

Are High Quality Schools Enough to Close the Achievement Gap?

Evidence from Social Experiment in
Harlem

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Program Evaluation
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The program: Harlem Children's Zone (HCZ)

- place: 97-block area in central Harlem, New York(2007)
- time: begin as 24-block area in 1970s
- combines community investments with reform- minded charter schools
- rich laboratory to understand what drives students' achievements: schools or communities
- Charter vs Public Schools
 - both financed by public money
 - freed from some of the rules, regulations, and statutes
 - exchange for some type of accountability for producing certain results
 - when demand exceeds supply they use lottery

HCZ Charter School investments

- cover ~1300 children
- began in fall 2004 with elementary and middle schools
- extended school day and school year
- recruitment and retention of high quality teachers
- use high stake test scores, value added measure to evaluate teachers
- free medical, dental and mental-health services
- efforts to change the culture of achievement

Data

- Sources
 - HCZ
 - enrollment, lottery results
 - administrative data (NYC Dep. Of Education)
 - student level data, e.g. race, gender, reduced price lunch status, matriculation, course grades, normalized test scores
- 2 cohorts: 2005 and 2006
- Merging data (85% of success)
- Sample size $N_{\text{winners}}=178$ and $N_{\text{losers}}=290$

Method (ITT)

- Intent-to-treat effect
- The causal effect of being offered a place in HCZ charter school

$$\text{Outcome}_i = \alpha + \beta X_i + \mu Z_i + \varepsilon_i$$

Outcome: Math and English Language Art (ELA) Test Scores

X_i : vector of controls: gender, race, free lunch indicator and pre-lottery test score

Z_i : dummy: 1 for winners; 0 otherwise

- Schools select students by a lottery when demand exceeds supply → random assignment

Method (ToT)

- Treatment on treated effect (ToT)
- estimated effect of actually being enrolled in charter school
 - 2SLS IV estimation

$$\begin{aligned} \text{HCZ}_i &= \alpha_1 + \beta_1' X_i + \mu_1 Z_i + \varepsilon_{1i} \\ \text{Outcome}_i &= \alpha_2 + \beta_2' X_i + \mu_2 \widehat{\text{HCZ}}_i + \varepsilon_{2i} \end{aligned}$$

Z_i : dummy: 1 for winners; 0 otherwise

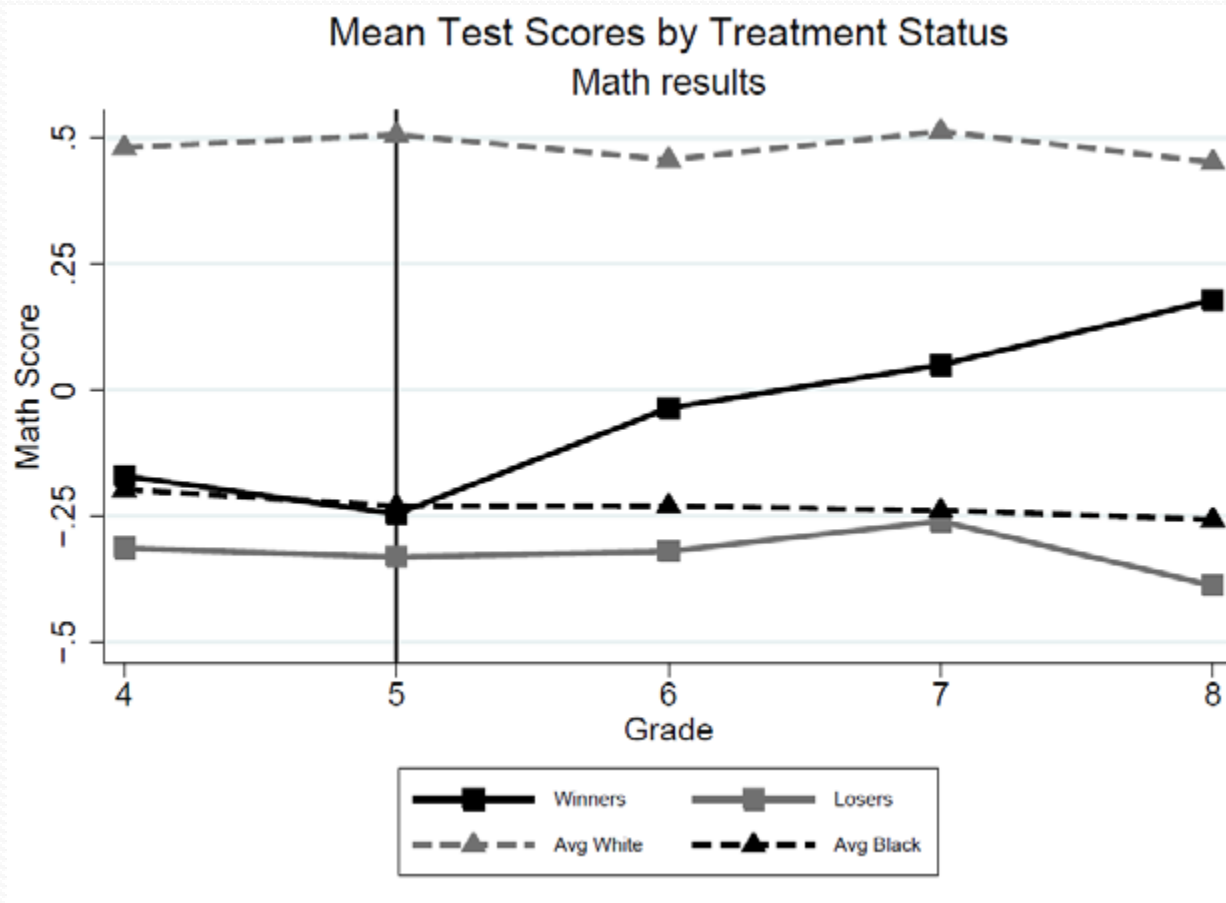
X_i : vector of controls: gender, race, free lunch indicator and pre-lottery test score

HCZ_i : enrollment in charter school

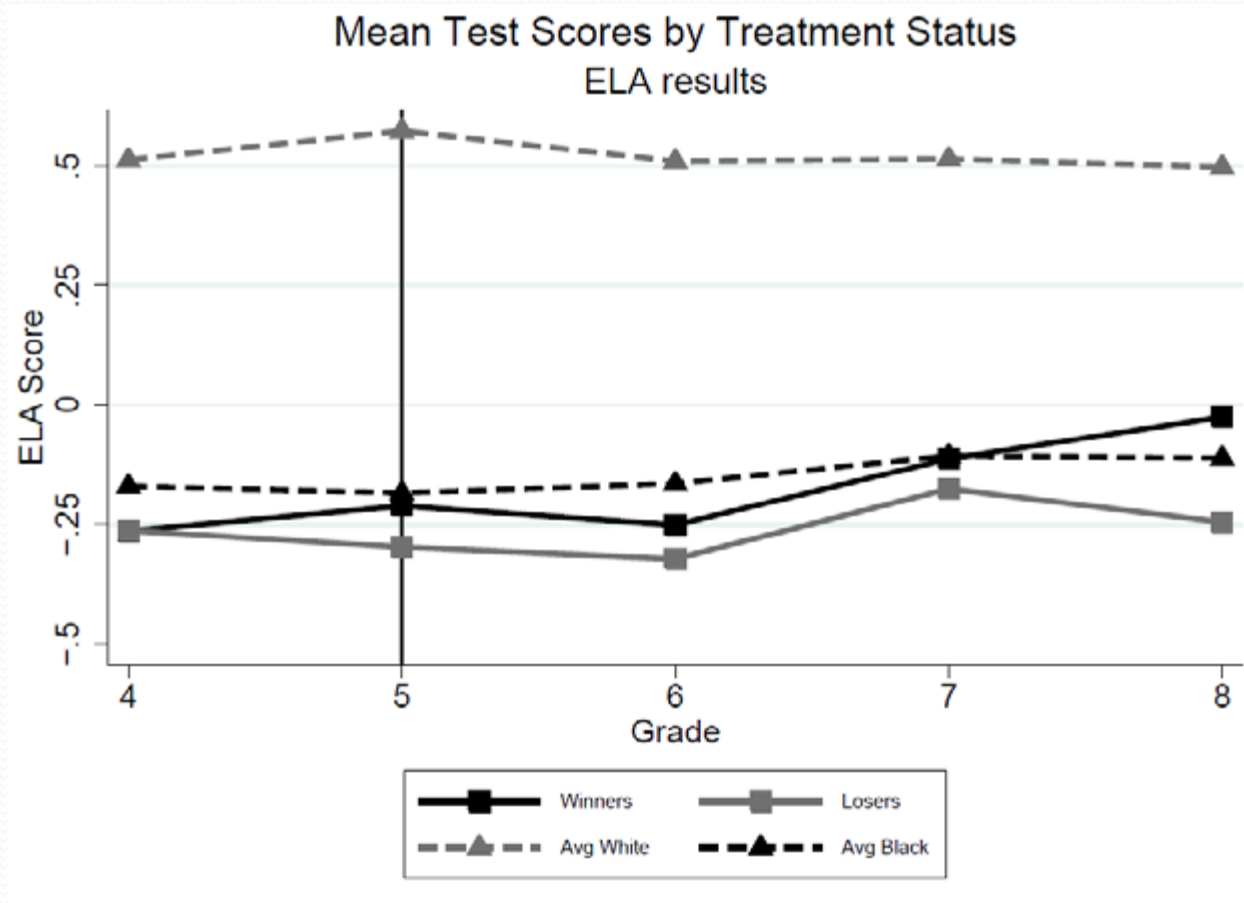
Results: ITT and ToT

Dependent Variable	Pooled Sample	
	ITT	TOT
6 th Grade Math Score	0.249*** (0.053)	0.348*** (0.073)
7 th Grade Math Score	0.275*** (0.054)	0.394*** (0.076)
8 th Grade Math Score	0.546*** (0.076)	0.765*** (0.100)
6 th Grade ELA Score	0.033 (0.053)	0.047 (0.075)
7 th Grade ELA Score	0.029 (0.050)	0.041 (0.072)
8 th Grade ELA Score	0.190*** (0.058)	0.266*** (0.081)

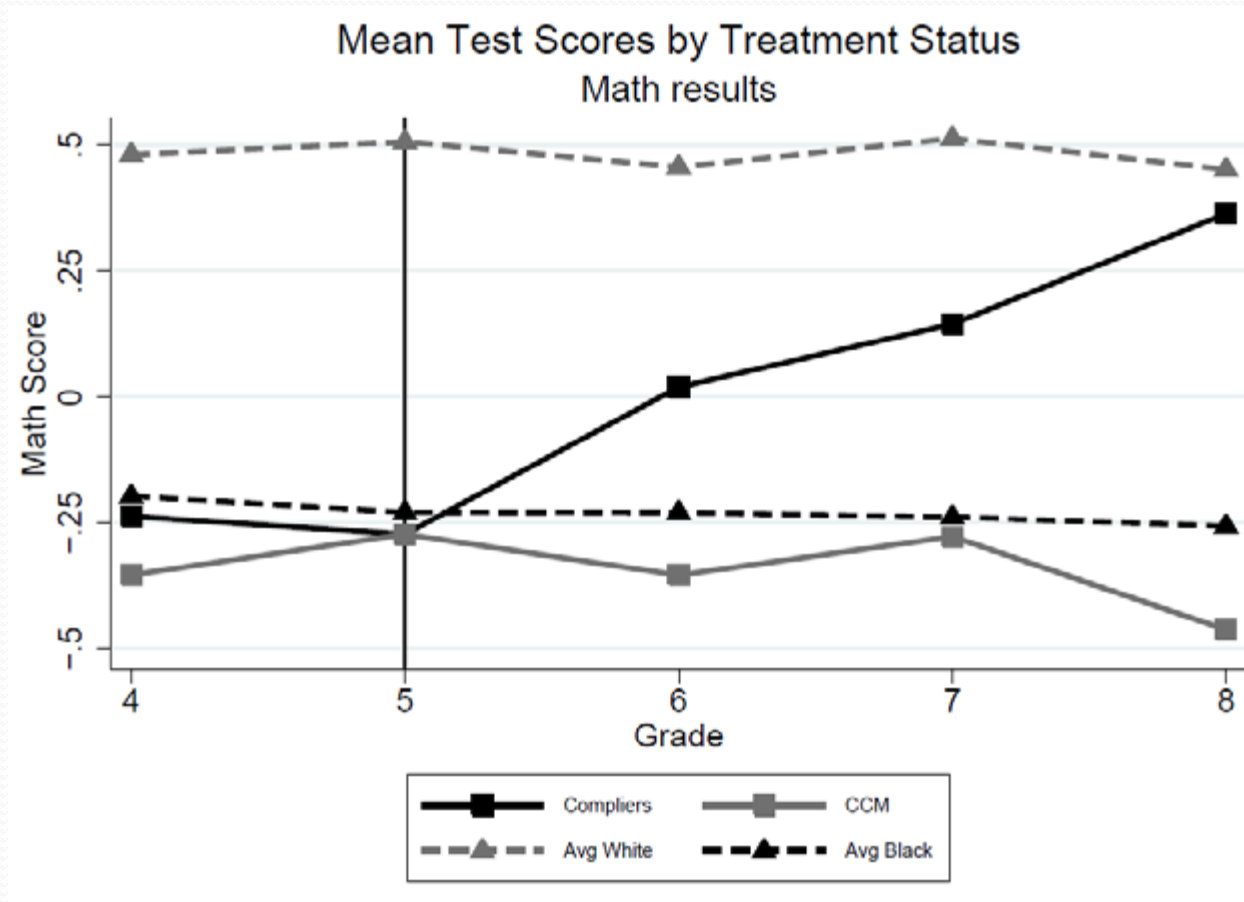
Math results (ITT)



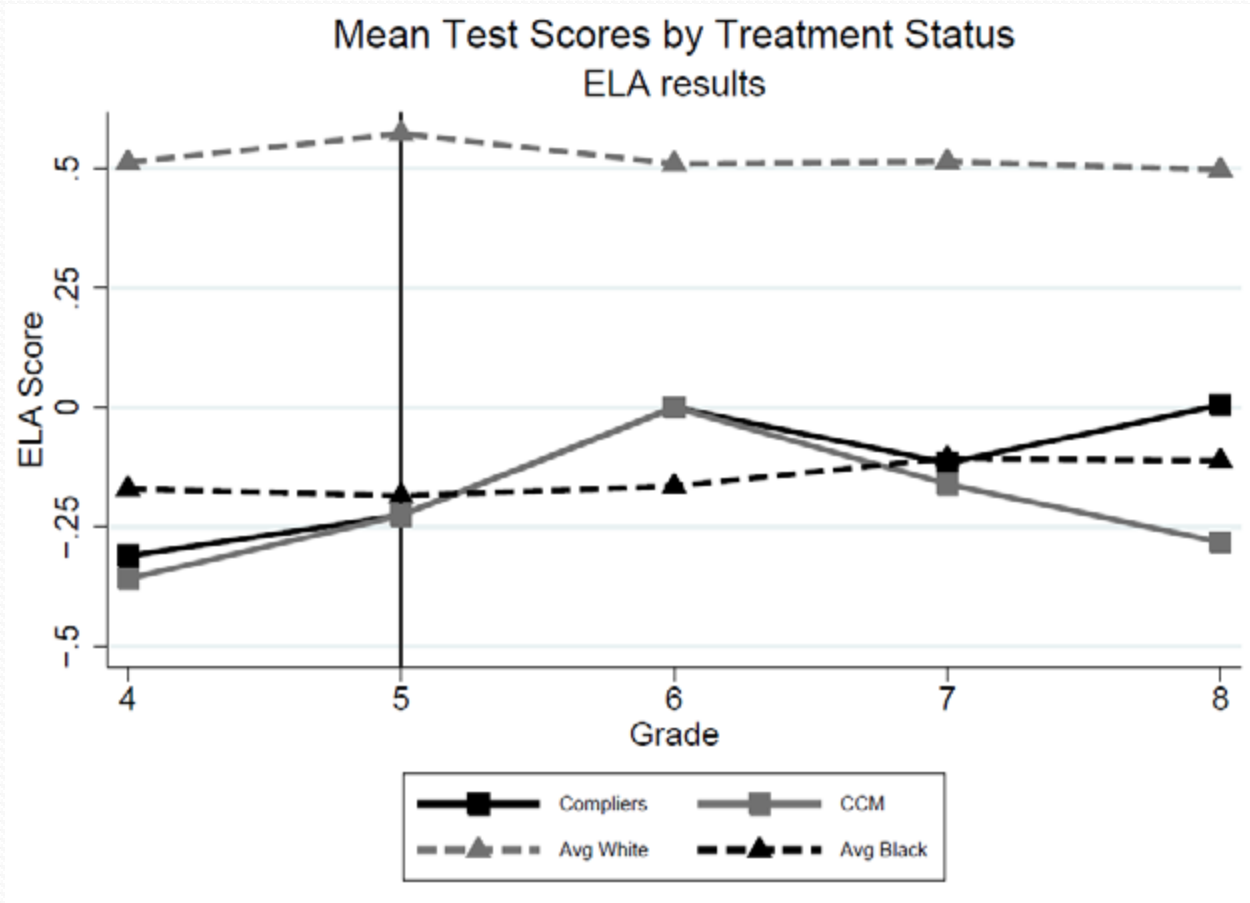
ELA results (ITT)



Math results (ToT)



ELA results (ToT)



Conclusions

- HCZ is successful in increasing the achievement
- Effects enough to close the black-white achievement gap
- Students of all ability levels obtain same result from attending HCZ charter school
- Cost-benefit analysis
 - Cost: ~\$19000 per pupil (median ~\$16000, 95th ~\$34000)
 - Benefits:
 - Higher earnings
 - Smaller probability of committing crime
 - Better health

Our opinion

- Do we believe the results?
 - Lottery
 - Results are robust across model specifications, identification strategies and data subsamples
- Potential problems
 - Attrition
 - Teaching to the test
- Community vs School investments
 - Empirical evidences (siblings, student outside the zone)
- External validity



Thank You for your attention!

Questions?