



# Improving High School Math Outcomes

## The Role of New York City's Small Schools of Choice and Students' Incoming Math Proficiency

JANUARY 2026

*Miki Shih  
Rebecca Unterman  
Peyton Nash*

**M**ost students in the United States do not meet national performance standards in math by the time they leave high school. Only 24 percent of twelfth-graders met (or exceeded) National Assessment of Education Progress math standards during the most recent assessment in 2019, and high school math scores on the most recent Programme for International Student Assessment in 2022 were among the lowest ever recorded for U.S. students.<sup>1</sup> This fact is concerning since high school math performance has a strong association with students' academic and professional success. Students who perform well in math are more likely to graduate from high school within four years, enroll in postsecondary education, and earn higher wages once they join the labor market.<sup>2</sup> It is therefore crucial to understand how to improve high school math performance, especially for students who enter high school performing below grade-level standards.

There is compelling evidence that high schools can improve students' math performance. Previous research indicates that many high schools that have been successful in raising students' math performance did not focus solely on math. These schools were generally district schools that underwent comprehensive reform or charter schools that implemented a

multifaceted approach to strengthening students' academics and overall well-being. The schools emphasized fostering personal connections between students and staff members, increasing the amount of time dedicated to academics, having rigorous academic expectations, and partnering with outside intermediary organizations to receive administrative or programmatic support.<sup>3</sup> Such schools have had positive effects on students' math performance, with many students taking and passing more math courses, taking and passing more Advanced Placement math tests, or earning higher scores on state math assessments.<sup>4</sup>

Though these schools improved students' math performance on average, gains may not have been distributed evenly across all types of students, especially among those who struggled with math in previous years. This is vital information for education reformers because students enter high school with a wide range of math proficiency. According to 2022 data from the National Assessment of Educational Progress, 7 percent of eighth-graders have advanced math proficiency, 20 percent are proficient, 35 percent only have partial proficiency, and 38 percent have below basic math skills.<sup>5</sup> Bringing underperforming students up to grade-level standards will likely require different amounts and types of support than what is needed to improve the math skills of already-proficient students. Research has shown that math-proficient eighth-graders are more likely to take advanced math courses in high school, therefore deriving greater benefit from their high schools' math offerings than their less math-proficient peers.<sup>6</sup> In addition, many students who are not proficient in math have negative emotions around the subject and are reluctant to ask for assistance, which may affect their ability to benefit from the support they do receive.<sup>7</sup>

Though few large-scale evaluations of high school interventions have explored the differences in math outcomes among students with varying levels of math proficiency before entering high school, the evaluations that did explore such outcomes have found telling differences. Studies of Early College High Schools (ECHS), which are specialized high schools that offer opportunities to earn college credits and provide various other support services, found that although there were greater increases in the rates of taking and passing college preparatory math courses among ECHS students with lower math proficiency, only ECHS students with higher math proficiency saw a greater increase in their rates of college degree attainment.<sup>8</sup> Research on double-dose Algebra, a policy which requires ninth-graders with less than median math proficiency to enroll in two periods of Algebra, found that while the policy improved math test scores for students scoring near the median, there was less benefit for students who entered high school with very low math proficiency.<sup>9</sup> These findings indicate that more information is needed to understand how to effectively support students entering high school at all levels of math proficiency.

This brief presents the findings of a study that examined how students' eighth-grade math proficiency affects their math performance in high school and their ability to benefit from the range of additional support services provided by reformed New York City high schools. Specifically, between 2002 and 2008, NYC Public Schools (NYCPS) closed many large, underperforming high schools, and replaced them with over 100 small high schools to serve students in the lowest-income areas of the city. Since these schools accepted students of all academic abilities, were located mainly in disadvantaged communities, and therefore represented a realistic small school option for many students who did not previously have one, researchers called them Small Schools of Choice (SSCs).

Previous lottery-based MDRC studies found that enrolling in an SSC increased students' chances of graduating from high school within four years, enrolling in postsecondary education programs, and earning four-year postsecondary degrees.<sup>10</sup> While SSCs were not required to have a specific focus on math, they shared many characteristics with schools that had successfully raised math performance. The SSCs emphasized personalized student-staff member relationships, had rigorous academic expectations, and partnered with outside intermediary organizations that provided programmatic or administrative assistance.

In this context, this brief aims to answer two research questions:

1. For students entering NYCPS high schools from 2005 to 2008, how did eighth-grade math proficiency relate to their high school math performance?
2. Focusing specifically on the SSC reform effort, how did SSCs affect students' math performance, and did that differ by eighth-grade math proficiency level?

The study team addressed the first research question by tracking eighth-grade math proficiency and high school math performance among students who did not enroll in an SSC. These students instead enrolled in various other NYCPS options. While this question has been discussed at points in the literature, it is explored here with a specific focus on student subgroups and key NYCPS math performance metrics, providing relevant information and setting the stage for the analysis of SSC effects. The second research question is then addressed by drawing on MDRC's previously analyzed SSC lottery sample and comparing non-SSC students' math performance with that of SSC enrollees.<sup>11</sup> The main findings include:

- Students demonstrated similar levels of math ability in high school as they had in the eighth grade; most students who were already proficient continued to succeed, and most students who were not proficient continued to struggle.
- The greater a student's math proficiency upon entering high school, the more that SSCs boosted the student's math performance.

## Key Study Information

The study's main outcomes, student sample, and subgroups are summarized below.

### High School Math Performance

In order to graduate from high school with a Regents diploma, the standard diploma in New York State, students must pass a specified set of multisubject state exams—called Regents Exams—and earn a specified set of core course credits. Regents exams that meet the math portion of the graduation requirement include Math A, Math B, Algebra, Geometry, and Algebra II.<sup>12</sup> Six of the

required core course credits must be from math classes; this usually takes students six semesters, or three years, to complete.<sup>13</sup>

Mirroring these requirements, this study uses these two metrics to measure math performance:

- Passing at least one math Regents exam with a score of 65 or higher
- Earning at least six high school math course credits

## Student Sample and Analysis

This study includes approximately 19,000 students who participated in the New York City High School Application Processing System lottery and were randomly assigned the opportunity to enroll in an SSC (or a non-SSC). The first research question draws on the approximately 11,000 students who “lost” the lottery and did not have the opportunity to enroll in an SSC, called “non-SSC enrollees,” to show math performance patterns in schools conducting business as usual. The second research question estimates SSCs’ effects on math performance by comparing students who “won” the opportunity to enroll in an SSC and enrolled (also called “SSC enrollees”) with the non-SSC enrollees examined in the previous section. This analytical approach is described in detail in an earlier MDRC evaluation of SSCs.<sup>14</sup>

## Eighth-Grade Math Proficiency Subgroups

The New York State Department of Education uses eighth-grade math assessment scores to determine students’ eighth-grade math proficiency levels. The four levels are: not proficient (level 1), partially proficient (level 2), proficient (level 3), and advanced proficiency (level 4).<sup>15</sup> This study uses the same proficiency level categorization, and includes approximately 3,500 students who are not proficient, 9,000 students who are partially proficient, and 6,000 students who are proficient. Students with advanced proficiency were not included in the analyses due to the small number of students (approximately 400) at this proficiency level in the study sample.

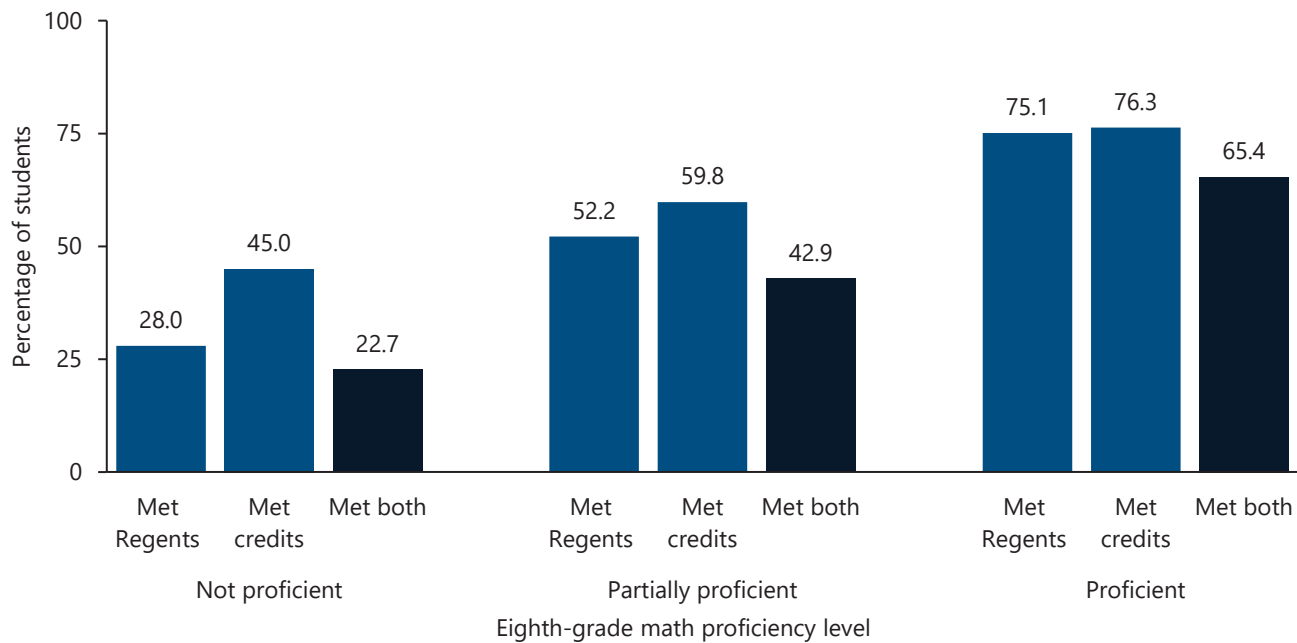
## How Did Students’ Eighth-Grade Math Proficiency Relate to Their High School Math Performance?

This study found that in general, if students attended high schools that did not participate in comprehensive reform (non-SSCs), their high school math performance appeared to reflect their level of math proficiency in the eighth grade. Students who were already proficient in math had the most success in meeting math-related graduation requirements, students who were partially proficient in math had some success, and students who were not proficient had the least success. This finding applies to both passing a math Regents exam and earning the requisite number of math credits.

**The higher a student’s eighth-grade math proficiency level, the more likely the student was to meet the math requirements for high school graduation.**

High school math success was measured with respect to (a) meeting the math Regents exam requirement, (b) meeting the math credit requirement, and (c) meeting both math requirements. Figure 1 shows that for all three measures, the greater a student’s eighth-grade math proficiency level, the more likely the student was to meet each of these requirements. It is worth noting that of the students who entered high school not proficient and partially proficient in math, markedly fewer of them met the math Regents requirement than met the math credit requirement. This indicates that the math Regents requirement was the greater barrier to high school graduation for these students. There was no such difference for students in the sample that entered high school proficient in math.

**Figure 1. Percentage of Students Who Met Math Regents and Credit Requirements for High School Graduation by Year 4, by Eighth-Grade Math Proficiency Level**

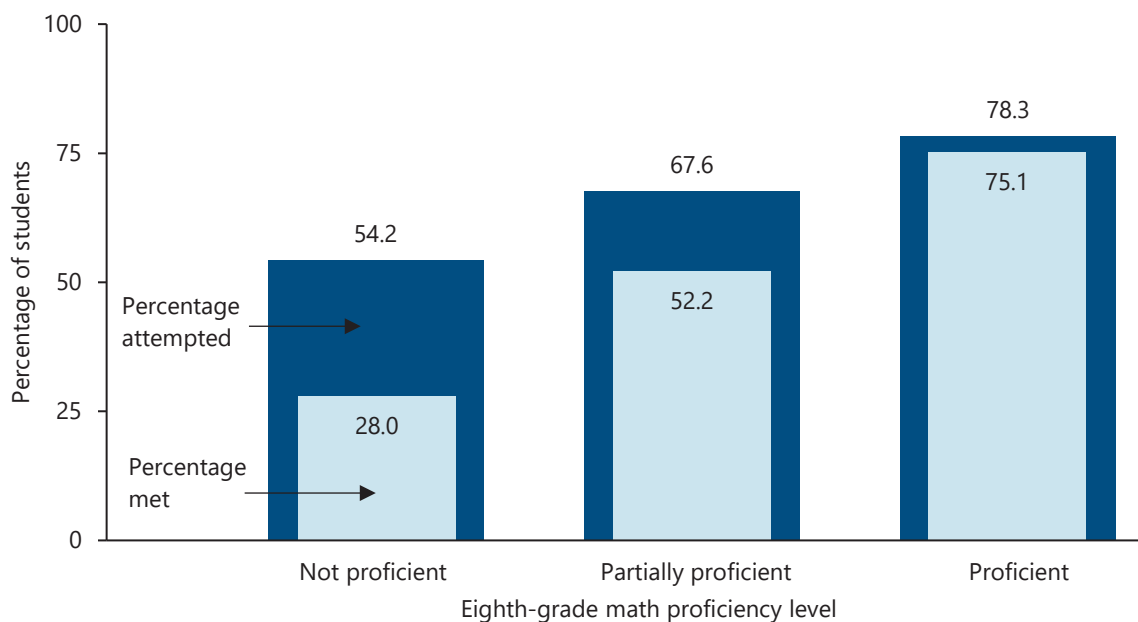


SOURCE: Authors’ calculations based on student records from New York City Public Schools.

**The higher a student’s eighth-grade math proficiency level, the more likely the student was to take and pass a math regents exam.**

Figure 2 illustrates the percentage of students who attempted a math Regents exam and the percentage of students who passed a math Regents exam, by proficiency subgroup. As shown in the figure, students with higher levels of eighth-grade math proficiency were more likely both to attempt and to pass a math Regents exam. Furthermore, among students who took a math Regents exam, students with higher levels of eighth-grade math proficiency had higher pass rates. Nearly all proficient students who took a math Regents exam received a passing score, but only about half of the students who took the exam and were not proficient were able to do the same.

**Figure 2. Percentage of Students Who Attempted and Met the Math Regents Requirement, by Eighth-Grade Math Proficiency Level**



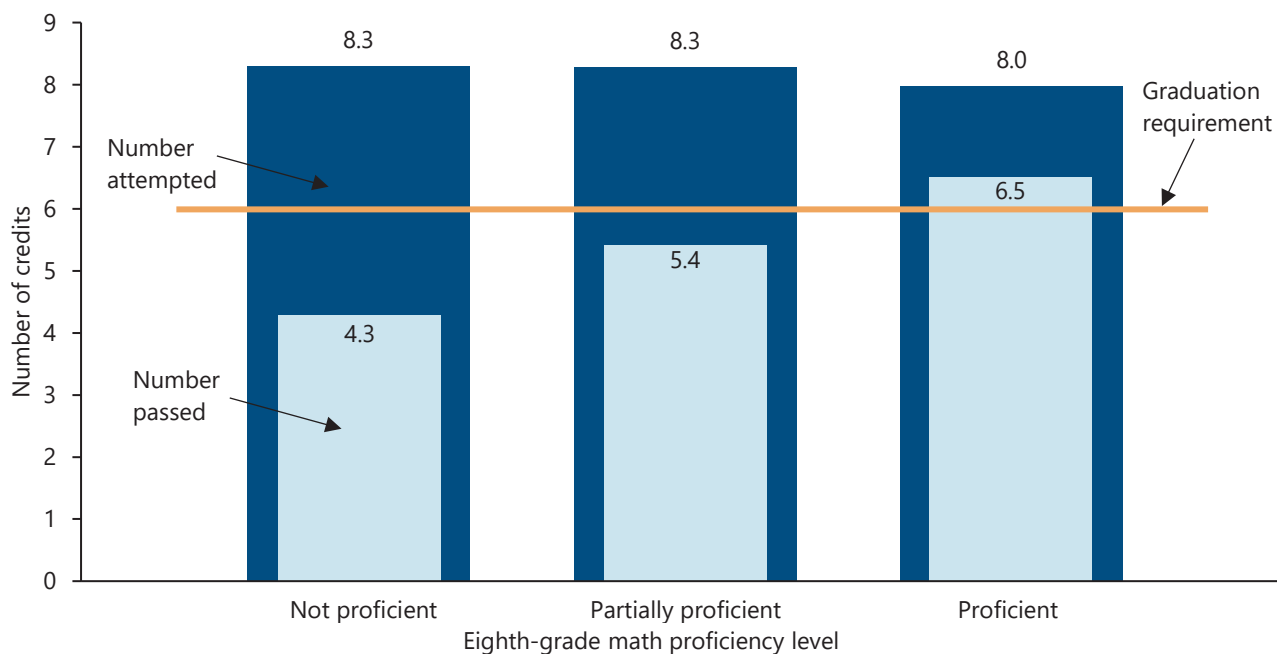
SOURCE: Authors’ calculations based on student records from New York City Public Schools.

Students who were partially or not proficient in eighth-grade math were also more likely to need more tries to pass their first math Regents exam; 14 percent of students at both these levels needed at least three tries to pass. In addition, many—8 percent of partially proficient students and 16 percent of not proficient students—never passed even after three or more attempts. This further indicates that the math Regents exam was a substantial barrier to graduation for students entering high school with below grade-level math proficiency.

**The higher a student's proficiency level, the more math credits the student earned on average.**

Students needed to earn six math credits, the approximate equivalent of passing three years of math courses, to graduate from high school with a Regents diploma.<sup>16</sup> As shown in Figure 3, students of all proficiency levels attempted to earn an average of roughly eight math credits, the approximate equivalent of four years of math. However, students at higher eighth-grade math proficiency levels were more likely to pass their math courses; proficient students earned about 6.5 credits on average, partially proficient students earned 5.4 credits, and students who were not proficient earned 4.3 credits. This means that despite taking four years of math classes, the average student who entered high school not proficient in math was still one year short of meeting the math credit requirement for high school graduation.

**Figure 3. Average Number of Math Credits Attempted and Earned, by Eighth-Grade Math Proficiency Level**



SOURCE: Authors' calculations based on student records from New York City Public Schools.

**Overall, eighth-grade math proficiency played a large role in students' high school math performance.**

For students who attended non-SSC high schools, eighth-grade math proficiency was a strong predictor of high school math performance. Students who entered high school with higher levels of math proficiency were more likely to take a math Regents exam, pass a math Regents exam, and

earn enough math credits to graduate from high school with a Regents diploma. Moreover, among students who entered high school with below grade-level math proficiency, less than half met both the math requirements needed to earn a Regents diploma. This indicates that in many high schools, students with lower levels of math proficiency need additional support to achieve math success.

## How Did SSCs Affect Students' Math Performance, and Did That Differ by Eighth-Grade Math Proficiency Level?

Education reformers working to break the cycle documented above — students leaving high school with similar math proficiency as when they entered — seek evidence on how large-scale reform efforts either disrupt or maintain these patterns. To this end, the second research question unpacks the effects of New York City's SSC initiative and explores whether students who entered SSCs performing at different proficiency levels experienced different effects.

Overall, SSCs increased the proportion of students meeting both the math Regents and math credit graduation requirements by 5 percentage points. SSCs had the strongest effects on math performance among proficient students, moderate effects among partially proficient students, and no effects among students who were not proficient. This applied both to meeting the math Regents requirement (by passing at least one math Regents exam) and meeting the math credit requirement (by earning at least six math credits).

SSC effects on students' math performance were calculated using a two-stage least squares regression, the same analytic approach employed in previous MDRC evaluations of SSCs.<sup>17</sup> This approach estimates the effect of enrolling in an SSC for students who “won” the NYCPS high school lottery, compared with students who “lost” the lottery and were not given the opportunity to enroll. Math performance in the previous section was calculated using simple averages. Due to this, there are slight differences in results between the two sections for the non-SSC students.

### **The higher a student's eighth-grade math proficiency level, the more the student's high school math performance benefitted from enrolling in an SSC.**

SSCs had a positive effect on math performance among proficient and partially proficient students, but not among students who were not proficient in math. As shown in Table 1, SSC enrollment increased proficient students' likelihood of meeting both math requirements by 11 percentage points. This increase was largely driven by SSCs' effectiveness in helping proficient students meet the math credits requirement; proficient SSC enrollees were 12 percentage points more likely to meet this requirement than their non-SSC counterparts. SSC enrollment also increased the rate of partially proficient students meeting both math requirements by 7 percentage points. SSCs did not have any effect on meeting math-related graduation requirements for students who were not proficient in math.

**Table 1. SSC Effects on Meeting Math Regents and Credit Graduation Requirements by Year 4, by Eighth-Grade Math Proficiency Level**

Math Proficiency Level	SSC Enrollees	Non-SSC Enrollees	Estimated Effect	P-Value for Estimated Effect
Not proficient				
Met Regents requirement (%)	29.17	29.47	-0.31	0.925
Met credit requirement (%)	40.85	40.69	0.16	0.964
Met both requirements (%)	23.01	26.84	-3.83	0.206
Number of students	1,248	2,264		
Partially proficient				
Met Regents requirement (%)	59.70	54.47	5.24 *	0.018
Met credit requirement (%)	61.88	54.63	7.25 *	0.001
Met both requirements (%)	51.52	44.37	7.15 *	0.001
Number of students	3,861	5,418		
Proficient				
Met Regents requirement (%)	81.77	75.42	6.35 *	0.002
Met credit requirement (%)	82.41	69.92	12.49 *	0.000
Met both requirements (%)	76.20	65.62	10.58 *	0.000
Number of students	3,066	2,984		

SOURCE: Authors' calculations based on student records from New York City Public Schools.

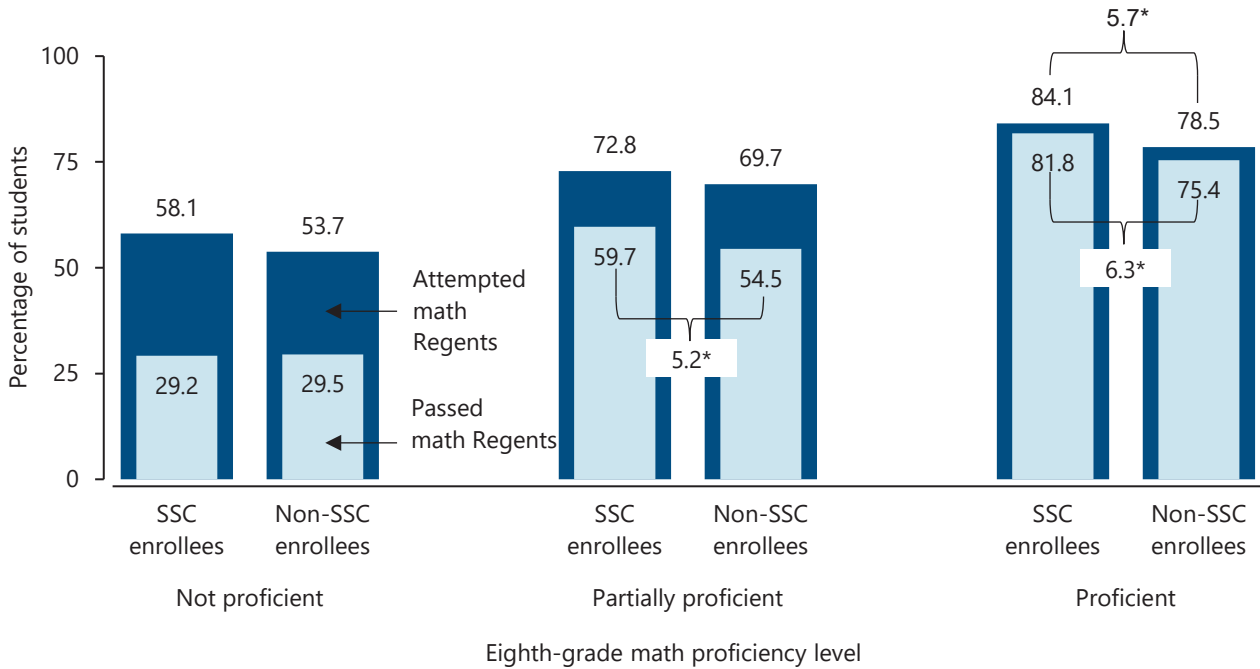
NOTES: SSC stands for Small Schools of Choice. Rounding may cause slight discrepancies in differences.

\* indicates the estimated difference is statistically significant at the 0.05 level with a two-tailed t-test.

### **SSCs increased math regents pass rates for some subgroups; SSCs increased attempt rates among proficient students only.**

Figure 4 presents the percentage of students attempting (dark blue bar) and passing (light blue bar) the math Regents exam requirement by entering proficiency level. The brackets between SSC enrollees and non-SSC enrollees indicate the estimated SSC enrollment effect, and the stars on this estimated effect indicate its statistical significance. As sample sizes vary across student subgroups, it is important to note both the pattern of differences as well as statistical significance. As shown in the figure, SSCs increased the rate of proficient students attempting a math Regents exam by 6 percentage points. Since almost all proficient students who took a math Regents exam earned a passing score, increasing their attempt rate effectively also increased their pass rate by 6 percentage points. SSC enrollment may have had a smaller effect on math Regents attempts for both partially proficient and not proficient students, but these differences were not statistically

**Figure 4. Percentage of Students Who Attempted and Passed a Math Regents Exam, by Eighth-Grade Math Proficiency Level**



SOURCE: Authors' calculations based on student records from New York City Public Schools.

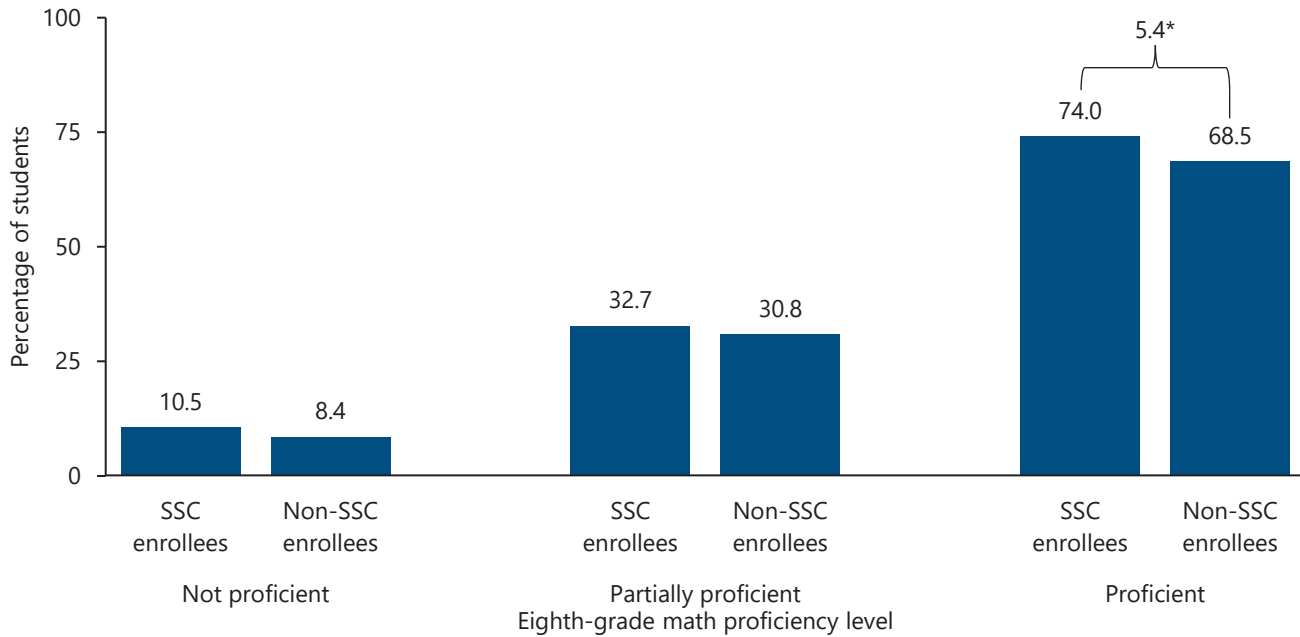
NOTES: SSC stands for Small Schools of Choice. The estimated difference of significant results are indicated by brackets. Rounding may cause slight discrepancies in differences. \* indicates the estimated difference is statistically significant at the 0.05 level with a two-tailed t-test.

significant. However, SSC enrollment did increase pass rates among partially proficient students by 5 percentage points. This may indicate that SSCs were more effective at improving math ability among partially proficient students than non-SSCs.

**Proficient SSC enrollees were more likely to pass the math regents exam on their first try than their non-SSC counterparts.**

As shown in Figure 5, SSCs increased the proportion of proficient students who passed a math Regents exam on their first attempt by 5 percentage points. SSCs did not have any impact on the proportion of not proficient and partially proficient students passing a math Regents exam on their first attempt. SSCs and non-SSCs had similar rates of students needing to take math Regents exams three or more times across all proficiency levels (not shown in Figure 5).

**Figure 5. Percentage of Students Who Met the Math Regents Graduation Requirement on Their First Attempt, by Eighth-Grade Math Proficiency Level**



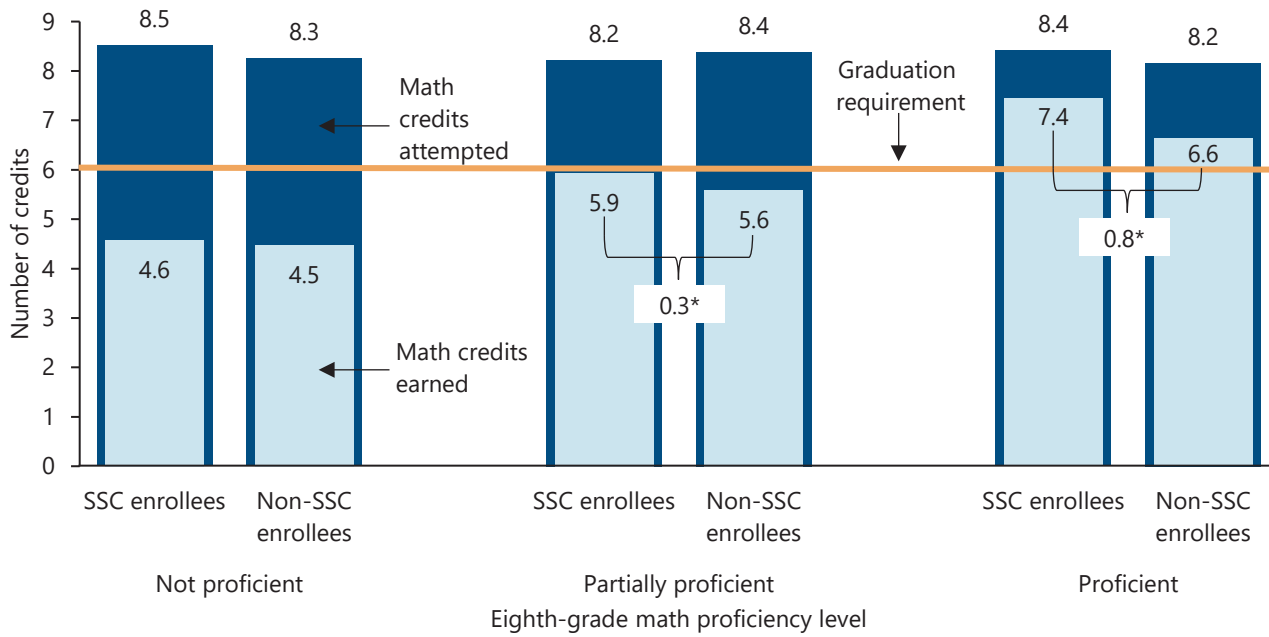
SOURCE: Authors’ calculations based on student records from New York City Public Schools.

NOTES: SSC stands for Small Schools of Choice. The sample includes students who did not attempt a math Regents exam. The estimated differences of significant results are indicated by brackets. Rounding may cause slight discrepancies in differences. \* indicates the estimated difference is statistically significant at the 0.05 level with a two-tailed t-test.

**The higher a student’s proficiency level, the more the student’s math course performance benefited from SSCs.**

SSC enrollment did not affect the number of math credits attempted, though SSC proficient and partially proficient students earned more math credits on average than non-SSC enrollees. As shown in Figure 6, proficient SSC enrollees earned 0.8 more credits than their non-SSC counterparts on average, and partially proficient SSC enrollees earned 0.3 more credits. SSC enrollment did not have any impact on the average number of credits earned by students who were not proficient.

**Figure 6. Average Number of Math Credits Attempted and Earned, by Eighth-Grade Math Proficiency Level**



SOURCE: Authors’ calculations based on student records from New York City Public Schools.

NOTES: SSC stands for Small Schools of Choice. The estimated differences of significant results are indicated by brackets. Rounding may cause slight discrepancies in differences. \* indicates the estimated difference is statistically significant at the 0.05 level with a two-tailed t-test.

## Conclusions

Among non-SSC students, the ability to meet grade-level math standards did not typically change in high school. SSCs had some effects on students’ math performance; the stronger a student was in math upon entering high school, the more that SSC enrollment positively affected the student’s math performance. The findings suggest that all schools had trouble helping students who were not proficient to catch up, and another, more targeted intervention is needed for such students.

**More work must be done on how to improve math performance among students who are not proficient in math.**

Information is limited on high school math interventions that improved math performance among students who were not proficient in math when they entered high school. Though there are several interventions that have raised math performance among participating students as a whole, the impacts may have been driven primarily by students who already had at least partial proficiency in math, as is seen in SSCs. One avenue for further exploration could be to examine the differences

between SSCs and ECHSs, as the latter do appear to improve math performance among students with the lowest levels of math proficiency.<sup>18</sup> Another approach would be to research methods for improving math achievement among younger students, so they enter high school with at least partial proficiency and are able to take advantage of the support services that high schools like SSCs have to offer.

In furtherance of the second approach, the study team plans to examine study students' elementary and middle school exam scores and compare them with their high school math performance in future work. The team hopes these math achievement trajectories will help education reformers identify the years when students need the most support and target interventions accordingly.

## Notes and References

1. The National Assessment of Educational Progress is also known as the Nation's Report Card. National Center for Education Statistics, "The Nation's Report Card, 2019 Mathematics Assessment, (website: <https://www.nationsreportcard.gov/highlights/mathematics/2019/g12/>, 2019); Organisation for Economic Co-operation and Development, "Programme for International Student Assessments 2022 Results (Volume I and II) – Country Notes: United States," (website: [https://www.oecd.org/en/publications/pisa-2022-results-volume-i-and-ii-country-notes\\_ed6fbcc5-en/united-states\\_a78ba65a-en.html](https://www.oecd.org/en/publications/pisa-2022-results-volume-i-and-ii-country-notes_ed6fbcc5-en/united-states_a78ba65a-en.html), 2022).
2. Niu Gao, *Does Raising High School Graduation Requirements Improve Student Outcomes?* (Public Policy Institute of California, 2021); Soo-yong Byun, Matthew J. Irvin, and Bethany A. Bell, "Advanced Math Course Taking: Effects on Math Achievement and College Enrollment," *The Journal of Experimental Education* 83, 4 (2015): 439–468; Jeongeun Kim, Jiyun Kim, Stephen L. DesJardins, and Brian P. McCall, "Completing Algebra II in High School: Does it Increase College Access and Success?" *The Journal of Higher Education* 86, 4 (2015): 628–662; Mark C. Long, Patrice Iatarola, and Dylan Conger, "Explaining Gaps in Readiness for College-Level Math: The Role of High School Courses," *Education Finance and Policy* 4, 1 (2009): 1–33; Elaine Allensworth and John Q. Easton, *The On-Track Indicator as a Predictor of High School Graduation* (Consortium on Chicago School Research at the University of Chicago, 2005); David Silver, Marisa Saunders, and Estela Zarate, *What Factors Predict High School Graduation in the Los Angeles Unified School District* (California Dropout Research Project, 2008); Heather Rose and Julian R. Betts, "The Effect of High School Courses on Earnings," *The Review of Economics and Statistics* 86, 2 (2004): 497–513; Jonathan James, *The Surprising Impact of High School Math on Job Market Outcomes* (Federal Reserve Bank of Cleveland, 2013).
3. Julie A. Edmunds, Lawrence Bernstein, Fatih Unlu, Elizabeth Glennie, John Willse, Arthur Smith, and Nina Arshavsky, "Expanding the Start of the College Pipeline: Ninth-Grade Findings from an Experimental Study of the Impact of the Early College High School Model," *Journal of Research on Educational Effectiveness* 5, 2 (2012): 136–159; James J. Kemple, Corinne M. Herlihy, and Thomas J. Smith, *Making Progress Toward Graduation: Evidence from the Talent Development High School Model* (MDRC, 2005); Christina Clark Tuttle, Philip Gleason, Virginia Knechtel, Ira Nichols-Barrer, Kevin Booker, Gregory Chojnacki, Thomas Coen, and Lisbeth Goble, *Understanding the Effect of KIPP as It Scales: Volume I, Impacts on Achievement and Other Outcomes. Final Report of KIPP's "Investing in Innovation Grant Evaluation"* (Mathematica Policy Research, 2015); Richard S. Brown and Kilchan Choi, *Measuring the Causal Effect of the National Math+ Science Initiative's College Readiness Program* (National Center for Research on Evaluation, Standards, and Student Testing, 2015).

4. Kemple, Herlihy, and Smith (2005); Edmunds et al. (2012); Brown and Choi (2015); Tuttle et al. (2015).
5. The Nation's Report Card, 2022 Mathematics Assessment," (website: <https://www.nationsreportcard.gov/highlights/mathematics/2022/>, 2022).
6. Neal Finkelstein, Anthony Fong, Juliet Tiffany-Morales, Patrick Shields, and Min Huang, *College Bound in Middle School & High School? How Math Course Sequences Matter* (WestEd, 2012).
7. Karen Skilling, Janette Bobis, and Andrew J. Martin, "The 'Ins and Outs' of Student Engagement in Mathematics: Shifts in Engagement Factors Among High and Low Achievers," *Mathematics Education Research Journal* 33 (2021): 469–493.
8. Clarisse Haxton, Mengli Song, Kristina Zeiser, Andrea Berger, Lori Turk-Bicakci, Michael S. Garet, Joel Knudson, and Gur Hoshen, "Longitudinal Findings From the Early College High School Initiative Impact Study," *Educational Evaluation and Policy Analysis* 38, 2 (2016): 410–430; Nina Arshavsky, Julie A. Edmunds, Faith Unlu, and Lily Fesler, "Improving College Readiness in Mathematics in the Context of a Comprehensive High School Reform," unpublished paper (Annenberg EdWorking Papers, 2025).
9. Takako Nomi and Elaine Allensworth, "'Double-Dose' Algebra as an Alternative Strategy to Remediation: Effects on Students' Academic Outcomes," *Journal of Research on Educational Effectiveness* 2, 2 (2009): 111–148.
10. Howard Bloom, Saskia Levy Thompson, and Rebecca Unterman, *Transforming the High School Experience: How New York City's New Small Schools Are Boosting Student Achievement and Graduation Rates* (MDRC, 2010); Rebecca Unterman and Zeest Haider, "New York City's Small Schools of Choice: A First Look at Effects on Postsecondary Persistence and Labor Market Outcomes" (MDRC, 2019).
11. Howard Bloom and Rebecca Unterman, "Can Small High Schools of Choice Improve Educational Prospects for Disadvantaged Students?" *Journal of Policy Analysis and Management* 33, 2 (2014): 290–319; Unterman and Haider (2019).
12. New York City Department of Education, *Past Graduation Requirement Cards for Gen Ed Students* (New York City Department of Education, 2016).
13. New York City Department of Education (2016).
14. Bloom and Unterman (2014).
15. New York State Education Department, *Educator Guide to the Grades 3-8 Mathematics Tests* (New York State Education Department, 2024).
16. New York City Department of Education (2016).
17. Bloom and Unterman (2014).
18. Arshavsky, Edmunds, Unlu, and Fesler (2025).

## Acknowledgments

This study would not have been possible without the continued support and cooperation of many people at New York City Public Schools. In addition, the study received much helpful advice from our MDRC colleagues: William Corrin, John Hutchins, Luisa LaFleur, Hannah Power, Susan Sepanik, Ali Tufel, and Carolyn Thomas. Furthermore, early phases of the study benefited from discussions with Atila Abdulkadiroglu, Gordon Berlin, Neil Dorosin, Jennifer Hill, Brian Jacob, Thomas Kane, James Kemple, Jeffrey Kling, Richard Murnane, Parag Pathak, Sean Reardon, Alvin Roth, and Saskia Levy Thompson. Finally, we would like to thank our MDRC colleague and collaborator Howard Bloom for his help with this brief.

This study is funded by the Gates Foundation and has also benefited from funding from the Walton Family Foundation and the Spencer Foundation.

The following organizations support dissemination of MDRC publications and our efforts to communicate with policymakers, practitioners, and others: Arnold Ventures, Ascendium Education Group, Yield Giving/MacKenzie Scott, and earnings from the MDRC Endowment. Contributors to the MDRC Endowment include Alcoa Foundation, The Ambrose Monell Foundation, Anheuser-Busch Foundation, Bristol-Myers Squibb Foundation, Charles Stewart Mott Foundation, Ford Foundation, The George Gund Foundation, The Grable Foundation, The Lizabeth and Frank Newman Charitable Foundation, The New York Times Company Foundation, Jan Nicholson, Paul H. O'Neill Charitable Foundation, John S. Reed, Sandler Foundation, and The Stupski Family Fund, as well as other individual contributors.

The findings and conclusions in this report do not necessarily represent the official positions or policies of the funders.

For information about MDRC and copies of our publications, see our website: [www.mdrc.org](http://www.mdrc.org).

Copyright © 2026 by MDRC®. All rights reserved.

**New York**  
200 Vesey Street, 23rd Fl.  
New York, NY 10281  
Tel: 212 532 3200

**Washington, DC**  
750 17th Street, NW  
Suite 501  
Washington, DC 20006

**Oakland**  
475 14th Street, Suite 750  
Oakland, CA 94612  
Tel: 510 663 6372

