more than one cluster.

The deviation from the baseline for Year 1, Year 2, and Year 3 was calculated as the difference between the baseline average and the Year 1, Year 2, and Year 3 averages, respectively.

The impacts for Year 1, Year 2, Year 3, and the average were calculated as the difference between the deviation from the baseline for Talent Development schools and the deviation from the baseline for the non-Talent Development schools.

Blank spaces under the Year 1, Year 2, and Year 3 columns indicate that, at the time of analysis, some clusters had not yet completed a second or third year of implementation.

Estimates are regression-adjusted using ordinary least squares, controlling for 7th-grade math and reading SAT-9 test scores, race, and whether a student had repeated a prior grade. (For the full 9th-grade sample, the analysis also controls for whether students were repeating the 9th grade.)

A two-tailed t-test was applied to the impacts, which are differences in deviations from baseline between Talent Development and non-Talent Development schools. Standard errors and statistical significance levels are adjusted to account for cohort effects. Statistical significance levels are indicated as: \*\*\* = 1 percent; \*\* = 5 percent; \* = 10 percent.

<sup>a</sup>The numbers in the average columns reflect the average outcome for all students in the sample over the years of available follow-up data for each cluster. The length of the follow-up period varies by cluster. Two of the earliest implementing clusters have a three-year follow-up period, one cluster has a two-year follow-up period, and two clusters have only a one-year follow-up period. This column does not reflect the average of one, two, or three follow-up year means, which are also included in the table.

<sup>b</sup>All cluster averages are calculated vertically with the available data for each follow-up year and the overall average.

Talent Development Evaluation

Table FT.5

Interrupted Time Series Estimates and Impacts on  
Percentage of Students Earning Required Academic Credits  
Three-Year Follow-Up Results, by Cluster  
First-Time Ninth-Grade Students

Cluster	Talent Development Schools				Non-Talent Development Schools				Impact at Follow-Up				
	Follow-Up				Follow-Up				Year 1	Year 2	Year 3	Average <sup>a</sup>	
	Year 1	Year 2	Year 3	Average <sup>a</sup>	Year 1	Year 2	Year 3	Average <sup>a</sup>					
School A													
Earned required academic credits (%)	48.0	54.8	54.1	52.1	36.0	38.3	38.8	37.7					
Deviation from baseline	10.8	17.6	17.0	15.0	-1.9	0.5	0.9	-0.2	12.7 **	17.2 ***	16.0 ***	15.1 ***	
School B													
Earned required academic credits (%)	62.2	51.3	62.4	58.6	49.4	52.4	52.9	51.6					
Deviation from baseline	20.5	9.6	20.6	16.9	5.2	8.1	8.6	7.3	15.3 **	1.5	12.0	9.6 *	
School C													
Earned required academic credits (%)	59.9	56.1		58.0	51.4	53.0		52.2					
Deviation from baseline	21.4	17.6		19.5	6.2	7.9		7.1	15.1 *	9.7		12.4 **	
School D													
Earned required academic credits (%)	45.6			45.6	57.5			57.5					
Deviation from baseline	6.8			6.8	4.4			4.4	2.4			2.4	
School E													
Earned required academic credits (%)	65.5			65.5	53.6			53.6					
Deviation from baseline	6.1			6.1	2.6			2.6	3.5			3.5	
All clusters <sup>b</sup>													
Earned required academic credits (%)	56.3	54.1	58.2	56.0	49.6	47.9	45.8	50.5					
Deviation from baseline	13.1	14.9	18.8	12.8	3.3	5.5	4.8	4.2	9.8 ***	9.5 **	14.0 ***	8.6 ***	
Effect size									0.21	0.20	0.29	0.18	

(continued)

**Table FT.5 (continued)**

SOURCE: MDRC calculations from individual students' school records from a large, urban school district.

NOTES: Sample includes 9th-grade students from five Talent Development high schools and seven non-Talent Development high schools. Students in the sample were included on the district's transcript and attendance records. The sample excludes students who did not attempt at least one credit during a given school year. First-time 9th-grade students were defined as students whose records indicate that they were in 9th grade in the year under study and in 8th grade in the previous year's administrative data file.

Clusters consisted of a Talent Development school matched with a group of between two and five non-Talent Development schools. Some non-Talent Development schools were counted in more than one cluster.

The deviation from the baseline for Year 1, Year 2, and Year 3 was calculated as the difference between the baseline average and the Year 1, Year 2, and Year 3 averages, respectively.

The impacts for Year 1, Year 2, Year 3, and the average were calculated as the difference between the deviation from the baseline for Talent Development schools and the deviation from the baseline for the non-Talent Development schools.

Blank spaces under the Year 1, Year 2, and Year 3 columns indicate that, at the time of analysis, some clusters had not yet completed a second or third year of implementation.

Estimates are regression-adjusted using ordinary least squares, controlling for 7th-grade math and reading SAT-9 test scores, race, and whether a student had repeated a prior grade. (For the full 9th-grade sample, the analysis also controls for whether students were repeating the 9th grade.)

A two-tailed t-test was applied to the impacts, which are differences in deviations from baseline between Talent Development and non-Talent Development schools. Standard errors and statistical significance levels are adjusted to account for cohort effects. Statistical significance levels are indicated as: \*\*\* = 1 percent; \*\* = 5 percent; \* = 10 percent.

<sup>a</sup>The numbers in the average columns reflect the average outcome for all students in the sample over the years of available follow-up data for each cluster. The length of the follow-up period varies by cluster. Two of the earliest implementing clusters have a three-year follow-up period, one cluster has a two-year follow-up period, and two clusters have only a one-year follow-up period. This column does not reflect the average of one, two, or three follow-up year means, which are also included in the table.

<sup>b</sup>All cluster averages are calculated vertically with the available data for each follow-up year and the overall average.

Talent Development Evaluation

Table FT.6

Interrupted Time Series Estimates and Impacts on Promotion Rates  
Three-Year Follow-Up Results, by Cluster  
First-Time Ninth-Grade Students

Cluster	Talent Development Schools				Non-Talent Development Schools				Impact at Follow-Up			
	Follow-Up				Follow-Up				Year 1	Year 2	Year 3	Average <sup>a</sup>
	Year 1	Year 2	Year 3	Average <sup>a</sup>	Year 1	Year 2	Year 3	Average <sup>a</sup>				
School A												
Promoted to 10th grade (%)	58.0	55.9		57.0	51.4	52.8		52.1				
Deviation from baseline	1.8	-0.3		0.8	-10.3	-8.9		-9.6	12.1	8.6	-8.9	10.4
School B												
Promoted to 10th grade (%)	75.6	72.4		74.0	56.0	61.1		58.6				
Deviation from baseline	10.2	7.1		8.6	-7.7	-2.7		-5.2	18.0	9.7	-2.7	13.8 *
School C												
Promoted to 10th grade (%)	70.4			70.4	62.3			62.3				
Deviation from baseline	10.0			10.0	3.1			3.1	6.9			6.9
School D												
Promoted to 10th grade (%)												
Deviation from baseline												
School E												
Promoted to 10th grade (%)												
Deviation from baseline												
All clusters <sup>b</sup>												
Promoted to 10th grade (%)	68.0	64.1		67.1	56.6	56.9		57.7				
Deviation from baseline	7.3	3.4		6.5	-5.0	-5.8		-3.9	12.3	9.2	-5.8	10.4 **
Effect size									0.25	0.18		0.21

(continued)

### Table FT.6 (continued)

SOURCE: MDRC calculations from individual students' school records from a large, urban school district.

NOTES: Sample includes 9th-grade students from five Talent Development high schools and seven non-Talent Development high schools. Students in the sample were included on the district's transcript and attendance records. The sample excludes students who did not attempt at least one credit during a given school year. First-time 9th-grade students were defined as students whose records indicate that they were in 9th grade in the year under study and in 8th grade in the previous year's administrative data file.

Clusters consisted of a Talent Development school matched with a group of between two and five non-Talent Development schools. Some non-Talent Development schools were counted in more than one cluster.

The deviation from the baseline for Year 1, Year 2, and Year 3 was calculated as the difference between the baseline average and the Year 1, Year 2, and Year 3 averages, respectively.

The impacts for Year 1, Year 2, Year 3, and the average were calculated as the difference between the deviation from the baseline for Talent Development schools and the deviation from the baseline for the non-Talent Development schools.

Blank spaces under the Year 1, Year 2, and Year 3 columns indicate that, at the time of analysis, some clusters had not yet completed a second or third year of implementation.

Estimates are regression-adjusted using ordinary least squares, controlling for 7th-grade math and reading SAT-9 test scores, race, and whether a student had repeated a prior grade. (For the full 9th-grade sample, the analysis also controls for whether students were repeating the 9th grade.)

A two-tailed t-test was applied to the impacts, which are differences in deviations from baseline between Talent Development and non-Talent Development schools. Standard errors and statistical significance levels are adjusted to account for cohort effects. Statistical significance levels are indicated as: \*\*\* = 1 percent; \*\* = 5 percent; \* = 10 percent.

<sup>a</sup>The numbers in the average columns reflect the average outcome for all students in the sample over the years of available follow-up data for each cluster. The length of the follow-up period varies by cluster. Two of the earliest implementing clusters have a three-year follow-up period, one cluster has a two-year follow-up period, and two clusters have only a one-year follow-up period. This column does not reflect the average of one, two, or three follow-up year means, which are also included in the table.

<sup>b</sup>All cluster averages are calculated vertically with the available data for each follow-up year and the overall average.

Talent Development Evaluation

Table FT.7

Interrupted Time Series Estimates and Impacts on Attendance Rates  
Three-Year Follow-Up Results, by Cluster  
First-Time Ninth-Grade Students

Cluster	Talent Development Schools				Non-Talent Development Schools				Impact at Follow-Up			
	Follow-Up				Follow-Up				Year 1	Year 2	Year 3	Average <sup>a</sup>
	Year 1	Year 2	Year 3	Average <sup>a</sup>	Year 1	Year 2	Year 3	Average <sup>a</sup>	Year 1	Year 2	Year 3	Average <sup>a</sup>
School A												
Attendance rate	72.5	75.2	74.4	74.0	70.5	73.1	70.0	71.2				
Deviation from baseline	1.9	4.6	3.9	3.4	0.4	3.0	-0.1	1.2	1.5	1.6	3.9	2.3
School B												
Attendance rate	79.3	78.9	76.4	78.2	76.0	77.5	75.8	76.4				
Deviation from baseline	7.9	7.5	4.9	6.8	0.5	2.0	0.3	0.9	7.4 **	5.5	4.7	5.8 **
School C												
Attendance rate	80.3	79.7		80.0	77.7	75.9		76.8				
Deviation from baseline	10.4	9.7		10.1	1.8	0.0		0.9	8.6 ***	9.7 ***		9.1 ***
School D												
Attendance rate	71.3			71.3	78.3			78.3				
Deviation from baseline	-2.5			-2.5	-0.9			-0.9	-1.6			-1.6
School E												
Attendance rate	74.2			74.2	75.6			75.6				
Deviation from baseline	-3.5			-3.5	-0.8			-0.8	-2.7			-2.7
All clusters <sup>b</sup>												
Attendance rate	75.5	77.9	75.4	75.5	75.6	75.5	72.9	75.7				
Deviation from baseline	2.8	7.3	4.4	2.8	0.2	1.7	0.1	0.2	2.6 **	5.6 ***	4.3 *	2.6 ***
Effect size									0.09	0.19	0.14	0.09

(continued)

### Table FT.7 (continued)

SOURCE: MDRC calculations from individual students' school records from a large, urban school district.

NOTES: Sample includes 9th-grade students from five Talent Development high schools and seven non-Talent Development high schools. Students in the sample were included on the district's transcript and attendance records. The sample excludes students who did not attempt at least one credit during a given school year. First-time 9th-grade students were defined as students whose records indicate that they were in 9th grade in the year under study and in 8th grade in the previous year's administrative data file.

Clusters consisted of a Talent Development school matched with a group of between two and five non-Talent Development schools. Some non-Talent Development schools were counted in more than one cluster.

The deviation from the baseline for Year 1, Year 2, and Year 3 was calculated as the difference between the baseline average and the Year 1, Year 2, and Year 3 averages, respectively.

The impacts for Year 1, Year 2, Year 3, and the average were calculated as the difference between the deviation from the baseline for Talent Development schools and the deviation from the baseline for the non-Talent Development schools.

Blank spaces under the Year 1, Year 2, and Year 3 columns indicate that, at the time of analysis, some clusters had not yet completed a second or third year of implementation.

Estimates are regression-adjusted using ordinary least squares, controlling for 7th-grade math and reading SAT-9 test scores, race, and whether a student had repeated a prior grade. (For the full 9th-grade sample, the analysis also controls for whether students were repeating the 9th grade.)

A two-tailed t-test was applied to the impacts, which are differences in deviations from baseline between Talent Development and non-Talent Development schools. Standard errors and statistical significance levels are adjusted to account for cohort effects. Statistical significance levels are indicated as: \*\*\* = 1 percent; \*\* = 5 percent; \* = 10 percent.

<sup>a</sup>The numbers in the average columns reflect the average outcome for all students in the sample over the years of available follow-up data for each cluster. The length of the follow-up period varies by cluster. Two of the earliest implementing clusters have a three-year follow-up period, one cluster has a two-year follow-up period, and two clusters have only a one-year follow-up period. This column does not reflect the average of one, two, or three follow-up year means, which are also included in the table.

<sup>b</sup>All cluster averages are calculated vertically with the available data for each follow-up year and the overall average.

Talent Development Evaluation

Table FT.8

Interrupted Time Series Estimates and Impacts on  
 Percentage of Students with Attendance Rates Greater Than or Equal to 90 Percent  
 Three-Year Follow-up Results, by Cluster  
 First-Time Ninth-Grade Students

Cluster	Talent Development Schools				Non-Talent Development Schools				Impact at Follow-Up			
	Follow-Up			Average <sup>a</sup>	Follow-Up			Average <sup>a</sup>	Year 1	Year 2	Year 3	Average <sup>a</sup>
Year 1	Year 2	Year 3	Year 1		Year 2	Year 3						
School A												
Attendance rate of 90% or higher (%)	21.3	23.3	26.5	23.5	18.4	19.6	19.0	19.1				
Deviation from baseline	4.7	6.7	10.0	6.9	-0.4	0.9	0.3	0.3	5.1	5.9	9.7 **	6.6 **
School B												
Attendance rate of 90% or higher (%)	28.5	34.2	29.7	30.8	25.8	28.0	25.4	26.4				
Deviation from baseline	6.0	11.6	7.2	8.3	0.8	3.0	0.4	1.4	5.2	8.6	6.8	6.9
School C												
Attendance rate of 90% or higher (%)	36.3	31.6		34.0	28.8	26.2		27.5				
Deviation from baseline	22.9	18.3		20.6	2.9	0.3		1.6	20.0 ***	17.9 ***		18.9 ***
School D												
Attendance rate of 90% or higher (%)	20.3			20.3	30.3			30.3				
Deviation from baseline	-2.5			-2.5	-1.2			-1.2	-1.3			-1.3
School E												
Attendance rate of 90% or higher (%)	24.6			24.6	25.4			25.4				
Deviation from baseline	-6.1			-6.1	-1.1			-1.1	-5.0			-5.0
All clusters <sup>b</sup>												
Attendance rate of 90% or higher (%)	26.2	29.7	28.1	26.6	25.7	24.6	22.2	25.7				
Deviation from baseline	5.0	12.2	8.6	5.4	0.2	1.4	0.3	0.2	4.8 **	10.8 ***	8.2 **	5.2 ***
Effect size									0.16	0.36	0.27	0.13

(continued)

**Table FT.8 (continued)**

SOURCE: MDRC calculations from individual students' school records from a large, urban school district.

NOTES: Sample includes 9th-grade students from five Talent Development high schools and seven non-Talent Development high schools. Students in the sample were included on the district's transcript and attendance records. The sample excludes students who did not attempt at least one credit during a given school year. First-time 9th-grade students were defined as students whose records indicate that they were in 9th grade in the year under study and in 8th grade in the previous year's administrative data file.

Clusters consisted of a Talent Development school matched with a group of between two and five non-Talent Development schools. Some non-Talent Development schools were counted in more than one cluster.

The deviation from the baseline for Year 1, Year 2, and Year 3 was calculated as the difference between the baseline average and the Year 1, Year 2, and Year 3 averages, respectively.

The impacts for Year 1, Year 2, Year 3, and the average were calculated as the difference between the deviation from the baseline for Talent Development schools and the deviation from the baseline for the non-Talent Development schools.

Blank spaces under the Year 1, Year 2, and Year 3 columns indicate that, at the time of analysis, some clusters had not yet completed a second or third year of implementation.

Estimates are regression-adjusted using ordinary least squares, controlling for 7th-grade math and reading SAT-9 test scores, race, and whether a student had repeated a prior grade. (For the full 9th-grade sample, the analysis also controls for whether students were repeating the 9th grade.)

A two-tailed t-test was applied to the impacts, which are differences in deviations from baseline between Talent Development and non-Talent Development schools. Standard errors and statistical significance levels are adjusted to account for cohort effects. Statistical significance levels are indicated as: \*\*\* = 1 percent; \*\* = 5 percent; \* = 10 percent.

<sup>a</sup>The numbers in the average columns reflect the average outcome for all students in the sample over the years of available follow-up data for each cluster. The length of the follow-up period varies by cluster. Two of the earliest implementing clusters have a three-year follow-up period, one cluster has a two-year follow-up period, and two clusters have only a one-year follow-up period. This column does not reflect the average of one, two, or three follow-up year means, which are also included in the table.

<sup>b</sup>All cluster averages are calculated vertically with the available data for each follow-up year and the overall average.

Talent Development Evaluation

Table FT.9

Interrupted Time Series Estimates and Impacts on  
Percentage of Students with Attendance Rates Less Than or Equal to 80 Percent  
Three-Year Follow-Up Results, by Cluster  
First-Time Ninth-Grade Students

Cluster	Talent Development Schools				Non-Talent Development Schools				Impact at Follow-Up				
	Follow-Up				Follow-Up				Year 1	Year 2	Year 3	Average <sup>a</sup>	
	Year 1	Year 2	Year 3	Average <sup>a</sup>	Year 1	Year 2	Year 3	Average <sup>a</sup>					
School A													
Attendance rate of 80% or lower (%)	57.0	53.9	52.8	54.7	63.4	61.6	60.3	61.8					
Deviation from baseline	-4.5	-7.5	-8.7	-6.7	1.1	-0.6	-2.0	-0.5	-5.6	-6.9	-6.7		-6.2 *
School B													
Attendance rate of 80% or lower (%)	42.3	48.2	48.9	46.5	51.9	48.3	50.2	50.1					
Deviation from baseline	-14.5	-8.7	-8.0	-10.4	-0.4	-4.0	-2.1	-2.2	-14.2 *	-4.8	-5.9		-8.2
School C													
Attendance rate of 80% or lower (%)	43.1	46.5		44.8	47.3	48.3		47.8					
Deviation from baseline	-24.5	-21.1		-22.8	-4.7	-3.6		-4.2	-19.8 ***	-17.4 ***			-18.6 ***
School D													
Attendance rate of 80% or lower (%)	63.5			63.5	42.6			42.6					
Deviation from baseline	8.1			8.1	-1.2			-1.2	9.3 *				9.3 *
School E													
Attendance rate of 80% or lower (%)	52.7			52.7	50.4			50.4					
Deviation from baseline	6.0			6.0	-0.4			-0.4	6.4				6.4
All clusters <sup>b</sup>													
Attendance rate of 80% or lower (%)	51.7	49.5	50.8	52.4	51.1	52.7	55.2	50.5					
Deviation from baseline	-5.9	-12.4	-8.3	-5.2	-1.1	-2.7	-2.0	-1.7	-4.8 *	-9.7 ***	-6.3		-3.5
Effect size									-0.16	-0.32	-0.21		-0.07

(continued)

**Table FT.9 (continued)**

SOURCE: MDRC calculations from individual students' school records from a large, urban school district.

NOTES: Sample includes 9th-grade students from five Talent Development high schools and seven non-Talent Development high schools. Students in the sample were included on the district's transcript and attendance records. The sample excludes students who did not attempt at least one credit during a given school year. First-time 9th-grade students were defined as students whose records indicate that they were in 9th grade in the year under study and in 8th grade in the previous year's administrative data file.

Clusters consisted of a Talent Development school matched with a group of between two and five non-Talent Development schools. Some non-Talent Development schools were counted in more than one cluster.

The deviation from the baseline for Year 1, Year 2, and Year 3 was calculated as the difference between the baseline average and the Year 1, Year 2, and Year 3 averages, respectively.

The impacts for Year 1, Year 2, Year 3, and the average were calculated as the difference between the deviation from the baseline for Talent Development schools and the deviation from the baseline for the non-Talent Development schools.

Blank spaces under the Year 1, Year 2, and Year 3 columns indicate that, at the time of analysis, some clusters had not yet completed a second or third year of implementation.

Estimates are regression-adjusted using ordinary least squares, controlling for 7th-grade math and reading SAT-9 test scores, race, and whether a student had repeated a prior grade. (For the full 9th-grade sample, the analysis also controls for whether students were repeating the 9th grade.)

A two-tailed t-test was applied to the impacts, which are differences in deviations from baseline between Talent Development and non-Talent Development schools. Standard errors and statistical significance levels are adjusted to account for cohort effects. Statistical significance levels are indicated as: \*\*\* = 1 percent; \*\* = 5 percent; \* = 10 percent.

<sup>a</sup>The numbers in the average columns reflect the average outcome for all students in the sample over the years of available follow-up data for each cluster. The length of the follow-up period varies by cluster. Two of the earliest implementing clusters have a three-year follow-up period, one cluster has a two-year follow-up period, and two clusters have only a one-year follow-up period. This column does not reflect the average of one, two, or three follow-up year means, which are also included in the table.

<sup>b</sup>All cluster averages are calculated vertically with the available data for each follow-up year and the overall average.

**Talent Development Evaluation**  
**Table FT.Summary**  
**Impacts on Attendance, Course-Taking, and Promotion**  
**Follow-Up Results**  
**First-Time Ninth-Grade Students**

Outcome	Talent Development Schools		Non-Talent Development Schools		Impact at Follow-Up	Impact Effect Size
	Baseline	Follow-Up	Baseline	Follow-Up		
Earned at least 1 English credit for the year (%)	65.4	76.2	67.3	68.7		
Deviation from baseline		10.8 ***		1.4	9.4 ***	0.19
Earned at least 1 algebra credit for the year (%)	32.8	60.2	44.0	52.8		
Deviation from baseline		27.3 ***		8.9 ***	18.5 ***	0.41
Earned at least 1 math credit for the year (%)	55.8	72.1	63.9	68.5		
Deviation from baseline		16.3 ***		4.6 ***	11.7 ***	0.23
Earned 4 or more credits for the year <sup>a</sup> (%)	61.9	69.8	65.9	66.2		
Deviation from baseline		7.9 ***		0.3	7.6 ***	0.15
Earned required academic credits <sup>b</sup> (%)	43.2	56.0	46.3	50.5		
Deviation from baseline		12.8 ***		4.2 ***	8.6 ***	0.18
Promoted to 10th grade <sup>c</sup> (%)	60.7	67.1	61.6	57.7		
Deviation from baseline		6.5		-3.9 *	10.4 **	0.21
Attendance rate <sup>d</sup>	72.7	75.5	75.4	75.7		
Deviation from baseline		2.8 ***		0.2	2.6 ***	0.09
Attendance rate of 90% or higher (%)	21.2	26.6	25.5	25.7		
Deviation from baseline		5.4 ***		0.2	5.2 ***	0.13
Attendance rate of 80% or lower (%)	57.6	52.4	52.2	50.5		
Deviation from baseline		-5.2 ***		-1.7 *	-3.5	-0.07

(continued)

SOURCE: MDRC calculations from individual students' school records from a large, urban school district.

NOTES: Sample includes 9th-grade students from five Talent Development high schools and seven non-Talent Development high schools. Students in the sample were included on the district's transcript and attendance records. The sample excludes students who did not attempt at least one credit during a given school year. First-time 9th-grade students were defined as students whose records indicate that they were in the 9th grade in the year under study and in the 8th grade in the previous year's administrative data file.

Results in the Talent Development columns reflect averages across the five Talent Development schools. Results in the non-Talent Development columns reflect averages across five clusters of non-Talent Development schools. Each cluster consisted of between two and five non-Talent Development schools. Some non-Talent Development schools were counted in more than one cluster.

Numbers in the "Baseline" columns reflect averages over the three-year period prior to the initial implementation of Talent Development for a given cluster.

### Table FT.Summary (continued)

Numbers in the "Follow-Up" columns reflect averages over the entire follow-up period. The length of the follow-up period varies by cluster. Two of the earliest implementing clusters had a three-year follow-up period, one cluster had a two-year follow-up period, and two clusters had only a one-year follow-up period.

The deviation from baseline, indicated in the row directly below each outcome, reflects the difference between the baseline average and the average over the follow-up period.

The impact was calculated as the difference between the deviation from the baseline for Talent Development schools and the deviation from the baseline for non-Talent Development schools.

The impact effect size was calculated by dividing the impact by the standard deviation of the outcome for all 9th-grade students in the district's nonselective, comprehensive high schools from school years 1996-1997 to 1998-1999.

Estimates are regression-adjusted using ordinary least squares, controlling for 7th-grade math and reading SAT-9 test scores, race, and whether a student had repeated a prior grade. (For the full 9th-grade sample, the analysis also controls for whether students were repeating the 9th grade.)

A two-tailed t-test was applied to deviations from baseline and to differences in deviations from baseline between Talent Development and non-Talent Development schools. Standard errors and statistical significance levels are adjusted to account for cohort effects. Statistical significance levels are indicated as: \*\*\* = 1 percent; \*\* = 5 percent; \* = 10 percent.

<sup>a</sup>Until the 1998-1999 school year, 9th-grade students in the district were required to earn four course credits in order to be promoted.

<sup>b</sup>Beginning in the 1998-1999 school year, 9th-grade students were required to earn at least five course credits, including one credit each in English, math, and science.

<sup>c</sup>For the purposes of this analysis, 9th-grade students were considered promoted if they were listed as 10th-graders in the next year's administrative data file. Discrepancies between the percentage of students meeting various promotion requirements and the promotion rate may be caused by students earning some credits in previous years, incomplete course-detail records, or inconsistent application of the promotion requirements. Due to data availability, this outcome includes data for only three of the five clusters of Talent Development and non-Talent Development schools.

<sup>d</sup>Attendance rates were calculated for each student by dividing the number of days the student was present by the total number of days the student was enrolled in a given school year.



**Unit 2c**

**Supplementary Tables**

**Impacts for Repeating Ninth-Grade Students**

Talent Development Evaluation

Table RP.1

Interrupted Time Series Estimates and Impacts on  
Percentage of Students Earning One or More English Credits for the Year  
Three-Year Follow-Up Results, by Cluster  
Repeating Ninth-Grade Students

Cluster	Talent Development Schools				Non-Talent Development Schools				Impact at Follow-Up			
	Follow-Up				Follow-Up				Year 1	Year 2	Year 3	Average <sup>a</sup>
	Year 1	Year 2	Year 3	Average <sup>a</sup>	Year 1	Year 2	Year 3	Average <sup>a</sup>	Year 1	Year 2	Year 3	Average <sup>a</sup>
School A												
Earned at least 1 English credit (%)	30.6	32.1	33.8	32.1	24.6	34.4	45.6	35.0				
Deviation from baseline	-0.6	0.9	2.5	0.9	-3.2	6.7	17.8	7.2	2.6	-5.8	-15.3 **	-6.3
School B												
Earned at least 1 English credit (%)	31.6	42.7	37.9	37.4	41.5	48.3	41.9	43.9				
Deviation from baseline	10.6	21.7	16.9	16.4	2.6	9.4	3.0	5.0	8.0	12.3	13.9	11.4
School C												
Earned at least 1 English credit (%)	40.9	33.6		37.4	49.3	42.4		45.8				
Deviation from baseline	1.2	-6.1		-2.4	10.2	3.2		6.6	-9.0	-9.3		-9.0
School D												
Earned at least 1 English credit (%)	38.0			38.0	45.9			45.9				
Deviation from baseline	-1.2			-1.2	0.1			0.1	-1.4			-1.4
School E												
Earned at least 1 English credit (%)	50.9			50.9	42.0			42.0				
Deviation from baseline	4.2			4.2	-3.0			-3.0	7.2			7.2
All clusters <sup>b</sup>												
Earned at least 1 English credit (%)	38.4	36.2	35.8	39.1	40.7	41.7	43.8	42.5				
Deviation from baseline	2.8	5.5	9.7	3.6	1.3	6.4	10.4	3.2	1.5	-0.9	-0.7	0.4
Effect size									0.03	-0.02	-0.01	0.01

(continued)

### Table RP.1 (continued)

SOURCE: MDRC calculations from individual students' school records from a large, urban school district.

NOTES: Sample includes 9th-grade students from five Talent Development high schools and seven non-Talent Development high schools. Students in the sample were included on the district's transcript and attendance records. The sample excludes students who did not attempt at least one credit during a given school year. Repeating 9th-grade students were defined as students whose records indicate that they were in 9th grade in the year under study and were also in 9th grade in the previous year's administrative data file.

Clusters consisted of a Talent Development school matched with a group of between two and five non-Talent Development schools. Some non-Talent Development schools were counted in more than one cluster.

The deviation from the baseline for Year 1, Year 2, and Year 3 was calculated as the difference between the baseline average and the Year 1, Year 2, and Year 3 averages, respectively.

The impacts for Year 1, Year 2, Year 3, and the average were calculated as the difference between the deviation from the baseline for Talent Development schools and the deviation from the baseline for the non-Talent Development schools.

Blank spaces under the Year 1, Year 2, and Year 3 columns indicate that, at the time of analysis, some clusters had not yet completed a second or third year of implementation.

Estimates are regression-adjusted using ordinary least squares, controlling for 7th-grade math and reading SAT-9 test scores, race, and whether a student had repeated a prior grade. (For the full 9th-grade sample, the analysis also controls for whether students were repeating the 9th grade.)

A two-tailed t-test was applied to the impacts, which are differences in deviations from baseline between Talent Development and non-Talent Development schools. Standard errors and statistical significance levels are adjusted to account for cohort effects. Statistical significance levels are indicated as: \*\*\* = 1 percent; \*\* = 5 percent; \* = 10 percent.

<sup>a</sup>The numbers in the average columns reflect the average outcome for all students in the sample over the years of available follow-up data for each cluster. The length of the follow-up period varies by cluster. Two of the earliest implementing clusters have a three-year follow-up period, one cluster has a two-year follow-up period, and two clusters have only a one-year follow-up period. This column does not reflect the average of one, two, or three follow-up year means, which are also included in the table.

<sup>b</sup>All cluster averages are calculated vertically with the available data for each follow-up year and the overall average.

Talent Development Evaluation

Table RP.2

Interrupted Time Series Estimates and Impacts on  
Percentage of Students Earning One or More Algebra Credits for the Year  
Three-Year Follow-Up Results, by Cluster  
Repeating Ninth-Grade Students

Cluster	Talent Development Schools				Non-Talent Development Schools				Impact at Follow-Up				
	Follow-Up				Follow-Up				Year 1	Year 2	Year 3	Average <sup>a</sup>	
	Year 1	Year 2	Year 3	Average <sup>a</sup>	Year 1	Year 2	Year 3	Average <sup>a</sup>					
School A													
Earned at least 1 algebra credit (%)	20.3	18.1	32.6	23.6	12.4	1.9	15.1	9.7					
Deviation from baseline	16.4	14.2	28.7	19.7	8.0	-2.5	10.7	5.3	8.4	16.7 **	18.0 **	14.4 **	
School B													
Earned at least 1 algebra credit (%)	18.9	35.7	24.4	26.4	14.1	26.8	21.6	20.8					
Deviation from baseline	4.2	21.0	9.7	11.7	-2.2	10.6	5.4	4.6	6.4	10.4	4.4	7.1	
School C													
Earned at least 1 algebra credit (%)	20.2	23.6		21.9	30.5	22.5		26.5					
Deviation from baseline	5.6	9.0		7.2	14.2	6.3		10.3	-8.7	2.7		-3.0	
School D													
Earned at least 1 algebra credit (%)	16.9			16.9	23.6			23.6					
Deviation from baseline	-9.3			-9.3	-2.0			-2.0	-7.3			-7.3	
School E													
Earned at least 1 algebra credit (%)	19.3			19.3	21.9			21.9					
Deviation from baseline	5.7			5.7	1.0			1.0	4.7			4.7	
All clusters <sup>b</sup>													
Earned at least 1 algebra credit (%)	19.1	25.8	28.5	21.6	20.5	17.1	18.4	20.5					
Deviation from baseline	4.5	14.7	19.2	7.0	3.8	4.8	8.0	3.8	0.7	9.9 **	11.2 *	3.2	
Effect size									0.02	0.22	0.25	0.07	

## Table RP.2 (continued)

SOURCE: MDRC calculations from individual students' school records from a large, urban school district.

NOTES: Sample includes 9th-grade students from five Talent Development high schools and seven non-Talent Development high schools. Students in the sample were included on the district's transcript and attendance records. The sample excludes students who did not attempt at least one credit during a given school year. Repeating 9th-grade students were defined as students whose records indicate that they were in 9th grade in the year under study and were also in 9th grade in the previous year's administrative data file.

Clusters consisted of a Talent Development school matched with a group of between two and five non-Talent Development schools. Some non-Talent Development schools were counted in more than one cluster.

The deviation from the baseline for Year 1, Year 2, and Year 3 was calculated as the difference between the baseline average and the Year 1, Year 2, and Year 3 averages, respectively.

The impacts for Year 1, Year 2, Year 3, and the average were calculated as the difference between the deviation from the baseline for Talent Development schools and the deviation from the baseline for the non-Talent Development schools.

Blank spaces under the Year 1, Year 2, and Year 3 columns indicate that, at the time of analysis, some clusters had not yet completed a second or third year of implementation.

Estimates are regression-adjusted using ordinary least squares, controlling for 7th-grade math and reading SAT-9 test scores, race, and whether a student had repeated a prior grade. (For the full 9th-grade sample, the analysis also controls for whether students were repeating the 9th grade.)

A two-tailed t-test was applied to the impacts, which are differences in deviations from baseline between Talent Development and non-Talent Development schools. Standard errors and statistical significance levels are adjusted to account for cohort effects. Statistical significance levels are indicated as: \*\*\* = 1 percent; \*\* = 5 percent; \* = 10 percent.

<sup>a</sup>The numbers in the average columns reflect the average outcome for all students in the sample over the years of available follow-up data for each cluster. The length of the follow-up period varies by cluster. Two of the earliest implementing clusters have a three-year follow-up period, one cluster has a two-year follow-up period, and two clusters have only a one-year follow-up period. This column does not reflect the average of one, two, or three follow-up year means, which are also included in the table.

<sup>b</sup>All cluster averages are calculated vertically with the available data for each follow-up year and the overall average.

Talent Development Evaluation

Table RP.3

Interrupted Time Series Estimates and Impacts on  
Percentage of Students Earning One or More Math Credits for the Year  
Three-Year Follow-Up Results, by Cluster  
Repeating Ninth-Grade Students

Cluster	Talent Development Schools				Non-Talent Development Schools				Impact at Follow-Up				
	Follow-Up				Follow-Up				Year 1	Year 2	Year 3	Average <sup>a</sup>	
	Year 1	Year 2	Year 3	Average <sup>a</sup>	Year 1	Year 2	Year 3	Average <sup>a</sup>					
School A													
Earned at least 1 math credit (%)	27.7	32.1	41.3	33.5	33.9	28.8	40.1	34.2					
Deviation from baseline	4.7	9.1	18.3	10.5	8.4	3.3	14.6	8.7	-3.7	5.7	3.7	1.8	
School B													
Earned at least 1 math credit (%)	36.0	40.2	28.9	35.3	37.0	44.0	37.0	39.3					
Deviation from baseline	15.9	20.0	8.7	15.1	-0.2	6.7	-0.3	2.1	16.1	13.3	9.0	13.0	
School C													
Earned at least 1 math credit (%)	35.6	30.0		32.9	44.4	36.6		40.4					
Deviation from baseline	6.7	1.2		4.0	6.4	-1.5		2.4	0.4	2.6		1.6	
School D													
Earned at least 1 math credit (%)	33.5			33.5	40.5			40.5					
Deviation from baseline	2.2			2.2	-3.6			-3.6	5.8			5.8	
School E													
Earned at least 1 math credit (%)	40.9			40.9	36.8			36.8					
Deviation from baseline	-3.9			-3.9	-4.4			-4.4	0.5			0.5	
All clusters <sup>b</sup>													
Earned at least 1 math credit (%)	34.7	34.1	35.1	35.2	38.5	36.5	38.5	38.3					
Deviation from baseline	5.1	10.1	13.5	5.6	1.3	2.9	7.2	1.1	3.8	7.2	6.3	4.5	
Effect size									0.08	0.14	0.13	0.09	

(continued)

### Table RP.3 (continued)

SOURCE: MDRC calculations from individual students' school records from a large, urban school district.

NOTES: Sample includes 9th-grade students from five Talent Development high schools and seven non-Talent Development high schools. Students in the sample were included on the district's transcript and attendance records. The sample excludes students who did not attempt at least one credit during a given school year. Repeating 9th-grade students were defined as students whose records indicate that they were in 9th grade in the year under study and were also in 9th grade in the previous year's administrative data file.

Clusters consisted of a Talent Development school matched with a group of between two and five non-Talent Development schools. Some non-Talent Development schools were counted in more than one cluster.

The deviation from the baseline for Year 1, Year 2, and Year 3 was calculated as the difference between the baseline average and the Year 1, Year 2, and Year 3 averages, respectively.

The impacts for Year 1, Year 2, Year 3, and the average were calculated as the difference between the deviation from the baseline for Talent Development schools and the deviation from the baseline for the non-Talent Development schools.

Blank spaces under the Year 1, Year 2, and Year 3 columns indicate that, at the time of analysis, some clusters had not yet completed a second or third year of implementation.

Estimates are regression-adjusted using ordinary least squares, controlling for 7th-grade math and reading SAT-9 test scores, race, and whether a student had repeated a prior grade. (For the full 9th-grade sample, the analysis also controls for whether students were repeating the 9th grade.)

A two-tailed t-test was applied to the impacts, which are differences in deviations from baseline between Talent Development and non-Talent Development schools. Standard errors and statistical significance levels are adjusted to account for cohort effects. Statistical significance levels are indicated as: \*\*\* = 1 percent; \*\* = 5 percent; \* = 10 percent.

<sup>a</sup>The numbers in the average columns reflect the average outcome for all students in the sample over the years of available follow-up data for each cluster. The length of the follow-up period varies by cluster. Two of the earliest implementing clusters have a three-year follow-up period, one cluster has a two-year follow-up period, and two clusters have only a one-year follow-up period. This column does not reflect the average of one, two, or three follow-up year means, which are also included in the table.

<sup>b</sup>All cluster averages are calculated vertically with the available data for each follow-up year and the overall average.

Talent Development Evaluation

Table RP.4

Interrupted Time Series Estimates and Impacts on  
Percentage of Students Earning Four or More Credits for the Year  
Three-Year Follow-Up Results, by Cluster  
Repeating Ninth-Grade Students

Cluster	Talent Development Schools				Non-Talent Development Schools				Impact at Follow-Up			
	Follow-Up				Follow-Up				Year 1	Year 2	Year 3	Average <sup>a</sup>
	Year 1	Year 2	Year 3	Average <sup>a</sup>	Year 1	Year 2	Year 3	Average <sup>a</sup>				
School A												
Earned 4 or more credits (%)	34.4	31.9	30.6	32.3	32.2	27.1	41.1	33.4				
Deviation from baseline	3.9	1.4	0.1	1.8	10.3	5.2	19.2	11.5	-6.5	-3.8	-19.1	-9.7
School B												
Earned 4 or more credits (%)	17.0	33.4	15.6	22.3	35.0	38.3	34.7	36.0				
Deviation from baseline	-0.9	15.5	-2.3	4.4	0.5	3.9	0.3	1.5	-1.4	11.7	-2.5	2.9
School C												
Earned 4 or more credits (%)	37.0	26.2		31.9	38.6	34.3		36.4				
Deviation from baseline	-2.3	-13.1		-7.3	3.7	-0.6		1.4	-6.0	-12.5 *		-8.8
School D												
Earned 4 or more credits (%)	28.2			28.2	37.6			37.6				
Deviation from baseline	-2.5			-2.5	-2.6			-2.6	0.1			0.1
School E												
Earned 4 or more credits (%)	45.5			45.5	34.6			34.6				
Deviation from baseline	0.6			0.6	-3.0			-3.0	3.6			3.6
All clusters <sup>b</sup>												
Earned 4 or more credits (%)	32.4	30.5	23.1	32.0	35.6	33.2	37.9	35.6				
Deviation from baseline	-0.2	1.3	-1.1	-0.6	1.8	2.8	9.7	1.8	-2.0	-1.5	-10.8	-2.4
Effect size									-0.04	-0.03	-0.22	-0.05

(continued)

#### Table RP.4 (continued)

SOURCE: MDRC calculations from individual students' school records from a large, urban school district.

NOTES: Sample includes 9th-grade students from five Talent Development high schools and seven non-Talent Development high schools. Students in the sample were included on the district's transcript and attendance records. The sample excludes students who did not attempt at least one credit during a given school year. Repeating 9th-grade students were defined as students whose records indicate that they were in 9th grade in the year under study and were also in 9th grade in the previous year's administrative data file.

Clusters consisted of a Talent Development school matched with a group of between two and five non-Talent Development schools. Some non-Talent Development schools were counted in more than one cluster.

The deviation from the baseline for Year 1, Year 2, and Year 3 was calculated as the difference between the baseline average and the Year 1, Year 2, and Year 3 averages, respectively.

The impacts for Year 1, Year 2, Year 3, and the average were calculated as the difference between the deviation from the baseline for Talent Development schools and the deviation from the baseline for the non-Talent Development schools.

Blank spaces under the Year 1, Year 2, and Year 3 columns indicate that, at the time of analysis, some clusters had not yet completed a second or third year of implementation.

Estimates are regression-adjusted using ordinary least squares, controlling for 7th-grade math and reading SAT-9 test scores, race, and whether a student had repeated a prior grade. (For the full 9th-grade sample, the analysis also controls for whether students were repeating the 9th grade.)

A two-tailed t-test was applied to the impacts, which are differences in deviations from baseline between Talent Development and non-Talent Development schools. Standard errors and statistical significance levels are adjusted to account for cohort effects. Statistical significance levels are indicated as: \*\*\* = 1 percent; \*\* = 5 percent; \* = 10 percent.

<sup>a</sup>The numbers in the average columns reflect the average outcome for all students in the sample over the years of available follow-up data for each cluster. The length of the follow-up period varies by cluster. Two of the earliest implementing clusters have a three-year follow-up period, one cluster has a two-year follow-up period, and two clusters have only a one-year follow-up period. This column does not reflect the average of one, two, or three follow-up year means, which are also included in the table.

<sup>b</sup>All cluster averages are calculated vertically with the available data for each follow-up year and the overall average.

Talent Development Evaluation

Table RP.5

Interrupted Time Series Estimates and Impacts on Percentage of Students  
Earning Required Academic Credits  
Three-Year Follow-Up Results, by Cluster  
Repeating Ninth-Grade Students

Cluster	Talent Development Schools				Non-Talent Development Schools				Impact at Follow-Up			
	Follow-Up				Follow-Up				Year 1	Year 2	Year 3	Average <sup>a</sup>
	Year 1	Year 2	Year 3	Average <sup>a</sup>	Year 1	Year 2	Year 3	Average <sup>a</sup>				
School A												
Earned required academic credits (%)	12.7	9.6	15.5	12.6	9.8	13.4	24.2	15.8				
Deviation from baseline	2.6	-0.5	5.4	2.5	-0.2	3.5	14.2	5.8	2.8	-3.9	-8.9	-3.4
School B												
Earned required academic credits (%)	8.3	12.7	11.1	10.7	18.6	17.7	17.1	17.8				
Deviation from baseline	-1.6	2.8	1.2	0.7	0.6	-0.4	-1.0	-0.2	-2.2	3.1	2.2	1.0
School C												
Earned required academic credits (%)	18.1	8.6		13.6	16.1	16.9		16.5				
Deviation from baseline	4.5	-5.0		0.0	-2.1	-1.3		-1.7	6.6	-3.7		1.7
School D												
Earned required academic credits (%)	13.0			13.0	19.0			19.0				
Deviation from baseline	-4.1			-4.1	-0.7			-0.7	-3.5			-3.5
School E												
Earned required academic credits (%)	18.2			18.2	16.9			16.9				
Deviation from baseline	-7.8			-7.8	-2.7			-2.7	-5.1			-5.1
All clusters <sup>b</sup>												
Earned required academic credits (%)	14.1	10.3	13.3	13.6	16.1	16.0	20.6	17.2				
Deviation from baseline	-1.3	-0.9	3.3	-1.7	-1.0	0.6	6.6	0.1	-0.3	-1.5	-3.3	-1.9
Effect size									-0.01	-0.03	-0.07	-0.04

(continued)

### Table RP.5 (continued)

SOURCE: MDRC calculations from individual students' school records from a large, urban school district.

NOTES: Sample includes 9th-grade students from five Talent Development high schools and seven non-Talent Development high schools. Students in the sample were included on the district's transcript and attendance records. The sample excludes students who did not attempt at least one credit during a given school year. Repeating 9th-grade students were defined as students whose records indicate that they were in 9th grade in the year under study and were also in 9th grade in the previous year's administrative data file.

Clusters consisted of a Talent Development school matched with a group of between two and five non-Talent Development schools. Some non-Talent Development schools were counted in more than one cluster.

The deviation from the baseline for Year 1, Year 2, and Year 3 was calculated as the difference between the baseline average and the Year 1, Year 2, and Year 3 averages, respectively.

The impacts for Year 1, Year 2, Year 3, and the average were calculated as the difference between the deviation from the baseline for Talent Development schools and the deviation from the baseline for the non-Talent Development schools.

Blank spaces under the Year 1, Year 2, and Year 3 columns indicate that, at the time of analysis, some clusters had not yet completed a second or third year of implementation.

Estimates are regression-adjusted using ordinary least squares, controlling for 7th-grade math and reading SAT-9 test scores, race, and whether a student had repeated a prior grade. (For the full 9th-grade sample, the analysis also controls for whether students were repeating the 9th grade.)

A two-tailed t-test was applied to the impacts, which are differences in deviations from baseline between Talent Development and non-Talent Development schools. Standard errors and statistical significance levels are adjusted to account for cohort effects. Statistical significance levels are indicated as: \*\*\* = 1 percent; \*\* = 5 percent; \* = 10 percent.

<sup>a</sup>The numbers in the average columns reflect the average outcome for all students in the sample over the years of available follow-up data for each cluster. The length of the follow-up period varies by cluster. Two of the earliest implementing clusters have a three-year follow-up period, one cluster has a two-year follow-up period, and two clusters have only a one-year follow-up period. This column does not reflect the average of one, two, or three follow-up year means, which are also included in the table.

<sup>b</sup>All cluster averages are calculated vertically with the available data for each follow-up year and the overall average.

Talent Development Evaluation

Table RP.6

Interrupted Time Series Estimates and Impacts on Promotion Rates  
Three-Year Follow-Up Results, by Cluster  
Repeating Ninth-Grade Students

Cluster	Talent Development Schools				Non-Talent Development Schools				Impact at Follow-Up				
	Follow-Up				Follow-Up				Year 1	Year 2	Year 3	Average <sup>a</sup>	
	Year 1	Year 2	Year 3	Average <sup>a</sup>	Year 1	Year 2	Year 3	Average <sup>a</sup>					
School A													
Promoted to 10th grade (%)	29.4	30.3		29.8	39.3	39.5		39.5					
Deviation from baseline	-10.4	-9.5		-10.0	3.6	3.7		3.8	-14.0	-13.3			-13.7 **
School B													
Promoted to 10th grade (%)	27.0	52.8		39.9	47.7	44.4		46.1					
Deviation from baseline	-8.6	17.1		4.2	-3.1	-6.5		-4.8	-5.5	23.6			9.0
School C													
Promoted to 10th grade (%)	48.1			48.1	44.6		44.6						
Deviation from baseline	-2.7			-2.7	-5.0		-5.0		2.3				2.3
School D													
Promoted to 10th grade (%)													
Deviation from baseline													
School E													
Promoted to 10th grade (%)													
Deviation from baseline													
All clusters <sup>b</sup>													
Promoted to 10th grade (%)	34.9	41.6		39.3	43.9	41.9		43.4					
Deviation from baseline	-7.3	3.8		-2.8	-1.5	-1.4		-2.0	-5.7	5.2			-0.8
Effect size									-0.12	0.10			-0.02

(continued)

### Table RP.6 (continued)

SOURCE: MDRC calculations from individual students' school records from a large, urban school district.

NOTES: Sample includes 9th-grade students from five Talent Development high schools and seven non-Talent Development high schools. Students in the sample were included on the district's transcript and attendance records. The sample excludes students who did not attempt at least one credit during a given school year. Repeating 9th-grade students were defined as students whose records indicate that they were in 9th grade in the year under study and were also in 9th grade in the previous year's administrative data file.

Clusters consisted of a Talent Development school matched with a group of between two and five non-Talent Development schools. Some non-Talent Development schools were counted in more than one cluster.

The deviation from the baseline for Year 1, Year 2, and Year 3 was calculated as the difference between the baseline average and the Year 1, Year 2, and Year 3 averages, respectively.

The impacts for Year 1, Year 2, Year 3, and the average were calculated as the difference between the deviation from the baseline for Talent Development schools and the deviation from the baseline for the non-Talent Development schools.

Blank spaces under the Year 1, Year 2, and Year 3 columns indicate that, at the time of analysis, some clusters had not yet completed a second or third year of implementation.

Estimates are regression-adjusted using ordinary least squares, controlling for 7th-grade math and reading SAT-9 test scores, race, and whether a student had repeated a prior grade. (For the full 9th-grade sample, the analysis also controls for whether students were repeating the 9th grade.)

A two-tailed t-test was applied to the impacts, which are differences in deviations from baseline between Talent Development and non-Talent Development schools. Standard errors and statistical significance levels are adjusted to account for cohort effects. Statistical significance levels are indicated as: \*\*\* = 1 percent; \*\* = 5 percent; \* = 10 percent.

<sup>a</sup>The numbers in the average columns reflect the average outcome for all students in the sample over the years of available follow-up data for each cluster. The length of the follow-up period varies by cluster. Two of the earliest implementing clusters have a three-year follow-up period, one cluster has a two-year follow-up period, and two clusters have only a one-year follow-up period. This column does not reflect the average of one, two, or three follow-up year means, which are also included in the table.

<sup>b</sup>All cluster averages are calculated vertically with the available data for each follow-up year and the overall average.

Talent Development Evaluation

Table RP.7

Interrupted Time Series Estimates and Impacts on Attendance Rates  
Three-Year Follow-Up Results, by Cluster  
Repeating Ninth-Grade Students

Cluster	Talent Development Schools				Non-Talent Development Schools				Impact at Follow-Up			
	Follow-Up				Follow-Up				Year 1	Year 2	Year 3	Average <sup>a</sup>
	Year 1	Year 2	Year 3	Average <sup>a</sup>	Year 1	Year 2	Year 3	Average <sup>a</sup>				
School A												
Attendance rate	60.6	60.9	64.8	62.0	50.7	57.4	56.5	54.9				
Deviation from baseline	7.9	8.2	12.1	9.3	3.6	10.3	9.4	7.8	4.3	-2.0	2.7	1.5
School B												
Attendance rate	66.5	62.2	43.6	58.0	62.2	60.6	57.8	60.2				
Deviation from baseline	19.6	15.4	-3.2	11.2	6.0	4.4	1.6	4.0	13.6 *	11.0	-4.8	7.2
School C												
Attendance rate	70.3	79.3		74.7	60.3	58.0		59.2				
Deviation from baseline	12.6	21.6		17.0	1.3	-0.9		0.2	11.2 *	22.5 ***		16.8 ***
School D												
Attendance rate	51.6			51.6	60.7			60.7				
Deviation from baseline	-12.6			-12.6	-2.7			-2.7	-9.8 *			-9.8 *
School E												
Attendance rate	55.2			55.2	57.8			57.8				
Deviation from baseline	-3.3			-3.3	-2.5			-2.5	-0.8			-0.8
All clusters <sup>b</sup>												
Attendance rate	60.8	67.5	54.2	60.3	58.3	58.7	57.2	58.5				
Deviation from baseline	4.8	15.1	4.4	4.3	1.1	4.6	5.5	1.3	3.7	10.5 ***	-1.1	3.0
Effect size									0.12	0.35	-0.04	0.10

(continued)

### Table RP.7 (continued)

SOURCE: MDRC calculations from individual students' school records from a large, urban school district.

NOTES: Sample includes 9th-grade students from five Talent Development high schools and seven non-Talent Development high schools. Students in the sample were included on the district's transcript and attendance records. The sample excludes students who did not attempt at least one credit during a given school year. Repeating 9th-grade students were defined as students whose records indicate that they were in 9th grade in the year under study and were also in 9th grade in the previous year's administrative data file.

Clusters consisted of a Talent Development school matched with a group of between two and five non-Talent Development schools. Some non-Talent Development schools were counted in more than one cluster.

The deviation from the baseline for Year 1, Year 2, and Year 3 was calculated as the difference between the baseline average and the Year 1, Year 2, and Year 3 averages, respectively.

The impacts for Year 1, Year 2, Year 3, and the average were calculated as the difference between the deviation from the baseline for Talent Development schools and the deviation from the baseline for the non-Talent Development schools.

Blank spaces under the Year 1, Year 2, and Year 3 columns indicate that, at the time of analysis, some clusters had not yet completed a second or third year of implementation.

Estimates are regression-adjusted using ordinary least squares, controlling for 7th-grade math and reading SAT-9 test scores, race, and whether a student had repeated a prior grade. (For the full 9th-grade sample, the analysis also controls for whether students were repeating the 9th grade.)

A two-tailed t-test was applied to the impacts, which are differences in deviations from baseline between Talent Development and non-Talent Development schools. Standard errors and statistical significance levels are adjusted to account for cohort effects. Statistical significance levels are indicated as: \*\*\* = 1 percent; \*\* = 5 percent; \* = 10 percent.

<sup>a</sup>The numbers in the average columns reflect the average outcome for all students in the sample over the years of available follow-up data for each cluster. The length of the follow-up period varies by cluster. Two of the earliest implementing clusters have a three-year follow-up period, one cluster has a two-year follow-up period, and two clusters have only a one-year follow-up period. This column does not reflect the average of one, two, or three follow-up year means, which are also included in the table.

<sup>b</sup>All cluster averages are calculated vertically with the available data for each follow-up year and the overall average.

Talent Development Evaluation

Table RP.8

Interrupted Time Series Estimates and Impacts on  
Percentage of Students with Attendance Rates Greater Than or Equal to 90 Percent  
Three-Year Follow-Up Results, by Cluster  
Repeating Ninth-Grade Students

Cluster	Talent Development Schools				Non-Talent Development Schools				Impact at Follow-Up			
	Follow-Up				Follow-Up				Year 1	Year 2	Year 3	Average <sup>a</sup>
	Year 1	Year 2	Year 3	Average <sup>a</sup>	Year 1	Year 2	Year 3	Average <sup>a</sup>				
School A												
Attendance rate of 90% or higher (%)	5.3	2.9	7.3	5.0	2.3	3.3	6.3	4.0				
Deviation from baseline	2.8	0.4	4.7	2.4	0.1	1.1	4.0	1.7	2.7	-0.7	0.7	0.7
School B												
Attendance rate of 90% or higher (%)	7.0	1.1	-0.2	2.8	8.2	6.0	5.0	6.4				
Deviation from baseline	5.0	-0.9	-2.2	0.9	4.1	1.9	0.8	2.3	0.9	-2.8	-3.1	-1.4
School C												
Attendance rate of 90% or higher (%)	15.3	29.9		22.3	5.4	5.9		5.7				
Deviation from baseline	10.7	25.3		17.7	0.9	1.4		1.1	9.8 *	23.9 ***		16.6 ***
School D												
Attendance rate of 90% or higher (%)	0.7			0.7	6.7			6.7				
Deviation from baseline	-7.6			-7.6	0.0			0.0	-7.6			-7.6
School E												
Attendance rate of 90% or higher (%)	0.4			0.4	5.1			5.1				
Deviation from baseline	-6.0			-6.0	-0.9			-0.9	-5.1			-5.1
All clusters <sup>b</sup>												
Attendance rate of 90% or higher (%)	5.7	11.3	3.5	6.2	5.6	5.1	5.6	5.6				
Deviation from baseline	1.0	8.3	1.2	1.5	0.8	1.4	2.4	0.8	0.1	6.8 ***	-1.2	0.6
Effect size									0.00	0.18	-0.03	0.02

(continued)

### Table RP.8 (continued)

SOURCE: MDRC calculations from individual students' school records from a large, urban school district.

NOTES: Sample includes 9th-grade students from five Talent Development high schools and seven non-Talent Development high schools. Students in the sample were included on the district's transcript and attendance records. The sample excludes students who did not attempt at least one credit during a given school year. Repeating 9th-grade students were defined as students whose records indicate that they were in 9th grade in the year under study and were also in 9th grade in the previous year's administrative data file.

Clusters consisted of a Talent Development school matched with a group of between two and five non-Talent Development schools. Some non-Talent Development schools were counted in more than one cluster.

The deviation from the baseline for Year 1, Year 2, and Year 3 was calculated as the difference between the baseline average and the Year 1, Year 2, and Year 3 averages, respectively.

The impacts for Year 1, Year 2, Year 3, and the average were calculated as the difference between the deviation from the baseline for Talent Development schools and the deviation from the baseline for the non-Talent Development schools.

Blank spaces under the Year 1, Year 2, and Year 3 columns indicate that, at the time of analysis, some clusters had not yet completed a second or third year of implementation.

Estimates are regression-adjusted using ordinary least squares, controlling for 7th-grade math and reading SAT-9 test scores, race, and whether a student had repeated a prior grade. (For the full 9th-grade sample, the analysis also controls for whether students were repeating the 9th grade.)

A two-tailed t-test was applied to the impacts, which are differences in deviations from baseline between Talent Development and non-Talent Development schools. Standard errors and statistical significance levels are adjusted to account for cohort effects. Statistical significance levels are indicated as: \*\*\* = 1 percent; \*\* = 5 percent; \* = 10 percent.

<sup>a</sup>The numbers in the average columns reflect the average outcome for all students in the sample over the years of available follow-up data for each cluster. The length of the follow-up period varies by cluster. Two of the earliest implementing clusters have a three-year follow-up period, one cluster has a two-year follow-up period, and two clusters have only a one-year follow-up period. This column does not reflect the average of one, two, or three follow-up year means, which are also included in the table.

<sup>b</sup>All cluster averages are calculated vertically with the available data for each follow-up year and the overall average.

Talent Development Evaluation

Table RP.9

**Interrupted Time Series Estimates and Impacts on  
Percentage of Students with Attendance Rates Less Than or Equal to 80 Percent  
Three-Year Follow-Up Results, by Cluster  
Repeating Ninth-Grade Students**

Cluster	Talent Development Schools				Non-Talent Development Schools				Impact at Follow-Up				
	Follow-Up				Follow-Up				Year 1	Year 2	Year 3	Average <sup>a</sup>	
	Year 1	Year 2	Year 3	Average <sup>a</sup>	Year 1	Year 2	Year 3	Average <sup>a</sup>					
School A													
Attendance rate of 80% or lower (%)	80.1	86.3	83.6	83.3	90.2	88.3	84.2	87.6					
Deviation from baseline	-11.0	-4.8	-7.5	-7.8	-3.2	-5.1	-9.3	-5.9	-7.8	0.3	1.8		-1.9
School B													
Attendance rate of 80% or lower (%)	77.8	90.9	99.5	88.6	79.9	82.7	84.1	82.2					
Deviation from baseline	-16.0	-2.9	5.8	-5.2	-7.2	-4.4	-3.1	-4.9	-8.8	1.5	8.8		-0.3
School C													
Attendance rate of 80% or lower (%)	73.5	51.8		63.1	82.3	83.3		82.8					
Deviation from baseline	-13.6	-35.4		-24.1	-3.6	-2.6		-3.1	-10.0	-32.8 ***			-21.0 ***
School D													
Attendance rate of 80% or lower (%)	94.2			94.2	79.9			79.9					
Deviation from baseline	14.7			14.7	-0.8			-0.8	15.5				15.5
School E													
Attendance rate of 80% or lower (%)	88.4			88.4	84.3			84.3					
Deviation from baseline	4.1			4.1	0.9			0.9	3.2				3.2
All clusters <sup>b</sup>													
Attendance rate of 80% or lower (%)	82.8	76.3	91.6	83.5	83.3	84.8	84.1	83.4					
Deviation from baseline	-4.3	-14.3	-0.9	-3.6	-2.8	-4.0	-6.2	-2.7	-1.6	-10.3 **	5.3		-0.9
Effect size									-0.03	-0.22	0.11		-0.02

(continued)

**Table RP.9 (continued)**

SOURCE: MDRC calculations from individual students' school records from a large, urban school district.

NOTES: Sample includes 9th-grade students from five Talent Development high schools and seven non-Talent Development high schools. Students in the sample were included on the district's transcript and attendance records. The sample excludes students who did not attempt at least one credit during a given school year. Repeating 9th-grade students were defined as students whose records indicate that they were in 9th grade in the year under study and were also in 9th grade in the previous year's administrative data file.

Clusters consisted of a Talent Development school matched with a group of between two and five non-Talent Development schools. Some non-Talent Development schools were counted in more than one cluster.

The deviation from the baseline for Year 1, Year 2, and Year 3 was calculated as the difference between the baseline average and the Year 1, Year 2, and Year 3 averages, respectively.

The impacts for Year 1, Year 2, Year 3, and the average were calculated as the difference between the deviation from the baseline for Talent Development schools and the deviation from the baseline for the non-Talent Development schools.

Blank spaces under the Year 1, Year 2, and Year 3 columns indicate that, at the time of analysis, some clusters had not yet completed a second or third year of implementation.

Estimates are regression-adjusted using ordinary least squares, controlling for 7th-grade math and reading SAT-9 test scores, race, and whether a student had repeated a prior grade. (For the full 9th-grade sample, the analysis also controls for whether students were repeating the 9th grade.)

A two-tailed t-test was applied to the impacts, which are differences in deviations from baseline between Talent Development and non-Talent Development schools. Standard errors and statistical significance levels are adjusted to account for cohort effects. Statistical significance levels are indicated as: \*\*\* = 1 percent; \*\* = 5 percent; \* = 10 percent.

<sup>a</sup>The numbers in the average columns reflect the average outcome for all students in the sample over the years of available follow-up data for each cluster. The length of the follow-up period varies by cluster. Two of the earliest implementing clusters have a three-year follow-up period, one cluster has a two-year follow-up period, and two clusters have only a one-year follow-up period. This column does not reflect the average of one, two, or three follow-up year means, which are also included in the table.

<sup>b</sup>All cluster averages are calculated vertically with the available data for each follow-up year and the overall average.

**Talent Development Evaluation**  
**Table RP.Summary**  
**Impacts on Attendance, Course-Taking, and Promotion**  
**Follow-Up Results**  
**Repeating Ninth-Grade Students**

Outcome	Talent Development Schools		Non-Talent Development Schools		Impact at Follow-Up	Impact Effect Size
	Baseline	Follow-Up	Baseline	Follow-Up		
	Earned at least 1 English credit for the year (%)	35.6	39.1	39.4		
Deviation from baseline		3.6		3.2	0.4	0.01
Earned at least 1 algebra credit for the year (%)	14.6	21.6	16.7	20.5		
Deviation from baseline		7.0 **		3.8 **	3.2	0.07
Earned at least 1 math credit for the year (%)	29.6	35.2	37.2	38.3		
Deviation from baseline		5.6 *		1.1	4.5	0.09
Earned 4 or more credits for the year <sup>a</sup> (%)	32.6	32.0	33.8	35.6		
Deviation from baseline		-0.6		1.8	-2.4	-0.05
Earned required academic credits <sup>b</sup> (%)	15.3	13.6	17.1	17.2		
Deviation from baseline		-1.7		0.1	-1.9	-0.04
Promoted to 10th grade <sup>c</sup> (%)	42.1	39.3	45.4	43.4		
Deviation from baseline		-2.8		-2.0	-0.8	-0.02
Attendance rate <sup>d</sup>	56.0	60.3	57.2	58.5		
Deviation from baseline		4.3 **		1.3	3.0	0.10
Attendance rate of 90% or higher (%)	4.8	6.2	4.7	5.6		
Deviation from baseline		1.5		0.8	0.6	0.02
Attendance rate of 80% or lower (%)	87.2	83.5	86.1	83.4		
Deviation from baseline		-3.6		-2.7 *	-0.9	-0.02

SOURCE: MDRC calculations from individual students' school records from a large, urban school district.

NOTES: Sample includes 9th-grade students from five Talent Development high schools and seven non-Talent Development high schools. Students in the sample were included on the district's transcript and attendance records. The sample excludes students who did not attempt at least one credit during a given school year. Repeating 9th-grade students were defined as students whose records indicate that they were in the 9th grade in the year under study and were also in the 9th grade in the previous year's administrative data file.

Results in the Talent Development columns reflect averages across the five Talent Development schools. Results in the non-Talent Development columns reflect averages across five clusters of non-Talent Development schools. Each cluster consisted of between two and five non-Talent Development schools. Some non-Talent Development schools were counted in more than one cluster.

Numbers in the "Baseline" columns reflect averages over the three-year period prior to the initial implementation of Talent Development for a given cluster.

Numbers in the "Follow-Up" columns reflect averages over the entire follow-up period. The length of the follow-up period varies by cluster. Two of the earliest implementing clusters had a three-year follow-up period, one cluster had a two-year follow-up period, and two clusters had only a one-year follow-up period.

(continued)

### Table RP.Summary (continued)

The deviation from baseline, indicated in the row directly below each outcome, reflects the difference between the baseline average and the average over the follow-up period.

The impact was calculated as the difference between the deviation from the baseline for Talent Development schools and the deviation from the baseline for non-Talent Development schools.

The impact effect size was calculated by dividing the impact by the standard deviation of the outcome for all 9th-grade students in the district's nonselective, comprehensive high schools from school years 1996-1997 to 1998-1999.

Estimates are regression-adjusted using ordinary least squares, controlling for 7th-grade math and reading SAT-9 test scores, race, and whether a student had repeated a prior grade. (For the full 9th-grade sample, the analysis also controls for whether students were repeating the 9th grade.)

A two-tailed t-test was applied to deviations from baseline and to differences in deviations from baseline between Talent Development and non-Talent Development schools. Standard errors and statistical significance levels are adjusted to account for cohort effects. Statistical significance levels are indicated as: \*\*\* = 1 percent; \*\* = 5 percent; \* = 10 percent.

<sup>a</sup>Until the 1998-1999 school year, 9th-grade students in the district were required to earn four course credits in order to be promoted.

<sup>b</sup>Beginning in the 1998-1999 school year, 9th-grade students were required to earn at least five course credits, including one credit each in English, math, and science.

<sup>c</sup>For the purposes of this analysis, 9th-grade students were considered promoted if they were listed as 10th-graders in the next year's administrative data file. Discrepancies between the percentage of students meeting various promotion requirements and the promotion rate may be caused by students earning some credits in previous years, incomplete course-detail records, or inconsistent application of the promotion requirements. Due to data availability, this outcome includes data for only three of the five clusters of Talent Development and non-Talent Development schools.

<sup>d</sup>Attendance rates were calculated for each student by dividing the number of days the student was present by the total number of days the student was enrolled in a given school year.