What Works in Education?
Lessons from Charter Schools

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December 1, 2017
The black-white achievement gap

Percent Proficient, 8th Grade Math, NAEP 2011

Percent Proficient, 8th Grade Reading, NAEP 2011
The black-white achievement gap and later life outcomes

Black-White Differences in Economic Outcomes (NLSY79) Before and After Controlling for 8th Grade Test Scores

- Wages: Raw B/W Gap 28%, After controlling for AFQT 28%
- Unemployment: Raw B/W Gap 190%, After controlling for AFQT 90%
- Have Savings: Raw B/W Gap 283%, After controlling for AFQT 87%
- Less than 10K in savings: Raw B/W Gap 250%, After controlling for AFQT 76%
- Negative Net Worth: Raw B/W Gap 87%, After controlling for AFQT 42%
- Do not own home: Raw B/W Gap 234%, After controlling for AFQT 114%
- Any College: Raw B/W Gap 137%, After controlling for AFQT 141%
- Public Assistance: Raw B/W Gap 33%
Past interventions vs. the achievement gap
Conventional solutions also ineffective
Why charter schools?

Charter schools are an invaluable laboratory for two reasons:

1. Charter admissions are determined by random lottery
   ▶ Comparison of lottery winners and lottery losers provides an unbiased estimate of school effectiveness

2. Tremendous variation in charter school practices and policies
   ▶ Example 1: “No excuses” schools use frequent testing, a long school year/day, and a relentless focus on state test scores
   ▶ Example 2: Other schools largely ignore state tests, focusing on the “whole student” and students’ emotional well-being
Finding 1: The most effective charter schools can close the black-white achievement gap without additional investments

Finding 2: Five school policies – teacher feedback, data-based instruction, tutoring, instructional time, and high expectations – can explain nearly half of variation in charter effectiveness

Finding 3: The best practices from charter schools can increase achievement within traditional public schools

Finding 4: The most effective charter schools can also impact later life outcomes like college going, teen crime, and teen pregnancy
The Harlem Children’s Zone

- The Harlem Children’s Zone combines extremely large investments in school and community programs
  - Cohesive network of services from birth to college
  - Started as 24-block area in central Harlem, expanded to a 64-block area in 2004 and a 97-block area in 2007
  - Over $40 million spent per year. Plans to create national network of Zones

- Can any combination of the school and community programs together close the black-white achievement gap?
Research plan

- We begin with a comparison of lottery winners and losers to estimate the impact of the HCZ charter school on test scores
  - Estimates include the impact of any community programs that are bundled with the charter school
  - Provides a starting point to understand whether any combination of investments can close the b-w gap
- We will then ask whether the school programs, community programs, or both are critical in closing the b-w test score gap
Mean Test Scores by Treatment Status
ELA Results

2005 Winners 2005 Losers Avg White Avg Black

ELA Score
Grade
Mean Test Scores by Treatment Status
ELA Results
Neighborhood Effects

Math

Out of Zone: 0.25
In Zone: 0.2

ELA

Out of Zone: 0.05
In Zone: 0.02
Follow-up work on other charter schools

Recent Results from Charter Schools

Studies of High-Performing Schools

Math
Reading

*Oversubscribed schools only
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Getting beneath the veil of effective schools

- What differentiates effective and ineffective charters?
- Collect data from 39 charter schools in New York City
  - Principal Interviews
  - Teacher Interviews
  - Student Interviews
  - Lesson Plans
  - Classroom Video Recordings
- Correlate these measures with estimates of school effectiveness
- Goal is to identify inputs that we can test in experiment
Correlation Between School Inputs and Effectives: Math
Correlation Between School Inputs and Effectives: ELA
Followup work on other charter schools

- A research team from MIT conducted a similar exercise for both urban and suburban charter schools in Massachusetts.
- For urban charter schools, the same five school practices are important in explaining school effectiveness.
- Urban charters are also more effective in general, likely because other urban schools are low quality.
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Can we use charter school policies in traditional public schools?

- What would happened if we injected charter strategies into traditional public schools?
- Houston implemented a similar set of five policies in their lowest performing traditional schools
- Fryer (2014) estimates the impact of both program using both experimental and nonexperimental approaches
The Five Tenets

**More Time in School**
- Extended day, week, and school years are all integral components of successful school models. In the case of Harlem Children’s Zone’s Promise Academy, students have nearly doubled the amount of time on task compared to students in NYC public schools.

**Small Group Tutoring and Differentiation**
- In top performing schools, classroom instruction is supplemented by individualized tutoring, both after school and during the regular school day.

**Human Capital Management**
- Successful charters reward teachers for performance and hold them accountable if they are not adding value.

**Data-Driven Instruction**
- In the top charter schools, students are assessed frequently, and then, in small groups, re-taught the skills they have not yet mastered.

**Culture and Expectations**
- In successful schools, students buy into the school’s mission and into the importance of their education in improving their lives.
Panel A displays the percentage of teachers that leave treatment schools (voluntarily and involuntarily) and TEA comparison schools (schools chosen by Texas Education Agency as comparable to treatment schools), either to teach at another HISD school or to leave the district, across years. Data on departure rates was taken from Houston employee files.

Panels B and C compare the teacher value-added (TVA) of teachers that stayed in treatment schools to that of teachers who left treatment schools in the summer before the start of treatment (summer of 2011 for elementary schools and summer of 2010 for secondary schools). All value-added measures were standardized to have a mean of zero and a standard deviation of one within a given subject and year.

Panel D displays the statistically significant differences in likelihood that treatment schools versus comparison schools support changes in school “culture.” This data was collected by the implementation team during site visits to all treatment and comparison schools in April and May of 2012.

Figure I: Evidence of Treatment

A: Teacher Departure Rates

B: TVA Elementary Schools

C: TVA Secondary Schools

D: Classroom Practices and Outcomes
Treatment Effects In Context

- Math
- Reading

- Average Charter (National)
- Average NYC Charter
- Chicago Turnaround
- Harlem Children's Zone (MS)
- Average KIPP (MS)
- Houston MS/HS
- Houston ES
- Houston MS/HS with Tutoring
- Houston ES with Tutoring

The graph shows Treatment Effects in Math and Reading for various educational settings, including average charter schools (National), NYC charter schools, Chicago turnaround, Harlem Children's Zone, Average KIPP, Houston middle/high school, Houston ES, Houston ES with tutoring, and Houston MS/HS with tutoring.
Return on Investment

- Apollo MS/HS
- Apollo ES
- "No Excuses" Charter School
- Early Childhood Education
- Reduced Class Size

S&P 500 1950-2016
Followup work on other charter schools

- Charter takeovers of traditional schools are highly effective
  - Charter schools often take over failing traditional public schools
  - Estimates from Boston and New Orleans suggest that charters can replicate their success in these failing schools

- “Principal consultants” generate positive results at lower cost
  - Provide training and advice to a random subset of principals
  - Positive results for principals who completed the entire training
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Do high-achieving charters also impact later life outcomes?

- Clear that high-achieving schools can increase test scores
- Not clear if test score gains translate into other gains
  - Strong correlation between test scores and later outcomes, schools likely teaching real academic skills, may also be teaching non-cog skills
  - Test prep, cheating, etc. may create illusion of gains
- We collected survey data from HCZ lottery applicants to provide some evidence on this issue
The Impact of Attending the Promise Academy
The Impact of Attending the Promise Academy on Health

![Bar chart showing impact on nutrition index, mental health, physical health index, and health behavior index. The nutrition index shows a positive impact, while the other indices show minimal to no impact.]
Final thoughts

- Researchers have learned a lot in the past 5-10 years
  - Schools alone can close the achievement gap
  - Effective schools share a common set of best practices
  - Best practices are scalable to traditional public schools
  - Effective schools can also impact later life outcomes

- Next steps
  - Work with school leaders to develop and test policies that can be implemented at scale without researchers