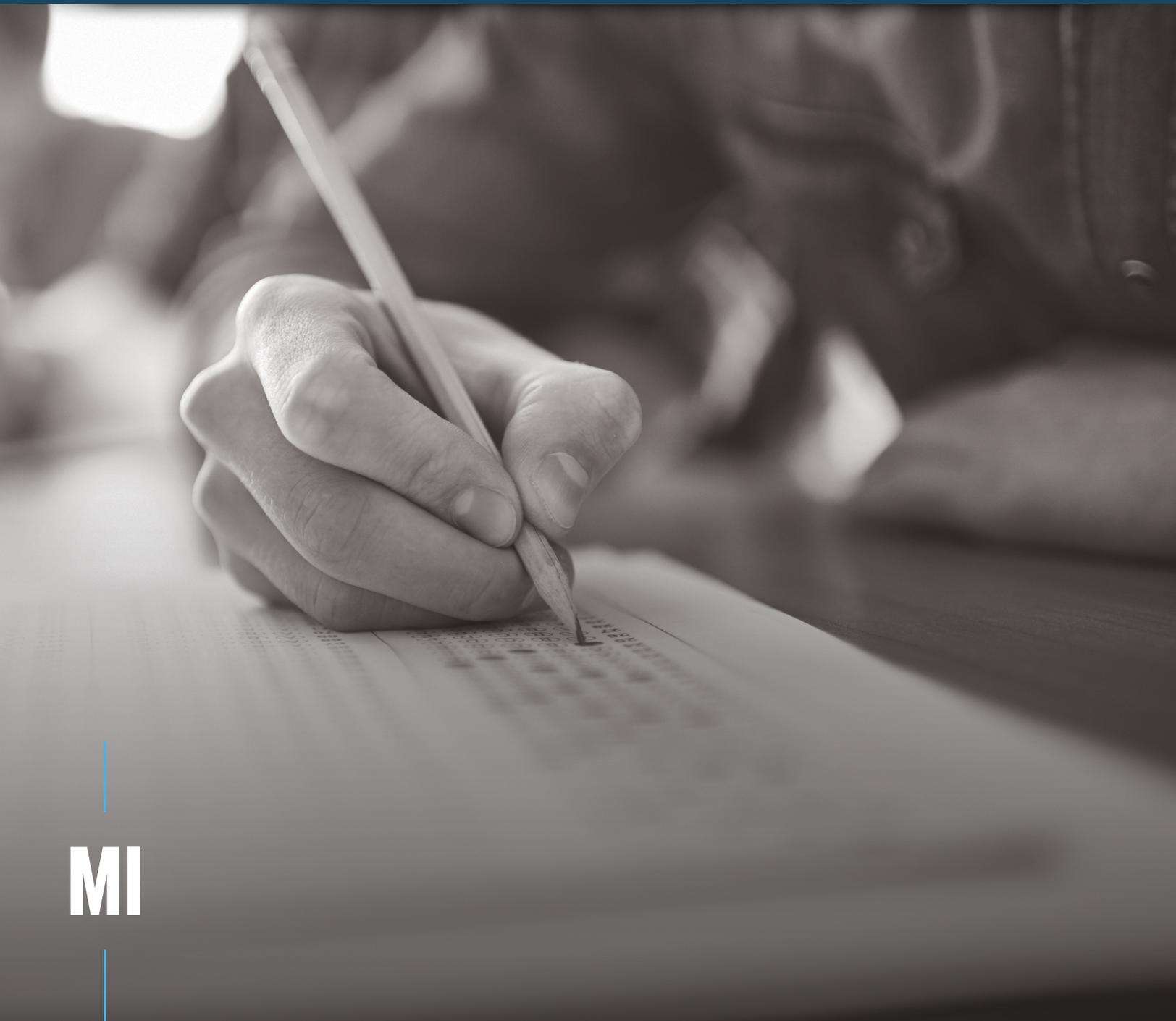# NEW YORK CHARTER SCHOOLS OUTPERFORM TRADITIONAL SELECTIVE PUBLIC SCHOOLS

MORE EVIDENCE THAT CREAM-SKIMMING IS NOT DRIVING CHARTERS' SUCCESS

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About the Author

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Executive Summary

Critics of charter schools in New York City, America's largest school district, often allege that charters score better on standardized tests, on average, than traditional public schools because charters "cream-skim" (i.e., attract) the brightest, most motivated, students.[1]

Yet this accusation neglects the fact that not all traditional public schools are open admission. Some, such as Stuyvesant High School and the Bronx High School of Science, use entrance exams and other demanding criteria to recruit the best students. New York is also home to 98 traditional selective public middle schools.

If admitting students with better academic credentials were the key to better test scores, New York's traditional selective public schools (which pursue such practices) would easily outperform its charter schools (whose students are admitted by lottery and are more likely to be poor and nonwhite). But this is not the case.

This report compares aggregate test scores in math and English in New York's 73 charter middle schools with those of its 98 traditional selective middle schools. (There are no traditional selective elementary schools, and state exams in math and English are not administered after eighth grade, the final year of middle school.) It finds that students at charters score equally well in math as (though worse in English than) students in traditional selective schools. However, when an apples-to-apples comparison is made by comparing students only from similar racial and socioeconomic backgrounds, charters shine more brightly: their students score better in math than, and just as well in English as, those in traditional selective schools.

These findings do not reveal the extent to which New York charters are responsible for their students' striking success (though numerous other empirical studies suggest that charters have a large positive impact). But the findings do cast serious doubt on claims that New York charters succeed primarily because their students are better.

NEW YORK CHARTER SCHOOLS OUTPERFORM TRADITIONAL SELECTIVE PUBLIC SCHOOLS

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Introduction

Students in New York City charter schools score better, on average, on statewide standardized tests than do students in nearby traditional public schools. But charter school critics are right when they point out that simply comparing the aggregate scores of students in charter and traditional public schools is misleading. By law, charters cannot select their students—if there are more applicants than available seats (as in New York and most other big cities), enrollment is determined by a lottery.[2] Still, charter students represent a "self-selected" group because they must apply to the charter that they wish to attend.

Considerable empirical research—using methodologies that account for this self-selection issue—shows that, on average, students who attend a New York City charter do much better than they would if they attend their default traditional public school.[3] Despite such abundant evidence, many charter critics continue to claim that New York City charters post higher scores than traditional public schools because charter students self-select.

Some take their criticism even further, alleging that charters are not true public schools because they are not open to every student who may wish to enter. However, traditional public schools are not open to all students, either: to attend Beverly Hills High School, for example, one must be wealthy enough to live in Beverly Hills. Moreover, some traditional public schools explicitly select their students.

Consider New York City, which boasts some of the most famous traditional selective public schools in America, including Stuyvesant and Bronx Science, where admission is determined by a rigorous entrance exam. New York is also home to 98 traditional selective middle schools (**Figure 1**).

New York's Traditional Selective Middle Schools*

School	Behavior	Grade 4 Tests	Grade 4 Report Card	Attendance	Open House	Punctuality	Rank	Entrance Exam	Interview	Writing Prompt	Math Exercise	Audition
Academic & Athletic Excellence	1	1	0	1	0	1	0	0	0	0	0	0
Academy of Arts and Letters	1	0	1	0	0	0	0	0	0	1	0	0
Bilingual Center	0	1	1	1	0	1	0	0	0	0	0	0
Boerum Hill School for International Studies	0	1	1	1	1	1	0	0	1	0	0	0
Booker T. Washington	1	1	1	0	0	0	0	1	0	0	0	0
Bronx Dance Academy	1	0	1	1	0	1	0	1	0	0	0	1
Bronx School for Law, Government, and Justice	0	1	1	1	0	0	0	0	1	0	0	0
Bronx School for Medical Science	0	1	1	1	0	1	0	0	0	0	0	0
Brooklyn School for Collaborative Studies	1	0	1	1	0	0	0	0	0	0	0	0
Brooklyn School of Inquiry	1	1	1	1	0	0	0	0	0	0	0	0
Carroll Gardens School for Innovation	1	0	1	1	0	1	0	0	1	0	0	0
Channel View School for Research	0	1	1	1	0	1	0	0	1	1	0	0
Charles O. Dewey Middle School	1	1	1	1	0	0	0	0	0	0	0	0
Christa McAuliffe School	0	1	1	1	0	1	0	0	0	0	0	0
Clinton School for Writers & Artists	0	1	1	1	0	1	0	0	1	1	1	0
Columbia Secondary School for Math, Science, and Engineering	0	1	1	1	0	1	0	1	0	0	0	0
Community Action School	1	1	0	1	0	1	0	0	1	0	0	0
Computer School	1	1	1	1	0	0	0	0	1	1	0	0
Conselyea Preparatory School	1	0	0	1	1	1	1	0	0	0	0	0
Dock Street School	1	1	1	1	0	0	0	0	1	1	0	0
Dr. Susan S. McKinney Secondary School of the Arts	0	1	1	1	0	1	0	0	0	0	0	1
Dual Language Middle School	1	0	1	1	0	1	0	0	1	0	0	0
East New York Family Academy	0	1	1	1	0	1	0	0	0	0	0	0
East Side Middle School	1	1	1	1	0	1	0	0	1	1	1	0
Eugenio Maria de Hostos	1	1	1	1	0	0	0	0	0	0	0	0
Fort Greene Preparatory Academy	0	0	0	0	0	0	0	0	1	1	0	0
47 American Sign Language and English Lower School	0	1	1	1	0	1	0	0	1	0	0	0
Frederick Douglass Academy II Secondary School	0	1	1	0	0	0	0	0	1	1	0	0
Frederick Douglass Academy VIII	0	1	0	1	1	0	0	1	0	0	0	0
Hostos-Lincoln Academy of Science	0	1	1	1	0	0	0	0	0	0	0	0
Hudson River Middle School	1	0	0	1	0	1	1	0	1	0	0	0

School												
Hugo Newman School	1	1	1	1	0	1	0	0	0	0	0	0
I.S. 392	1	1	1	1	1	0	0	1	1	0	0	0
Isaac Newton Middle School for Math and Science	0	1	1	1	0	0	1	0	0	0	0	0
Island School	0	1	1	1	0	0	0	0	0	0	0	0
James Weldon Johnson Leadership Academy	1	1	1	1	0	1	0	0	0	0	0	0
John D. Wells	1	1	1	1	0	0	0	0	0	0	0	0
Jonas Bronck Academy	0	0	1	1	1	1	0	0	1	0	0	0
Joseph Lanzetta School	1	1	1	1	1	0	0	0	0	0	0	0
Juan Morel Campos Secondary School	0	1	1	1	0	1	0	0	0	0	0	0
KAPPA V	1	1	1	1	1	1	0	0	1	0	0	0
Knowledge and Power Preparatory Academy	1	0	1	0	0	0	0	1	0	0	0	0
Life Sciences Secondary School	1	1	1	1	0	1	0	0	0	0	0	0
Lower Manhattan Community Middle School	1	0	1	1	0	0	0	0	1	0	0	0
M.S. 297	1	1	1	1	0	1	0	0	0	0	0	0
Mamie Fay	1	1	1	1	0	0	0	0	0	0	0	0
Manhattan Academy of Technology/Jacob Riis	1	1	1	1	0	1	0	0	0	1	1	0
Manhattan East School for Arts & Academics	1	1	0	1	0	0	0	1	1	0	0	0
Manhattan School for Children	0	1	1	1	0	1	0	0	1	0	0	0
Math & Science Exploratory School	1	1	1	0	0	0	0	0	0	0	0	0
Mott Hall School	1	1	1	1	0	0	0	1	0	0	0	0
Mott Hall II	1	1	1	1	0	1	0	0	1	0	0	0
Mott Hall III	1	1	0	1	0	1	0	0	1	1	0	0
Mott Hall IV	1	1	1	1	1	0	0	1	1	0	0	0
Museum Magnet School	0	0	0	1	0	0	0	0	1	0	0	0
Nathan Straus Preparatory School of Humanities	1	0	0	1	1	1	1	0	0	0	0	0
New Explorations into Science, Technology and Math School	0	1	1	1	0	0	0	1	0	0	0	0
NYC Lab Middle School for Collaborative Studies	0	0	0	1	0	1	0	1	0	0	0	0
P.S. / I.S. 295	1	1	1	1	0	0	0	0	0	1	0	0
Park Place Community	1	0	0	1	1	0	1	0	0	0	0	0
Park Slope Educational Complex at MS 88	1	1	1	1	1	0	0	0	1	1	0	0
Patrick Henry Preparatory School	1	1	1	1	1	1	0	0	0	0	0	0
Paula Hedbavny School	0	1	1	1	0	1	0	0	0	1	0	0
Philippa Schuyler	0	1	1	1	0	0	0	0	0	1	0	0
Professional Performing Arts School	0	1	1	1	0	1	0	0	0	0	0	1
Queens Gateway to Health Sciences Secondary School	0	1	1	1	0	1	0	0	0	0	0	0
Robert E. Simon	0	1	1	1	0	1	0	0	0	1	0	0
Robert F. Wagner, Jr. Secondary School for Arts and Technology	0	1	1	0	1	0	0	0	1	1	0	0
Robert Wagner	1	1	1	1	0	1	1	0	0	0	0	0
Ronald Edmonds Learning Center	0	1	1	1	0	1	0	1	0	0	0	1
Roosevelt Island	1	1	1	0	0	0	0	0	1	1	1	0
Salk School of Science	1	1	1	1	0	1	0	0	1	1	0	0

School	Behavior	Grade 4 Tests	Grade 4 Report Card	Attendance	Open House	Punctuality	Rank	Entrance Exam	Interview	Writing Prompt	Math Exercise	Audition
Samuel Stern	1	1	1	1	0	1	0	0	0	0	0	0
Satellite East Middle School	0	1	1	1	0	1	0	0	0	0	0	0
School of the Future	0	1	1	1	0	1	0	0	1	0	0	0
Science, Technology and Research Early College at Erasmus	0	1	1	1	0	1	0	1	1	0	0	0
Simon Baruch Middle School	1	1	1	1	0	1	1	0	0	0	0	0
South Bronx Preparatory	1	1	1	1	1	0	0	0	1	0	0	0
Sun Yat Sen Middle School	1	1	1	1	0	1	0	0	0	0	0	0
Sunset Park Preparatory	1	1	1	1	0	0	0	0	0	0	0	0
Teachers Preparatory Secondary School	0	1	1	1	0	0	0	0	0	0	0	0
Technology, Arts, and Science Studios	1	0	0	1	0	1	0	0	0	0	0	0
Theatre Arts Production Company School	0	1	0	1	0	1	0	1	1	0	0	1
30th Avenue School	1	1	1	1	0	0	0	0	0	0	0	0
Thurgood Marshall Academy for Learning and Social Change	0	1	1	1	0	1	0	0	0	0	0	0
Tompkins Square Middle School	1	0	0	1	0	1	0	0	1	0	0	0
University Neighborhood Middle School	0	0	1	1	1	1	0	0	0	0	0	0
Upper Ten Eyck School	0	1	1	1	0	1	0	0	0	0	0	0
Urban Assembly Institute of Math and Science for Young Women	0	1	1	1	0	1	0	0	1	1	0	0
Wadleigh Secondary School for the Performing & Visual Arts	0	1	1	1	0	1	0	0	0	0	0	0
West End Secondary School	0	1	1	1	1	1	0	0	0	0	0	0
West Side Collaborative Middle School	0	1	0	1	0	1	1	0	0	0	0	0
William Alexander Middle School	1	1	1	1	0	0	0	0	0	0	0	0
Young Women's Leadership School	1	1	1	0	1	0	0	0	1	1	0	0
Young Women's Leadership School, Astoria	0	1	1	0	1	0	0	0	1	1	0	0
Young Women's Leadership School of Brooklyn	0	1	1	0	1	0	0	0	1	1	0	0
Young Women's Leadership School of the Bronx	0	1	1	0	1	0	0	0	1	1	0	0
Young Women's Leadership School, Queens	0	1	1	1	0	1	0	0	0	0	0	0

*A "1" for "entrance exam," for example, indicates that the school uses an entrance exam as part of its admissions criteria; a "0" indicates that it does not. A "1" for "open house" means that the school requires prospective students to attend an open house; a "1" for "rank" means that students are assessed by their class academic rank; a "1" for "writing prompt" means that students are required to complete a short essay, etc. Even though middle school typically starts in grade 6, these schools use grade 4 report cards and tests to evaluate students because grade 5 report cards and tests are likely not available in time to make admissions decisions.

Source: NYC Department of Education[4]

As Figure 1 shows, these 98 traditional middle schools use various criteria to select students. Arts-oriented schools, for instance, might require students to audition. Some schools emphasize student behavior, such as attendance records. Others prioritize admissions interviews. And many select students based on standardized test scores and other academic indicators.

Given the rigorous admissions criteria at traditional selective middle schools, it is not surprising that charter middle schools enroll more students from disadvantaged backgrounds (**Figure 2**). Charter students, for example, are more likely to be African-American and eligible for free or reduced-price lunch.

Test Scores Unadjusted for Student Demographics

How do New York's charter middle schools stack up academically against the city's traditional selective middle schools? In such a comparison, charters face a clear disadvantage: as noted, charters cannot select their students; if demand for seats exceeds supply, a lottery divvies up spots.

To compare the scores of charter and traditional selective middle schools on state math and English language arts (ELA) exams, we use data from New York City's 2013–14 School Quality Reports—the last school year for which student demographics *and* exam performance of particular schools were reported. **Figure 3** compares aggregate test scores of charters with those of traditional selective and nonselective public schools without adjusting for student demographics. (Scores for all traditional selective schools are reported, as well as scores for certain selective schools that emphasize various academic criteria for admission, such as entrance exams.)

Specifically, Figure 3 displays the respective percentages of students

FIGURE 2.

Student Backgrounds, Middle School Charters vs. Non-Charters, % of Total*

	Charters	Traditional Selective Public Schools	Traditional Nonselective Public Schools
English Language Learner	5.6%	7.8%	13.1%
Special Education	17.0%	19.8%	21.3%
Self-Contained Classrooms	1.0%	3.6%	6.7%
Temporary Housing	7.5%	10.7%	13.0%
HRA-Eligible	55.1%	51.6%	56.9%
Asian	2.7%	11.1%	10.0%
African-American	56.3%	33.0%	36.3%
Hispanic	35.3%	41.0%	41.4%
Free or Reduced-Price Lunch	71.6%	65.3%	72.9%
Number of schools	73	94	418
Economic Need Index	0.71	0.69	0.78

*"Self-contained classrooms" are normally composed of five to 10 special-education students. "Temporary housing" indicates the percentage of students who live in shelters or otherwise lack permanent addresses. "HRA-eligible" indicates the percentage of students who receive certain types of public assistance. The higher the score on the "economic need index," the less affluent the students.

Source: NYC Department of Education

FIGURE 3.

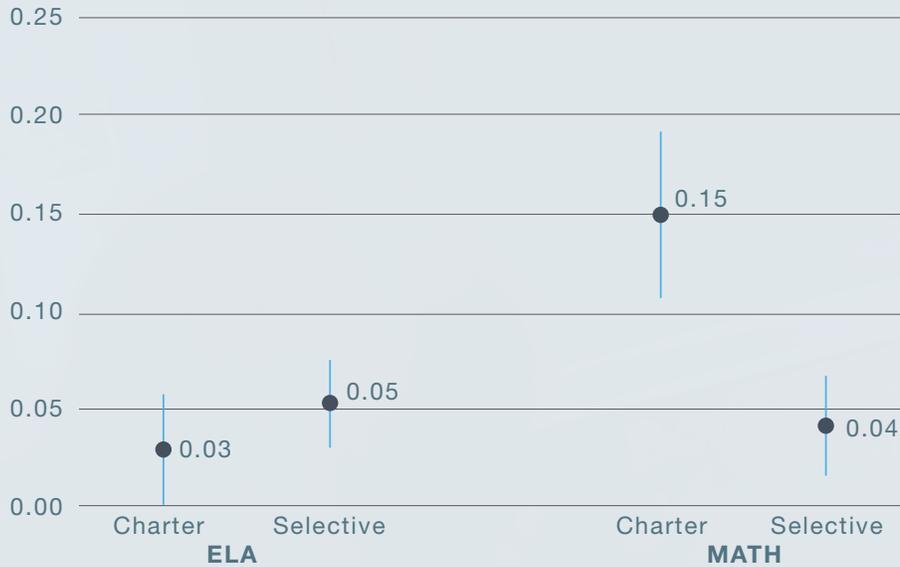## ELA and Math Scores (Unadjusted for Student Demographics)*

	ELA, % Proficient	Math, % Proficient	ELA, Adjusted Growth Percentile	Math, Adjusted Growth Percentile
Charters	24.6%	38.3%	61.9	64.2
Traditional Nonselective Schools	*20.7%*	**24.2%**	**63.5**	**61.2**
Traditional Selective Schools	**32.2%**	34.7%	**65.1**	62.0
Traditional Selective Schools That Emphasize:				
Grade 4 ELA/Math Exams	**33.6%**	36.2%	**65.1**	61.9
Grade 4 Report Cards	**33.3%**	36.2%	**65.0**	61.8
Entrance Exam/ Writing Prompt (Essay)/Math Exercise (Quiz)	**40.1%**	43.0%	**64.6**	61.8
Interview	**32.2%**	35.1%	**64.9**	61.8
Attendance/Punctuality	**31.6%**	34.0%	**65.7**	62.3

***Bold** figures of traditional selective and nonselective schools signify a statistically significant difference with the respective charter figure, at 5% significance; *italicized* figures of traditional selective and nonselective schools signify a statistically significant difference with the respective charter figure, at 10% significance.

Source: NYC 2013–14 School Quality Reports

FIGURE 4.

Percentage Scoring Proficient or Better* in ELA and Math Relative to Traditional Public Schools (Adjusted for Student Demographics)

0.25

0.20

0.15 ——— 0.15

0.10

0.05 ——— 0.05

0.03

0.00

| Charter | Selective | | Charter | Selective |

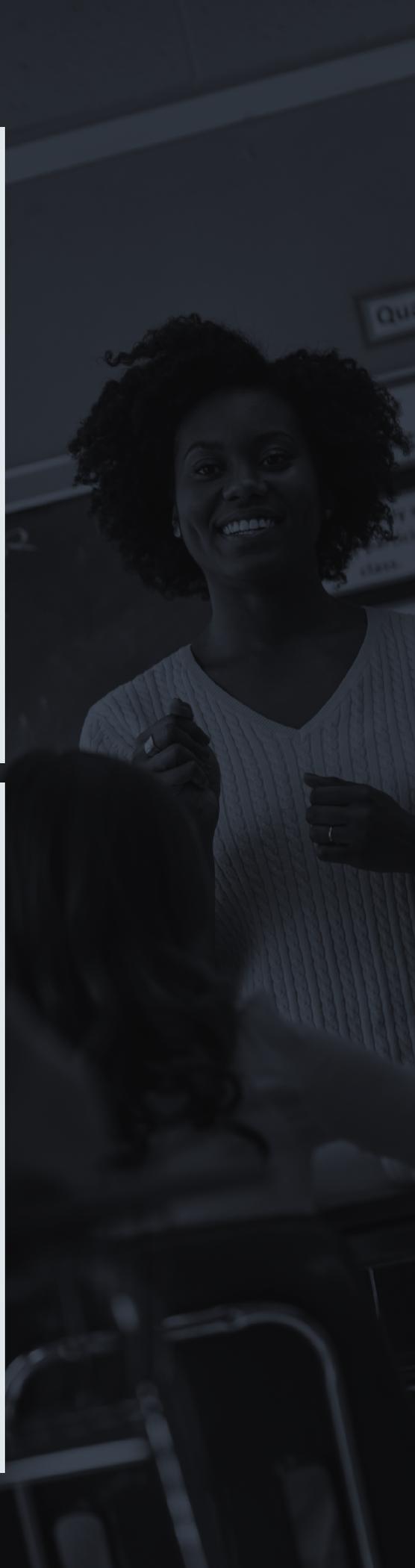ELA   MATH

0.04

*Level 3 or 4

Source: Author's analysis of data from NYC 2013–14 School Quality Reports

FIGURE 5.

Adjusted Growth Percentile in ELA and Math (Adjusted for Student Demographics)

10.00

8.00

6.00 ——— 6.20

4.00

2.27

2.00 ——— 1.76

1.06

0.00

-2.00

| Charter | Selective | | Charter | Selective |

ELA   MATH

Source: Author's analysis of data from NYC 2013–14 School Quality Reports

who score at level 3 or 4 (i.e., proficient or better) on state math and ELA exams; and it shows adjusted growth percentile (i.e., a student who scored in the 70th percentile, for example, did better than 70% of similar students), a measure of a school's value-added contribution to student performance.

Figure 3 shows that charter and traditional selective middle schools score uniformly better than traditional nonselective middle schools. Meanwhile, traditional selective schools score significantly better than charters in ELA—though the difference in performance is more modest for ELA test-score growth than for proficiency level. In math, however, average scores—in proficiency level and test-score growth—for charters are statistically indistinguishable from those of traditional selective schools, both for all selective schools and those with certain academically oriented selection criteria.

In other words, despite the fact that traditional selective schools often cream-skim the brightest, most motivated, students, charters perform just as well in math (proficiency level *and* test-score growth) and only modestly worse in ELA test-score growth.

Test Scores Adjusted for Student Demographics

Next, we use a regression analysis to compare math and ELA scores of charter and traditional public schools, after controlling for observed differences of students.[6] Traditional nonselective schools are the comparison group.[7] Because this analysis cannot account for unobserved differences—such as access to information resources and parental engagement—it is descriptive, not causal.

Dependent variables are the percentage of students who score proficient or better (**Figure 4**) and adjusted growth percentiles (**Figure 5**). Independent variables include the school's economic-need index, the percentage of students of various races/ethnicities, and the proportion of students who are in self-contained classrooms, who are in temporary housing, who are HRA-eligible, who are eligible for free or reduced-price lunch, who are enrolled in special education, and who are classified as English language learners.

In Figures 4–5, the dot in the middle of each line represents estimates ("the score") for each school type relative to

traditional (selective and nonselective) public schools. The number on the side of the dot is the numerical estimate. And the line represents the 95% confidence interval (i.e., we can be 95% confident that the true difference between the scores of a respective school type and the average traditional public school lies on the line).

We see that charters and traditional selective schools have higher scores, on average, than traditional nonselective schools: all estimates (i.e., dots in the middle of the lines) for these school types are above the 0 line, which represents the percentage proficient (or adjusted growth percentile) of traditional nonselective schools.

We also see that traditional selective schools continue to score higher in ELA (proficiency level and test-score growth) than charters; but the ELA gaps are no longer statistically significant. In other words, charters and traditional selective schools score equally well in ELA after accounting for student demographics. Finally, we see that charters score higher in math (proficiency level and test-score growth) than traditional public schools; the math gaps are statistically significant.

Conclusion

These findings do not prove the extent to which New York charters are responsible for their students' success—though plenty of empirical research suggests that students who attend New York charters do significantly better than had they attended traditional public schools.

However, the findings in this report do cast serious doubt on claims that New York charters flourish primarily by attracting the brightest, most motivated, students. If admitting students with better credentials were the key to better test scores, New York's traditional selective public middle schools, which pursue such practices, would easily outperform its charter middle schools, which do not.

Instead, charter students, who are more likely to be poor and nonwhite, score equally well in math as (though worse in English than) students in traditional selective schools. And when an apples-to-apples comparison is made by comparing students only from similar racial and socioeconomic backgrounds, charters shine more brightly: they score better in math than, and just as well in English as, traditional selective schools.

Endnotes

1   See, e.g., Yoav Gonen, "Charter Schools Score Well by 'Excluding Special Needs Students': De Blasio," *New York Post*, Aug. 11, 2016.

2   If the supply of seats exceeds demand, every applicant is accepted.

3   See, e.g., Caroline M. Hoxby, Sonali Murarka, and Jenny Kang, "How New York City's Charter Schools Affect Achievement," New York City Charter Schools Evaluation Project, Sept. 2009.

4   "Resources: District Directories," NYC Department of Education.

5   See, e.g., Suzie Dalien, "Self-Contained Classroom Defined," Special Ed Resource.

6   The analysis uses heteroskedastic robust standard errors.

7   Though the model uses other controls, we do not report their estimated relationships because they are irrelevant to the issue at hand.

Abstract

Critics of charter schools in New York City, America's largest school district, often allege that charters score better on standardized tests, on average, than traditional public schools because charters "cream-skim" (i.e., attract) the brightest, most motivated, students.

Yet this accusation neglects the fact that not all traditional public schools are open admission. Some, such as Stuyvesant High School and the Bronx High School of Science, use entrance exams and other demanding criteria to recruit the best students. New York is also home to 98 traditional selective public middle schools.

If admitting students with better academic credentials were the key to better test scores, New York's traditional selective public schools (which pursue such practices) would easily outperform its charter schools (whose students are admitted by lottery and are more likely to be poor and nonwhite). But this is not the case.

This report compares aggregate test scores in math and English in New York's 73 charter middle schools with those of its 98 traditional selective middle schools. (There are no traditional selective elementary schools, and state exams in math and English are not administered after eighth grade, the final year of middle school.) It finds that students at charters score equally well in math as (though worse in English than) students in traditional selective schools. However, when an apples-to-apples comparison is made by comparing students only from similar racial and socioeconomic backgrounds, charters shine more brightly: their students score better in math than, and just as well in English as, those in traditional selective schools.

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