

WHAT CAN WE LEARN FROM CHARTER SCHOOL LOTTERIES IN THE UNITED STATES?

The estimated impacts of charter schools have varied widely. In Massachusetts, students who won lotteries for charter schools located in urban areas often did substantially better than students who lost, while students who won lotteries for charter schools in nonurban areas fared, on average, about the same or somewhat worse compared to those who lost. A common feature of the charter schools with the most positive effects has been the adoption of a “No Excuses” educational approach.



ANTONIO DIAZ | SHUTTERSTOCK.COM

KEY RESULTS:

- There has been wide variation in the estimated impacts across charter schools.
- In Massachusetts, lottery winners for charter schools located in urban areas often did substantially better than lottery losers. Lottery winners for charter schools in nonurban areas fared, on average, about the same or somewhat worse compared to lottery losers.
- A common feature of the charter schools with the most positive effects has been the adoption of a No Excuses educational approach. Most No Excuses schools have located in urban areas, and urban charter schools have tended to attract students who would have otherwise attended poor-performing traditional public schools. As a result, it is difficult to disentangle whether the substantial performance gains associated with attending a No Excuses charter school in an urban area are due to the No Excuses approach or to the low quality of the public school alternatives.
- In urban areas, the effect of charter school attendance was larger for black students, Hispanic students, and previously poor-performing students.
- Some No Excuses charter schools in urban areas have been shown to have positive impacts on longer-term outcomes, including improving college preparation and enrollment, reducing teen pregnancy, and reducing incarceration among male students.
- A study in Texas that randomly assigned traditional public schools to implement a set of practices associated with the most effective charter schools found that these practices increased math achievement.

In the United States, there are approximately 6,500 publicly funded charter schools, which collectively enroll about 2.5 million students.¹ While charter schools enroll over 6 percent of public school students in the United States, in some urban school districts, more than 30 percent of public school students are enrolled in charter schools.²

Charter schools are public schools that are granted flexibility by state law over their operations, including staffing, finances, and curriculum, and they have used this flexibility to adopt a wide variety of educational approaches. Charter schools were originally designed as testing grounds for new and innovative approaches to improving student achievement. Charter schools also provide students and their families with alternatives to traditional public schools, particularly in areas where traditional public schools perform poorly.

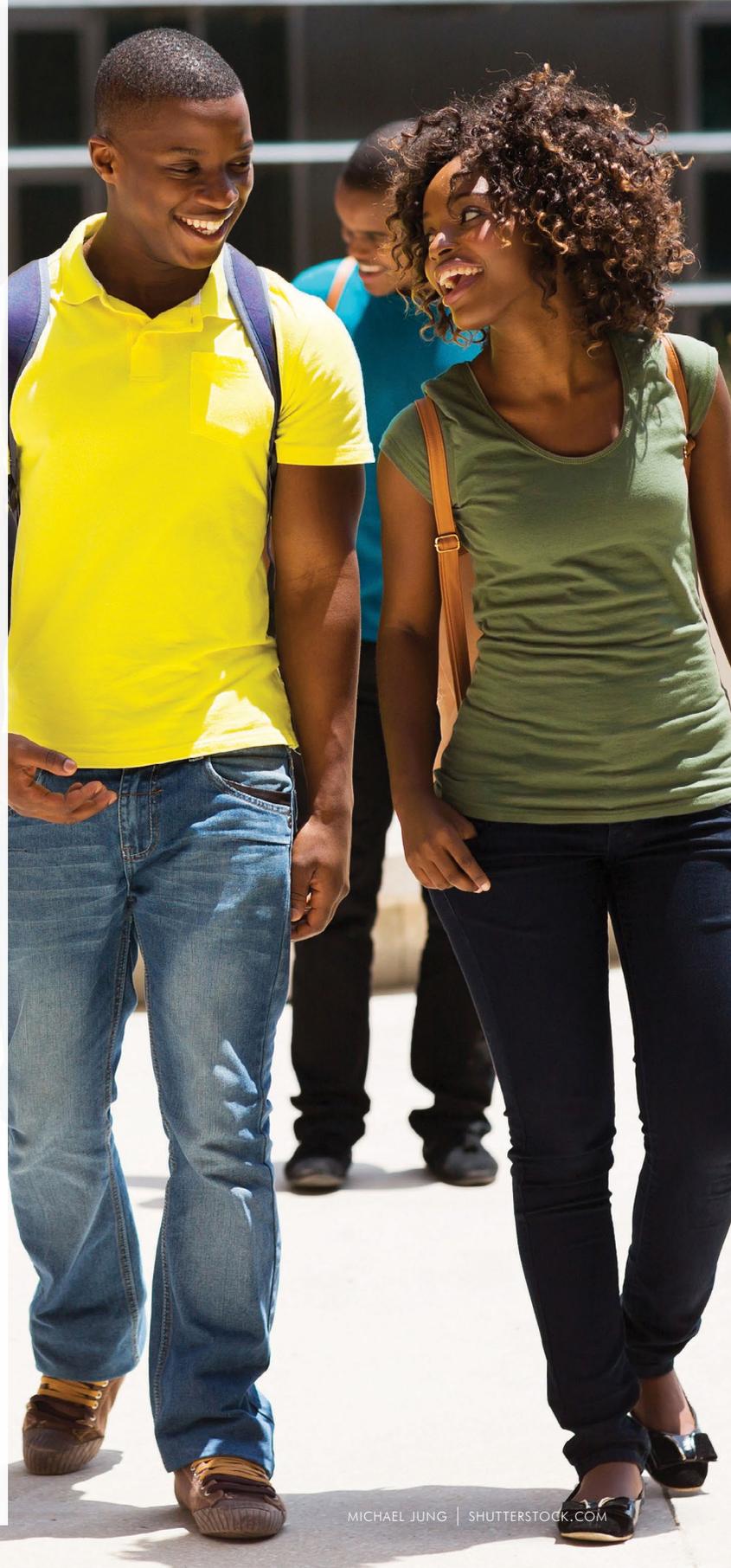
By law, charter schools must be open to any student residing in a given school district, region, or state. When more students apply to enter a charter school than the school has seats available, the charter school must admit students by lottery. Starting in 2004, researchers began to draw upon the random assignment embedded in charter school lotteries to generate rigorous evidence about the impact of charter school attendance on student learning and other outcomes. The studies reviewed here provide evidence about the effectiveness of charter schools across a variety of settings.

The charter schools with the most positive impacts tend to be in urban areas where the traditional public school alternatives are generally poor performing and to have adopted a so-called No Excuses approach. This approach is characterized by strict and clear disciplinary policies, mandated intensive tutoring, longer instruction times, frequent teacher feedback, and high expectations for students. A common feature of the most successful charter schools, regardless of their location, is that they often use mandated intensive tutoring to supplement classroom instruction.

Public schools can also benefit from adopting practices associated with successful charter schools: a study in Texas randomly assigned public schools in disadvantaged neighborhoods to implement a set of five charter school best practices and found positive impacts on math achievement.

¹ National Center for Education Statistics. 2015. "The Condition of Education 2015: Charter School Enrollment." US Department of Education. http://nces.ed.gov/programs/coe/indicator_cgb.asp.

² National Alliance for Public Charter Schools. 2016. "A Growing Movement: America's Largest Charter School Communities." <http://www.publiccharters.org/wp-content/uploads/2016/11/CharterSchoolEnrollmentShareReport2016.pdf>



EVALUATIONS

FEATURED EVALUATIONS

This bulletin reviews 17 evaluations in the United States that used charter school lotteries to study the impact of charter schools on student test scores or other outcomes, as well as one study that examined the impact of replicating charter school practices in traditional public schools. In addition to these evaluations, this bulletin draws upon a review by Julia Chabrier (J-PAL North America), Sarah Cohodes (Teachers College, Columbia University), and Philip Oreopoulos (University of Toronto) that combined school-level data from eight of these studies,³ covering 113 schools in total, to examine how the characteristics of charter schools may have influenced their results and how the effects of charter schools may have varied across different groups of students.⁴ This bulletin does not include evaluations of other forms of school choice, such as school vouchers that provide public funding for students attending private schools, open enrollment policies that allow students to attend schools outside their neighborhoods, or magnet schools.

The 17 studies reviewed here do not include every charter school that has held a lottery. For a charter school to be studied, the school must keep adequate records of the lottery, there must be a sufficient number of lottery winners and losers, and researchers must be able to match lottery records to the administrative or survey data used to measure outcomes.

Not every student who wins a charter school lottery attends a charter school, and not every student who loses a charter school lottery attends a traditional public school. For example, a student who loses a charter school lottery may later gain admission by moving off of a waitlist, entering another lottery, or receiving a sibling preference after a sibling wins the lottery. Most of the studies cited in this bulletin measure the impact of winning a charter school lottery in two stages. First, they estimate how winning a lottery predicts increased attendance at charter schools. Second, they estimate the effect of the predicted increase in attendance on student outcomes. Because the effects of attending a charter school are always estimated based on the outcomes of lottery winners and losers, differences in which students actually enroll or persist in charter schools do not bias the estimates.

Lottery studies are limited to charter schools that are oversubscribed, which may be different from charter schools that are not oversubscribed, and only estimate impacts for students who apply. As a result they cannot answer the question of whether more (or fewer) charter schools would benefit students, on average.⁵ Additionally, these studies do not address how the presence of charter schools affects the performance of traditional public schools.



WAVEBREAK MEDIA | SHUTTERSTOCK.COM

EVALUATIONS

A study examining four charter schools run by a prominent charter school chain in an anonymous, low-income urban school district found positive impacts from charter school attendance on test scores in reading and writing but not in math (1). In Chicago, researchers studied three charter schools managed by the Chicago International Charter Schools network and did not find an effect of charter school attendance on test scores in either reading or math (2).

In Massachusetts, researchers have studied charter schools in Boston and Lynn, as well as urban and nonurban charter schools across the state. In Boston, researchers found that charter school attendance had very large effects on English language arts and math test scores, as well as college preparation and enrollment (3, 4, 5). Studies of two individual schools—UP Academy Charter School of Boston (6) and KIPP Academy

³ Some of the 17 studies listed in Table 1 were excluded from this analysis because they were superseded by a more comprehensive or a more recent study. The results of Hoxby and Rockoff (2004) and Hastings, Nielson, and Zimmerman (2012) were excluded because the estimated effects of charter school attendance could not be converted to a common scale.

⁴ Chabrier, Julia, Sarah Cohodes, and Philip Oreopoulos. 2016. "What Can We Learn from Charter School Lotteries?" *Journal of Economic Perspectives* 30(3): 57-84. <http://dx.doi.org/10.1257/jep.30.3.57>

⁵ Angrist, Pathak, and Walters (2011) found that, using observational estimates for urban charter schools, gains were larger for charter schools in the lottery-based sample, relative to schools that were not oversubscribed or that had poorly documented lotteries. Dobbie and Fryer (2013) also find that the observational estimates for charter schools in their lottery sample are somewhat higher than for the full sample of New York City charter schools, but the difference is small. In their study of KIPP middle schools, Clark Tuttle et al. (2013) find that matching-based estimates for the schools in their lottery sample are similar to the matching-based estimates for all study schools.

EVALUATIONS



MONKEY BUSINESS IMAGES | SHUTTERSTOCK.COM

Lynn Charter School (7)—also found large effects in both English language arts and math. When researchers expanded their sample to include charter schools across Massachusetts, they found positive effects on test scores among urban schools but not among nonurban schools (8).

Researchers have conducted national studies of charter schools across 15 states (9) and of charter schools that were members of Charter Management Organizations (CMOs) across 14 states (10). These studies found that winning a charter school lottery did not have an effect on test scores, on average.

There have also been two national studies of charter schools run by KIPP, the largest network of charter schools in the United States (11, 12). The earlier study found that attendance at KIPP had positive effects on test scores in math but not in reading, while a subsequent study found positive effects in both subjects.

Two teams of researchers have studied charter schools in New York City (13, 15) and found large positive effects of charter school attendance, on average, especially in math. Two studies of the Harlem Children's Zone Promise Academy (14, 16) found positive effects on test scores in math but not in English language arts, as well as reductions in teen pregnancy (among females) and incarceration (among males).

In Washington, DC, researchers studied the SEED Public Charter School (17), a charter boarding school, and found positive effects of attendance on reading and math test scores.

In Houston, Texas (18), researchers studied the implementation of five charter school practices within a randomly selected group of eight of the school district's lowest-performing traditional public elementary schools. They found that implementing the five charter school practices increased test scores in math but not in reading.

By combining data from eight studies of charter schools noted with an asterisk in Table 1 (6, 8, 9, 10, 11, 12, 15, 17), we examine how the characteristics of individual charter schools may have influenced their impact on student test scores and take a closer look at the impact of charter schools on different groups of students.

⁶ Some of these studies also report observational results, which are not included here.

EVALUATIONS

TABLE 1. EVALUATIONS INCLUDED IN THIS BULLETIN

EVALUATION NUMBER	SETTING	LOTTERY SAMPLE ⁶	RESEARCHERS
1	Anonymous urban school district	4 schools	Hastings, Nielson, and Zimmerman (2012)
2	Chicago, Illinois	3 schools managed by Chicago International Charter Schools	Hoxby and Rockoff (2004)
3	Boston, Massachusetts	8 schools	Abdulkadiroglu, Angrist, Dynarski, Kane, and Pathak (2011)
4	Boston, Massachusetts	13 schools	Cohodes, Setren, Walters, Angrist, and Pathak (2013)
5	Boston, Massachusetts	14 schools	Angrist, Cohodes, Dynarski, Pathak, and Walters (2016)
6 *	Boston, Massachusetts	UP Academy Charter School of Boston	Abdulkadiroglu, Angrist, Hull, and Pathak (2016)
7	Lynn, Massachusetts	KIPP Academy Lynn Charter School	Angrist, Dynarski, Kane, Pathak, and Walters (2012)
8 *	Massachusetts	26 schools	Angrist, Pathak, and Walters (2013)
9 *	National	36 schools	Gleason, Clark, Clark Tuttle, Dwoyer, and Silverberg (2010)
10 *	National	16 schools that were members of charter management organizations (CMOs)	Furgeson, Gill, Haimson, Killewald, McCullough, Nichols-Barrer, Teh, Verbitsky-Savitz, Bowen, Demeritt, Hill, and Lake (2012)
11 *	National	12 KIPP schools	Clark Tuttle, Gill, Gleason, Knechtel, Nichols-Barrer, and Resch (2013)
12 *	National	24 KIPP schools	Clark Tuttle, Gleason, Knechtel, Nichols-Barrer, Booker, Chojnacki, Coen, and Goble (2015)
13	New York City	42 schools	Hoxby, Murarka, and Kang (2009)
14	New York City	Harlem Children's Zone Promise Academy middle and elementary schools	Dobbie and Fryer (2011)
15 *	New York City	29 schools	Dobbie and Fryer (2013)
16	New York City	Harlem Children's Zone Promise Academy middle school	Dobbie and Fryer (2015)
17 *	Washington, DC	The SEED Public Charter School of Washington, DC	Curto and Fryer (2014)
18	Houston, Texas	8 traditional public schools	Fryer (2014)

RESULTS



WAVEBREAK MEDIA | SHUTTERSTOCK.COM

1. THERE WAS WIDE VARIATION IN THE ESTIMATED IMPACTS ACROSS CHARTER SCHOOLS.

The average per-year effect of attending a charter school in the sample of 113 schools was an increase of 0.080 standard deviations in math and 0.046 standard deviations in English language arts. However, the estimated effects for individual schools varied widely. At some charter schools, students who won the lottery and attended the charter school had substantially higher test scores than students who lost the lottery and attended a traditional public school. At other charter schools, students who won the lottery actually performed worse than students who lost.⁷

In the sample of 113 schools, the estimated effects of a year of charter school attendance ranged from -0.57 to 1.16 standard deviations in math and -0.78 to 1.06 standard deviations in English language arts. By comparison, the achievement gap between black and white students in Massachusetts is about 0.7 to 0.8 standard deviations, suggesting that the most successful of these charter schools could close this gap in a single school year. The estimated effects for math and English language arts were highly correlated, indicating that charter schools that were effective at raising test scores in one subject generally were also effective at raising test scores in the other subject.

2. IN MASSACHUSETTS, LOTTERY WINNERS FOR CHARTER SCHOOLS LOCATED IN URBAN AREAS OFTEN DID SUBSTANTIALLY BETTER THAN LOTTERY LOSERS. LOTTERY WINNERS FOR CHARTER SCHOOLS IN NONURBAN AREAS FARED, ON AVERAGE, ABOUT THE SAME OR SOMEWHAT WORSE COMPARED TO LOTTERY LOSERS.

In Massachusetts (8), charter schools located in urban areas had large positive effects, on average, while charter schools located in nonurban areas had, on average, a negative effect at the middle school level and no effect at the high school level.

Figure 1 shows that, in Massachusetts, middle school charter applicants in both urban and nonurban areas had low proficiency rates prior to applying. Over time, performance for lottery winners who attended urban charter schools improved substantially, while performance for lottery losers improved modestly in English language arts and actually declined in math. In contrast, performance for lottery winners who attended nonurban charter schools declined over time, while performance for lottery losers improved.

One possible explanation for this pattern is that, in Massachusetts, students who lost lotteries for urban charter schools tended to attend traditional public schools with below average test scores, while students who lost lotteries for nonurban charter schools tended to attend traditional public schools with above average test scores. In the studies included in this bulletin, the impact of attending a charter school is estimated by comparing the experience of students who won the lottery for a particular charter school to the experience of students who lost the lottery for that school. As a result, a charter school that attracts students who, after losing the lottery, attend poor-performing traditional public schools will be estimated to have a more positive impact than an otherwise identical charter school that attracts students who, after losing the lottery, attend better-performing traditional public schools.

Indeed, among Massachusetts charter schools, there was a strong negative relationship between charter schools' effects on test scores and average test scores at the traditional public schools that lottery losers attend. In other words, charter schools with the most positive effects on test scores were those for which the fallback traditional public schools were the worst performing. A similar relationship between estimated charter school effects and performance at fallback traditional public schools was observed among the schools from the national charter school study (9).

⁷ An open question for researchers and policymakers is why charter schools with negative effects on test scores are oversubscribed and whether, over time, demand increases at schools with positive effects or decreases at schools with negative effects.

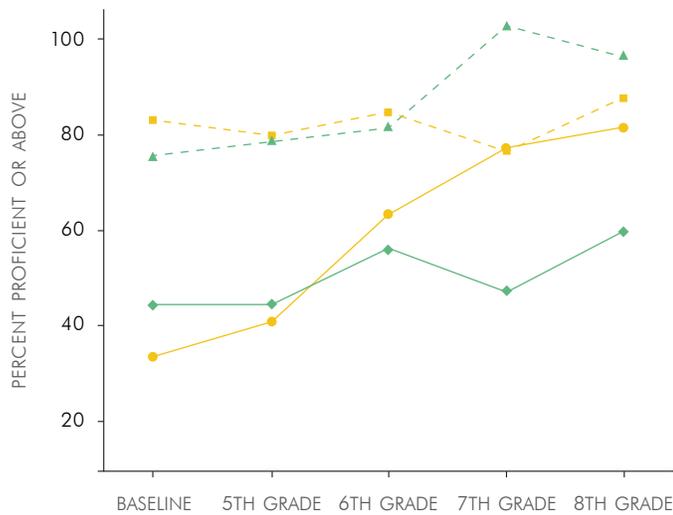
RESULTS

FIGURE 1. IN MASSACHUSETTS, LOTTERY WINNERS FOR CHARTER SCHOOLS LOCATED IN URBAN AREAS OFTEN DID SUBSTANTIALLY BETTER THAN LOTTERY LOSERS. LOTTERY WINNERS FOR CHARTER SCHOOLS IN NONURBAN AREAS FARED, ON AVERAGE, ABOUT THE SAME OR SOMEWHAT WORSE.

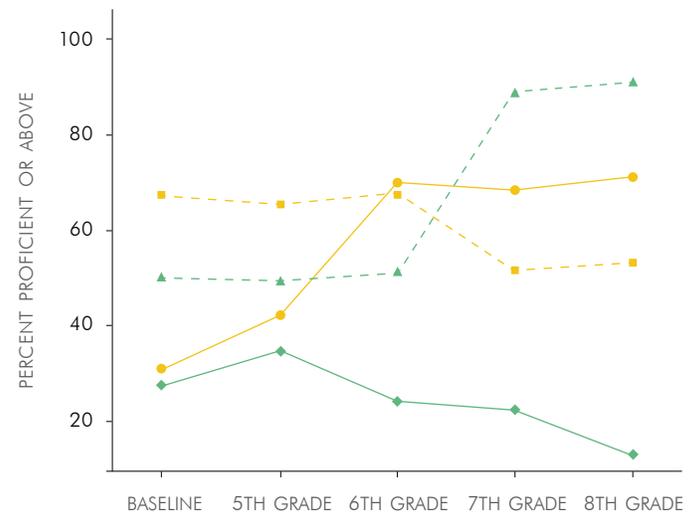
This figure shows the effect of attending urban charter schools and nonurban charter schools in Massachusetts over time. The solid lines show the percent of students scoring proficient or above on the state standardized exam for lottery winners attending urban charter schools and lottery losers attending urban noncharter schools. The dashed lines show the percent of students scoring proficient or above for lottery winners attending nonurban charter schools and lottery losers attending nonurban noncharter schools. In urban areas, performance for charter attendees improves over time, while noncharter attendees do about the same or worse. In nonurban areas, the opposite is true. The figure also shows a large proficiency gap at the high school level between urban charter attendees and urban noncharter attendees.

I. MIDDLE SCHOOL

A. ENGLISH LANGUAGE ARTS

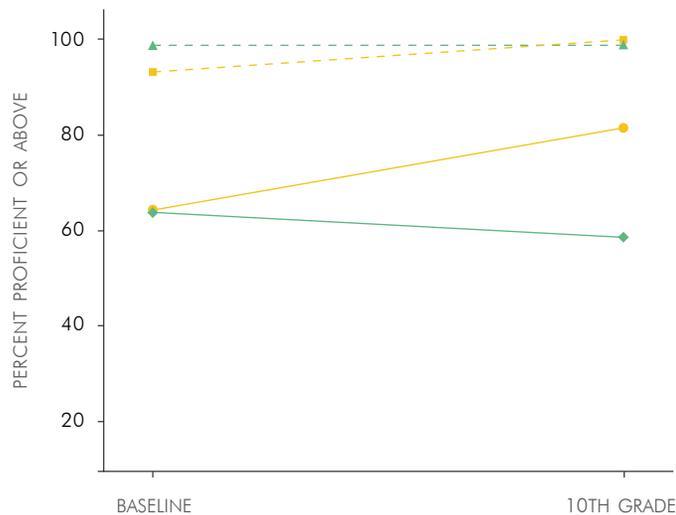


B. MATH

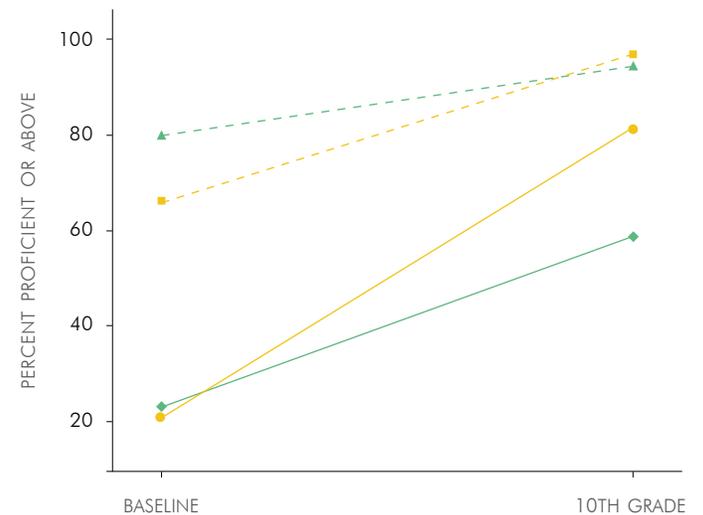


II. HIGH SCHOOL

C. ENGLISH LANGUAGE ARTS



D. MATH



● Urban charter ■ Nonurban charter
◆ Urban noncharter ▲ Nonurban noncharter

RESULTS

3. A COMMON FEATURE OF THE CHARTER SCHOOLS WITH THE MOST POSITIVE EFFECTS HAS BEEN THE ADOPTION OF A NO EXCUSES EDUCATIONAL APPROACH.

Most No Excuses schools have located in urban areas, and urban charter schools have tended to attract students who would have otherwise attended poor-performing traditional public schools. As a result, it is difficult to disentangle whether the substantial performance gains associated with attending a No Excuses charter school in an urban area are due to the No Excuses approach or to the low quality of the public school alternatives.

Studies of the UP Academy Charter School of Boston (6), KIPP Academy Lynn Charter School (7), Harlem Children’s Zone Promise Academy (14), and the SEED Public Charter School of Washington, DC (17) have found large positive effects on student performance, particularly in math. These four schools are all located in disadvantaged urban areas, where the traditional public school alternatives are relatively low performing. Moreover, all four schools have adopted a similar set of educational practices known as No Excuses.

In Massachusetts (8), researchers studied which characteristics of charter schools were most associated with charter school effectiveness, using both observational and lottery-based estimates. They found that the most effective charter schools were those that adopted a No Excuses approach to education that emphasizes discipline and comportment, traditional reading and math skills, instructional time, and selective teacher hiring. In New York City (15), researchers completed a similar analysis using observational estimates and identified a set of five school practice characteristics that were associated with the most effective charter schools and aligned with the No Excuses approach: frequent teacher feedback, the use of data to guide instruction, increased instructional time, high dosage tutoring, and high expectations.

In a sample combining lottery-based estimates of charter school impacts from New York City (15), Massachusetts (8), and the national charter school study (9), each of these five school practice characteristics was positively associated with charter school effectiveness in at least one subject. In contrast, school resource inputs—class size, per-pupil expenditures, the fraction of teachers with an advanced degree, and the fraction of teachers with a teaching certification—were not predictive of charter school effects in math. In English language arts, higher per-pupil expenditures were associated with more effective charter schools, but smaller class sizes were associated with less effective charter schools.

It is unclear whether No Excuses charter schools have tended to have the most positive effects because of their No Excuses approach, or because these schools often locate in the most disadvantaged urban areas. As noted earlier, charter schools in urban areas, where the traditional public schools have been generally poor performing, have had more positive effects than charter schools in nonurban areas, where the traditional public schools have been generally better performing. Charter schools in urban areas have tended to be No Excuses schools, while there have been very few No Excuses schools in nonurban areas.

After taking into account both urban location and the performance levels of the fallback traditional public schools, and controlling for other school characteristics, none of the school practices were associated with higher test scores in English language arts, and intensive tutoring was the only No Excuses school practice that was associated with higher test scores in math. This evidence suggesting the potential effectiveness of intensive tutoring is in line with several recent randomized evaluations that found large increases in student performance from tutoring.⁸

⁸ Randomized experiments showing gains from intensive tutoring include: Lee et al. (2010), who study the Experience Corps® (EC) program for placing older adults as volunteers in elementary schools to tutor students in reading; Fryer (2014), who studied the use of intensive tutors in fourth, sixth, and ninth grades in Houston public schools; Markovitz et al. (2014), who evaluated the Minnesota Reading Corps, a literacy tutoring program for kindergarten through third grade students; Cook et al. (2015), who studied an intensive tutoring program serving male ninth and tenth graders in twelve public high schools in Chicago; and May et al. (2014), who evaluated an early-intervention literacy tutoring program called Reading Recovery.

RESULTS

FIGURE 2. COMBINING DATA FROM THE MASSACHUSETTS (8) AND NATIONAL CHARTER SCHOOL STUDIES (9), URBAN CHARTER SCHOOLS HAD POSITIVE EFFECTS ACROSS MOST GROUPS OF STUDENTS, WHILE NONURBAN CHARTER SCHOOLS HAD NEGATIVE OR NO EFFECTS.

	URBAN		NONURBAN	
	MATH (1)	ENGLISH LANGUAGE ARTS (2)	MATH (3)	ENGLISH LANGUAGE ARTS (4)
Male	↑	↑	(no effect)	(no effect)
Female	↑	↑	↓	↓
Black/Hispanic	↑	↑	(no effect)	(no effect)
White	(no effect)	(no effect)	↓	↓
Low Baseline Score	↑	↑	(no effect)	(no effect)
Not Low Baseline Score	↑	↑	↓	↓
Subsidized Lunch	↑	↑	(no effect)	(no effect)
Not Subsidized Lunch	↑	↑	↓	↓
Special Education	↑	↑	(no effect)	(no effect)
Not Special Education	↑	↑	↓	↓
English Language Learner	↑	↑	(no effect)	(no effect)
Not English Language Learner	↑	↑	↓	↓

Note: Up and down arrows represent statistically significant differences in outcomes between the treatment and control groups at the 95 percent confidence level or higher

Notes: This table shows per-year two-stage least squares estimates of charter school impacts for various subgroups, by urban and nonurban schools. Standard errors are clustered by student and school by grade and by year. Individual study results are estimated with the microdata. Since data security restrictions preclude combining the microdata from these two studies, the combined estimates are the inverse variance weighted average.

4. IN URBAN AREAS, THE EFFECT OF CHARTER SCHOOL ATTENDANCE WAS LARGER FOR BLACK STUDENTS, HISPANIC STUDENTS, AND PREVIOUSLY POOR-PERFORMING STUDENTS.

Combining data from the Massachusetts (8) and national charter school studies (9), urban charter schools had positive effects across most groups of students, with the exception of white students, for whom the effect of charter school attendance was marginally significant in math but not statistically significant in English language arts. In general, urban charter schools had the most positive effects on students who were less advantaged, including black and Hispanic students, those with low baseline test scores, those receiving subsidized lunch, and English language learners. The effect of urban charter school attendance on test scores was similar for both students who were in special education and those who were not.

Nonurban charter schools had negative effects across most groups of students, including female students, white students, and students without low baseline test scores, not receiving subsidized lunch, not in special education, or not English language learners. The effects of nonurban charter schools were marginally positive for black or Hispanic students and those receiving subsidized lunch.

Figure 2 shows the estimated impact of a year of charter school attendance across different subgroups of students, using data from the Massachusetts and national charter school studies.

RESULTS

5. SOME NO EXCUSES CHARTER SCHOOLS IN URBAN AREAS HAVE BEEN SHOWN TO HAVE POSITIVE IMPACTS ON LONGER-TERM OUTCOMES.

While most studies of charter schools have looked at the impact of charter school attendance on test scores, a smaller number of studies have examined longer-term impacts, including improving college preparation and enrollment, reducing teen pregnancy, and reducing incarceration among male students.

In New York City (16), students offered admission to the Harlem Children’s Zone Promise Academy middle school had higher rates of enrollment in any college immediately following high school graduation and higher rates of immediate enrollment in a four-year college. Pregnancy rates were 10.1 percentage points lower among lottery winners, relative to a pregnancy rate of 17 percent among those who lost the charter school lottery. For males, incarceration rates dropped from 4 percent among those who lost the lottery to zero among lottery winners.

In Boston (5), attendance at a charter high school increased pass rates on the state’s graduation exam, SAT scores, advanced placement exam test taking, and advanced placement exam scores. While charter school attendance did not have a statistically significant effect on college enrollment rates, it shifted enrollment from two-year to four-year colleges. Among students who researchers could follow for at least 18 months after high school graduation, charter school attendance reduced immediate enrollment in a two-year college by 11 percentage points (relative to an average enrollment rate of 19 percent among students who lost charter school lotteries) and increased immediate enrollment in a four-year college by 18 percentage points (relative to an average enrollment rate of 41 percent among students who lost charter school lotteries).

Because most lottery-based charter school studies are relatively recent, to date there is no lottery-based evidence of the effect of charter schools on other longer-term outcomes, such as adult employment or earnings.



WAVEBREAK MEDIA | SHUTTERSTOCK.COM

6. A STUDY IN TEXAS THAT RANDOMLY ASSIGNED TRADITIONAL PUBLIC SCHOOLS TO IMPLEMENT A SET OF PRACTICES ASSOCIATED WITH THE MOST EFFECTIVE CHARTER SCHOOLS FOUND THAT THESE PRACTICES INCREASED MATH ACHIEVEMENT.

In Houston, Texas (18), researchers tested whether the five school practice characteristics that were associated with the most effective charter schools in New York City—increased learning time, more effective teachers and principals, more student-level differentiation through tutoring or computerized instruction, frequent use of data to alter the scope and sequence of classroom instruction, and a culture of high expectations—could increase student achievement in traditional public schools. Researchers randomly assigned sixteen low-performing traditional public elementary schools to either a treatment group, which implemented the set of school practices, or a control group. On average, attending a treatment school increased test scores by 0.112 standard deviations per year in math but did not have a statistically significant impact on test scores in reading.

The five school practices were also introduced in three elementary schools, five middle schools, and four high schools with the lowest performance in Houston. These schools were not subject to random assignment because the school board wanted to ensure that they received the treatment. The comparison made using this non-randomly chosen set of schools found that middle and high schools that implemented the school practices had test scores that were 0.146 standard deviations per year higher in math, on average. The change in reading test scores was not statistically significant.

REFERENCES

- Abdulkadiroglu, Atila, Joshua D. Angrist, Susan M. Dynarski, Thomas J. Kane, and Parag A. Pathak. 2011. "Accountability and Flexibility in Public Schools: Evidence from Boston's Charters and Pilots." *The Quarterly Journal of Economics* 126(2): 699-748. doi: <http://dx.doi.org/10.1093/qje/qjr017>
- Abdulkadiroglu, Atila, Joshua D. Angrist, Peter D. Hull, and Parag A. Pathak. 2016. "Charters without Lotteries: Testing Takeovers in New Orleans and Boston." *American Economic Review* 106(7): 1878-1920. <http://dx.doi.org/10.1257/aer.20150479>
- Angrist, Joshua D., Sarah R. Cohodes, Susan M. Dynarski, Parag A. Pathak, and Christopher R. Walters. 2016. "Stand and Deliver: Effects of Boston's Charter High Schools on College Preparation, Entry, and Choice." *Journal of Labor Economics* 34(2). <http://dx.doi.org/10.1086/683665>
- Angrist, Joshua D., Susan M. Dynarski, Thomas J. Kane, Parag A. Pathak, and Christopher R. Walters. 2012. "Who Benefits from KIPP?" *Journal of Policy Analysis and Management* 31(4): 837-860. doi: <http://dx.doi.org/10.1002/pam.21647>
- Angrist, Joshua D., Parag A. Pathak, and Christopher R. Walters. "Explaining Charter School Effectiveness." NBER working Paper #17332, August 2011.
- . 2013. "Explaining Charter School Effectiveness." *American Economic Journal: Applied Economics* 5(4): 1-27. doi: <http://dx.doi.org/10.1257/app.5.4.1>
- Chabrier, Julia, Sarah Cohodes, and Philip Oreopoulos. "What Can We Learn from Charter School Lotteries?" NBER Working Paper #22390, July 2016.
- . 2016. "What Can We Learn from Charter School Lotteries?" *Journal of Economic Perspectives* 30(3): 57-84. <http://dx.doi.org/10.1257/jep.30.3.57>
- Clark Tuttle, Christina, Brian Gill, Philip Gleason, Virginia Knechtel, Ira Nichols-Barrer, and Alexandra Resch. 2013. "KIPP Middle Schools: Impacts on Achievement and Other Outcomes." Washington, DC: Mathematica Policy Research. <http://www.mathematica-mpr.com/our-publications-and-findings/publications/kipp-middle-schools-impacts-on-achievement-and-other-outcomes-full-report>
- Clark Tuttle, Christina, Philip Gleason, Virginia Knechtel, Ira Nichols-Barrer, Kevin Booker, Gregory Chojnacki, Thomas Coen, and Lisbeth Goble. 2015. "Understanding the Effect of KIPP as It Scales: Volume I, Impacts on Achievement and Other Outcomes." Washington, DC: Mathematica Policy Research. <https://www.mathematica-mpr.com/our-publications-and-findings/publications/understanding-the-effect-of-kipp-as-it-scales-volume-i-impacts-on-achievement-and-other-outcomes>
- Cohodes, Sarah R., Elizabeth M. Setren, Christopher R. Walters, Joshua D. Angrist, and Parag A. Pathak. 2013. "Charter School Demand and Effectiveness: A Boston Update." The Boston Foundation and New Schools Venture Fund. <http://seii.mit.edu/research/study/charter-school-demand-and-effectiveness-a-boston-update/>
- Cook, Philip J., Kenneth Dodge, George Farkas, Roland G. Fryer, Jr., Jonathan Guryan, Jens Ludwig, Susan Mayer, Harold Pollack, and Laurence Steinberg. "Not Too Late: Improving Academic Outcomes for Disadvantaged Youth." Institute for Policy Research Northwestern University Working Paper WP-15-01, February 2015.
- Curto, Vilsa E. and Roland G. Fryer, Jr. 2014. "The Potential of Urban Boarding Schools for the Poor: Evidence from SEED." *Journal of Labor Economics* 32(1): 65-93. doi: <http://dx.doi.org/10.1086/671798>
- Dobbie, Will and Roland G. Fryer, Jr. 2011. "Are High-Quality Schools Enough to Increase Achievement Among the Poor? Evidence from the Harlem Children's Zone." *American Economic Journal: Applied Economics* 3(3): 158-187. doi: <http://dx.doi.org/10.1257/app.3.3.158>
- . 2013. "Getting Beneath the Veil of Effective Schools: Evidence from New York City." *American Economic Journal: Applied Economics* 5(4): 28-60. doi: <http://dx.doi.org/10.1257/app.5.4.28>
- . 2015. "The Medium-Term Impacts of High-Achieving Charter Schools." *Journal of Political Economy* 123(5): 985-1037. doi: <http://dx.doi.org/10.1086/682718>
- Fryer, Roland G. 2014. "Injecting Charter School Best Practices into Traditional Public Schools: Evidence from Field Experiments." *The Quarterly Journal of Economics* 129(3): 1355-1407. doi: <http://dx.doi.org/10.1093/qje/qju011>
- Furgeson, Joshua, Brian Gill, Joshua Haimson, Alexandra Killewald, Moira McCullough, Ira Nichols-Barrer, Bing-ru The, Natalya Verbitsky-Savitz, Melissa Bowen, Allison Demeritt, Paul Hill, and Robin Lake. 2012. "Charter School Management Organizations: Diverse Strategies and Diverse Student Impacts." Princeton, NJ: Mathematica Policy Research. <http://www.mathematica-mpr.com/our-publications-and-findings/publications/charterschool-management-organizations-diverse-strategies-and-diverse-student-impacts>
- Gleason, Philip, Melissa Clark, Christina Clark Tuttle, and Emily Dwoyer. 2010. *The Evaluation of Charter School Impacts: Final Report* (NCEE 2010-4029). Washington, DC: US Department of Education, National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences. <http://ies.ed.gov/ncee/pubs/20104029/>
- Hastings, Justine S., Christopher A. Neilson, and Seth D. Zimmerman. "The Effect of School Choice on Intrinsic Motivation and Academic Outcomes." NBER Working Paper #18324, August 2012.
- Hoxby, Caroline M., Sonali Murarka, and Jenny Kang. 2009. "How New York City's Charter Schools Affect Achievement." Cambridge, MA: The New York City Charter Schools Evaluation Project. <http://users.nber.org/~schools/charterschoolseval/>
- Hoxby, Caroline M. and Jonah E. Rockoff. 2004. "The Impact of Charter Schools on Student Achievement." <https://www0.gsb.columbia.edu/faculty/jrockoff/hoxbyrockoffcharters.pdf>
- Lee, Yung Soo, Nancy Morrow-Howell, Melissa Jonson-Reid, and Stacey McCrary. 2010. "The Effect of the Experience Corps Program on Student Reading Outcomes." *Education and Urban Society* 44(1): 97-118. doi: <http://dx.doi.org/10.1177/0013124510381262>
- Markovitz, Carrie E., Marc W. Hernandez, Eric C. Hedberg, and Benjamin Silberglitt. 2014. "Impact Evaluation of the Minnesota Reading Corps K-3 Program." Chicago, IL: NORC at the University of Chicago. <http://www.nationalservice.gov/documents/research-and-reports/2014/impact-evaluation-minnesota-reading-corps-k-3-program>
- May, Henry, Heather Goldsworthy, Michael Armijo, Abigail Gray, Philip Sirinides, Toscha J. Blalock, Helen Anderson-Clark, Andrew J. Schiera, Horatio Blackman, Jessica Gillespie, and Cecile Sam. 2014. "Evaluation of the i3 Scale-up of Reading Recovery: Year Two Report, 2012-2013." Philadelphia, PA: Consortium for Policy Research in Education. doi: <http://dx.doi.org/10.12698/cpre.2014.RR79>

POLICY LESSONS

Charter schools in disadvantaged urban neighborhoods can generate large test score gains for students admitted via lottery, as well as corresponding improvements in longer-term outcomes. In general, urban charter schools have had the most positive effects on students who are least advantaged, including black and Hispanic students, those with low baseline test scores, those receiving subsidized lunch, and English language learners. Studies of charter schools in Boston (5) and New York City (16) found that charter school attendance also increased immediate enrollment in four-year colleges and reduced teen pregnancy and male incarceration. In contrast, nonurban charter schools have had no or even negative effects on test scores, on average.

Urban charter schools adopting a No Excuses approach have been associated with the largest gains in academic performance. Most of the urban charter schools included in the lottery-based studies reviewed here have adopted a No Excuses approach characterized by strict and clear disciplinary policies, mandated intensive tutoring, longer instruction times, frequent teacher feedback, and high expectations for students. In combined data from Massachusetts (8), New York City (15), and national (9) studies, this set of No Excuses practices was positively associated with charter school effectiveness.

It is hard to disentangle the influence of locating a charter school in a disadvantaged urban neighborhood from the impact of adopting No Excuses practices. One reason for the large gains associated with No Excuses schools is that these schools tend to locate in urban areas where the traditional public school alternatives are very poor performing. However, the policy conclusion that charter schools located in low-performing districts that adopt a No Excuses approach have produced positive impacts remains clear.

Evidence suggests that implementing mandated, intensive tutoring is one potential strategy for improving urban schools. Using data from Massachusetts (8), intensive tutoring was the only school practice characteristic significantly associated with charter school effectiveness in math, once urban status and the performance of fallback traditional public schools is taken into account. In Houston, researchers implemented five school practices associated with the most effective charter schools in low-performing traditional public schools (18); however, due to funding constraints, intensive tutoring was only implemented in math and only in one grade per school. Among the middle and high schools in the treatment group, students in grades that received tutoring had math test score gains of 0.608 standard deviations per year, compared to 0.208 standard deviations for students in grades that did not receive tutoring. In Chicago, a randomized evaluation found large gains in math test scores from implementing intensive tutoring in 12 traditional public high schools.⁹

⁹ Cook, Philip J., Kenneth Dodge, George Farkas, Roland G. Fryer, Jr., Jonathan Guryan, Jens Ludwig, Susan Mayer, Harold Pollack, and Laurence Steinberg. "Not Too Late: Improving Academic Outcomes for Disadvantaged Youth." Institute for Policy Research Northwestern University Working Paper WP-15-01, February 2015.

Bulletin Author: Julia Chabrier | **Editor:** Steven Ryan | **Designer:** Elizabeth Bond

Suggested Citation: J-PAL Policy Bulletin. 2017. "What Can We Learn from Charter School Lotteries in the United States?" Cambridge, MA: Abdul Latif Jameel Poverty Action Lab.

The Abdul Latif Jameel Poverty Action Lab (J-PAL) is a network of affiliated professors around the world who are united by their use of randomized evaluations to answer questions critical to poverty alleviation. J-PAL's mission is to reduce poverty by ensuring that policy is informed by scientific evidence.

povertyactionlab.org

