Social Programs That Work Review

Evidence Summary for the Promise Academy Charter Middle School in the Harlem Children's Zone

HIGHLIGHTS:

- **PROGRAM:** A charter middle school in New York City, serving mainly low-income, minority students.
- **EVALUATION METHODS:** A well-conducted randomized controlled trial (RCT), based on the lottery used to determine which students were offered admission, with a sample of 599 rising 6th graders.
- **KEY FINDINGS:** In long-term follow-up, students offered admission to Promise Academy (i) were significantly more likely to graduate high school on time than the control group (71% versus 58%), and (ii) scored significantly higher than the control group on New York Regents exams in math, English, and social studies (the effects equate to about 1-2 additional years of learning between 6th and 12th grade).
- **OTHER:** A study limitation is that it was conducted in a single site – one school in New York City. Replication of these findings in a second trial, in another setting, would be desirable to confirm the initial results and establish that they generalize to other settings where the program might be implemented.

I. Evidence rating: NEAR TOP TIER

The standard for Near Top Tier is:

Programs shown to meet almost all elements of the Top Tier standard, and which only need one additional step to qualify. This category primarily includes programs that meet all elements of the Top Tier standard in a single study site, but need a replication RCT to confirm the initial findings and establish that they generalize to other sites. This is best viewed as tentative evidence that the program would produce important effects if implemented faithfully in settings and populations similar to those in the original study.

II. Description of the Program:

The Promise Academy is a charter middle school, serving predominantly low-income, minority students from grades six through eight. The school opened in 2004 as one of the Harlem Children's Zone programs to improve communities and schools in a 97-block area of Harlem, in New York City. The school provides an extended school day and year, with coordinated after-school tutoring and additional Saturday classes for children struggling in math or English language arts. As a result, students spend 50-100% more time in school per year than students in traditional public schools in New York City, depending on how far behind they are academically. The school emphasizes recruiting and retaining high quality teachers, who are incentivized and evaluated based on their success in raising students' test scores. Students are consistently reminded of the importance of hard work in achieving success, and are given rewards for achievement, such as money or trips. The school also provides them with free medical, dental, and mental health services; and provides their parents with meals, bus fare, and other benefits. Most students who attend Promise Academy middle school subsequently enroll in a Promise Academy high school. The school spent approximately $22,300 per pupil per school year, compared to an average of approximately $18,700 per pupil in New York City middle schools (in 2017 dollars).[1]

Promise Academy's website is linked here.

III. Evidence of Effectiveness:

This summary of the evidence is based on a systematic search of the literature, and correspondence with leading researchers, to identify all well-conducted randomized controlled trials of the Promise Academy charter middle school. Our search identified one such trial, as follows.

Overview of Study Design: Randomized controlled trial, based on the 2005 and 2006 lotteries used to determine which students were offered admission to the school.

599 students were randomly assigned via lottery to (i) a group of "lottery winners" offered admission to the Promise Academy in 6th grade; or (ii) a control group of "lottery losers" not offered admission. 84% of sample members were African American, 15% were Hispanic, and 81% were eligible for free or reduced-price lunch. Prior to the study (i.e., 5th grade), they scored about a half-year behind the average New York City student in both math and English language arts achievement.[2] 63% of the lottery winners accepted the offer of admission and enrolled in the Promise Academy.

[1] Both figures are direct service expenditures per pupil, which is a comprehensive measure of expenditures for services provided directly to students during the school year. The source for the Promise Academy estimate is Dobbie et al. 2010. The source for the city average is the New York City Department of Education's School Based Expenditure Reports.

[2] Specifically, they scored 0.25-0.27 standard deviations below the average New York City student in math and English language arts, which equates to approximately a half-year of learning in fifth grade for the typical U.S. student (see Bloom, Hill, Black, and Lipsey 2008).

Effects three years after random assignment – i.e., end of 8th grade:

These are the Academy's effects on all outcomes that the study measured at the end of 8th grade, and apply to all lottery winners, including those who enrolled in the Promise Academy and those who did not.[3] The effects shown are statistically significant at the 0.01 level.

- In math: Lottery winners scored higher than lottery losers on the New York state test by 0.45 standard deviations, which equates to about 1½ grade levels.[4]
- In English language arts: Lottery winners scored higher than lottery losers by 0.16 standard deviations, which equates to about two-thirds of a grade level.[4]
- Absences: Lottery winners were absent 3.9 fewer days than lottery losers during the first six months of 8th grade (the time period when absence data are collected by the city).
- Percent entering 8th grade "on-time" for their age: There was no difference between lottery winners and losers on this measure.

Effects up to nine years after random assignment – i.e., during high school and 1-2 years after expected graduation:

These are the Academy's effects on the main outcomes measured at long-term follow-up as reported in Dobbie and Fryer 2015, excluding those that may not be reliable due to sample attrition problems.[5] The effects apply to all lottery winners, including those who enrolled in the Promise Academy and those who did not. All effects shown are statistically significant at the 0.01 level unless stated otherwise.

- High school graduation:
  - Lottery winners were substantially more likely than lottery losers to graduate from high school in four years (i.e. on-time) – 71% of lottery winners graduated on-time vs. 58% of lottery losers.

[3] The effects on math and reading scores shown here are reported in Dobbie and Fryer 2015. The effects on absences and entering 8th grade on time are reported in Dobbie and Fryer 2011.

[4] Specifically, the average annual achievement gain for U.S. students between the end of seventh grade and the end of eighth grade on seven nationally normed tests is 0.32 standard deviations in math and 0.26 in reading (see Bloom, Hill, Black, and Lipsey 2008, referenced at the end of this summary). The difference in achievement between lottery winners and losers, shown above, is about 1.4 times this amount in math, and 0.62 times this amount in reading.

[5] The study reported on other long-term outcomes measured via surveys or tests, including pregnancy, incarceration, criminal behavior, substance use and other risky behaviors, physical and mental health, and researcher-administered tests of math and reading skills. The study found positive effects on a number of these outcomes; however, these findings suffered from high sample attrition rates that differed between the lottery winners and losers (data were obtained for 79% of lottery winners and 63% of lottery losers). The study also reported effects on additional New York State Regents exams (beyond those we show here) that suffered from high and differential attrition. Such attrition may have undermined the equivalence of the lottery winners and lottery losers and led to inaccurate results. For that reason, we do not summarize these results here.

- Lottery winners were slightly more likely than lottery losers to graduate from high school within 5-6 years, but this difference was not statistically significant – 77% vs. 74%.[6]

- Scores on the New York State Regents exams (required for high school graduation):
  - Lottery winners scored higher in Integrated Algebra than lottery losers by 0.48 standard deviations, which equates to approximately two additional years of learning between 6th and 12th grade.[7]
  - Lottery winners scored higher in Comprehensive English than lottery losers by 0.38 standard deviations, which equates to approximately 1½ additional years of learning between 6th and 12th grade.[7]
  - Lottery winners scored higher in Global History & Geography than lottery losers by 0.23 standard deviations, which equates to approximately one additional year of learning between 6th and 12th grade.[7] This effect was statistically significant at the 0.05 level but not the 0.01 level.

- College enrollment within 1-2 years of scheduled high school graduation:
  - Lottery winners were moderately more likely than lottery losers to enroll in college, but this difference was not statistically significant and so is best viewed as suggestive (48% of lottery winners enrolled vs. 42% of lottery losers).
  - Lottery winners were substantially more likely than lottery losers to enroll in a *four-year* college (34% of lottery winners enrolled vs. 25% of lottery losers). This effect was statistically significant at the 0.05 level but not the 0.01 level.

Effects on the subsample of lottery winners who accepted the admission offer and enrolled in the Academy:

Thirty-seven percent of lottery winners never enrolled in the Promise Academy. The effects on the subsample of lottery winners who actually enrolled were approximately 59% larger than the effects summarized above for the full sample of lottery winners.[8]

[6] This outcome measure is high school graduation (not including GED receipt) within six years for the sample members who entered 6th grade in 2005 and within five years for those who entered 6th grade in 2006.

[7] Specifically, the average annual achievement gain for U.S. students between the beginning of 6th grade and the end of 12th grade on seven nationally normed tests is 0.24 standard deviations in math, 0.21 standard deviations in reading, and 0.20 in social studies (see Bloom, Hill, Black, and Lipsey 2008). The difference in achievement between lottery winners and losers, shown above, is about 2.0 times this amount in math, 1.8 times this amount in reading, and 1.2 times this amount in social studies.

[8] This is known as the "treatment-on-treated" effect, and was calculated using Bloom's "no-show adjustment." This adjustment relies on the reasonably-safe assumption that winning the lottery had no effect on educational outcomes for the 37% of lottery winner who never enrolled in the Promise Academy – i.e., the no-shows. More information on the no-show adjustment can be found in Bloom 1984 and Orr 1999, referenced at the end of this summary.

Discussion of Study Quality:

- The study had a long-term follow-up – up to nine years after random assignment.
- For most study outcomes summarized above, the study had low to moderate attrition: depending on the outcome, data were obtained for 70-100% of the sample, and follow-up rates were generally similar between lottery winners and losers for each outcome. For the high school Regents test scores summarized above, the study had higher sample attrition: depending on the test, data were obtained for only 60-75% of the sample. However, the follow-up rates on these tests were similar for lottery winners and lottery losers, providing some reassurance that attrition was not related to group assignment and thus may not have undermined the equivalence of the two groups.
- At the start of the study, the lottery winners and lottery losers were highly similar in their observable characteristics (e.g., demographics, prior academic achievement).
- The study evaluated the Promise Academy as it normally operates in Harlem Children's Zone in New York City, thus providing evidence of its effectiveness under real-world implementation conditions. We note, however, that the Academy only opened in 2004; thus the effects shown above apply to its early years of operation.
- The study appropriately measured outcomes for all students who won the lottery, regardless of whether or how long they actually attended the Promise Academy (i.e., the study used an "intention-to-treat" analysis).
- The study measured the outcomes summarized above using administrative data from the New York City Department of Education (for 8th grade and high school outcomes) and the National Student Clearinghouse (for college outcomes).
- The study's main limitation: It was conducted at a single site – i.e., one school in New York City. Replication of the above findings in a second randomized controlled trial, conducted in another setting by the same or other researchers, would be desirable to (i) rule out the possibility that the findings occurred by chance; and (ii) confirm that this program is effective in other settings where it would normally be implemented.

IV. References:

Dobbie, Will and Roland G. Fryer, Jr., "The Medium-Term Impacts of High Achieving Charter Schools," *Journal of Political Economy*, vol. 123, no. 5, 2015, pp. 985-1037.

Dobbie, Will and Roland G. Fryer, Jr., "Are High Quality Schools Enough to Increase Achievement Among the Poor? Evidence from the Harlem Children's Zone," *American Economic Journal: Applied Economics*, vol. 3, no. 3, July 2011, pp. 158-187.

Bloom, Howard S., Carolyn Hill, Alison Rebeck Black, and Mark Lipsey, "Performance Trajectories and Performance Gaps as Achievement Effect-Size Benchmarks for Educational Interventions," MDRC Working Paper on Research Methodology, October 2008.

Orr, Larry L., *Social Experimentation: Evaluating Public Programs with Experimental Methods*, Sage Publications, Inc., 1999, pp. 62-64.

Bloom, Howard S., "Accounting for No-Shows in Experimental Evaluation Designs," *Evaluation Review*, vol. 8, April 1984, pp. 225-246.