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CENTER FOR RESEARCH ON EDUCATION OUTCOMES

Charter School Performance in Massachusetts

6/10/2013

Who We Are

- Non-partisan data based research organization located at Stanford University
- Student level data from 29 states, ~ 85% of charter students in the country
- National perspective on the charter sector

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Overview

- Acknowledgements
  - MA Department of Education
  - Walton Family Foundation
- Study Approach
- Findings
- Summary & Implications

Study Approach

What Did We Ask?

- How do charter schools compare to TPS in their math and reading growth?
- What charter school characteristics are associated with higher growth?
- Do charter schools have more success than TPS working with certain student subgroups?

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What Years Are We Looking At?

Test Administration	Spring 2006	Spring 2007	Spring 2008	Spring 2009	Spring 2010	Spring 2011
Academic Year Covered by Test	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
Grades*	3-10	3-10	3-10	3-10	3-10	3-10
Growth Period		2007	2008	2009	2010	2011

*Excluding Grade 9.

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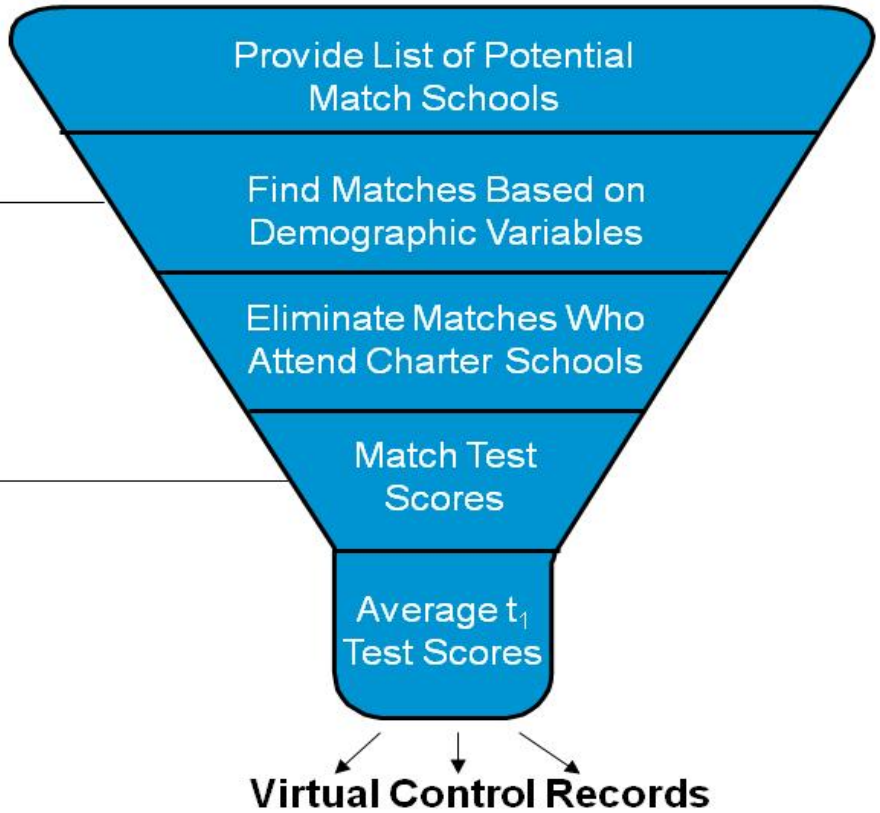
Virtual Control Record

Charter School Student

MATCHING VARIABLES:
- ✓ Race/ethnicity
- ✓ Gender
- ✓ English proficiency
- ✓ Lunch status
- ✓ Special education status
- ✓ Grade level

MATCHING VARIABLE:
- ✓ Test scores from t_0

Feeder School(s) Students



MA Match rate is 83%

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Are These Results Valid?

- Internal Validity

  - Mathematica found no significant difference between VCR and “lottery” methods on the same students (2012).

  - Recent meta-analysis found VCR results consistent with other quasi-experimental methods (Betts et. al).

  - What Works Clearinghouse gives VCR the highest rating possible for quasi-experimental methods (IES, 2010).

- External Validity

  - Greater than 80% of charter students included in VCR.

  - Fixed Effects only includes “switchers” (~40%).

  - Lotteries include only over-subscribed charter schools.

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Results

- Massachusetts Student Findings
- Massachusetts School Findings
- Boston Findings

MA Student-level Findings

Rosetta Stone

Growth (in standard deviations)	Gain (in months of learning)
0.00	0.0
0.05	1.8
0.10	3.6
0.15	5.4
0.20	7.2
0.25	9
0.30	10.8
0.35	12.6

(Hanushek et al, 2006)

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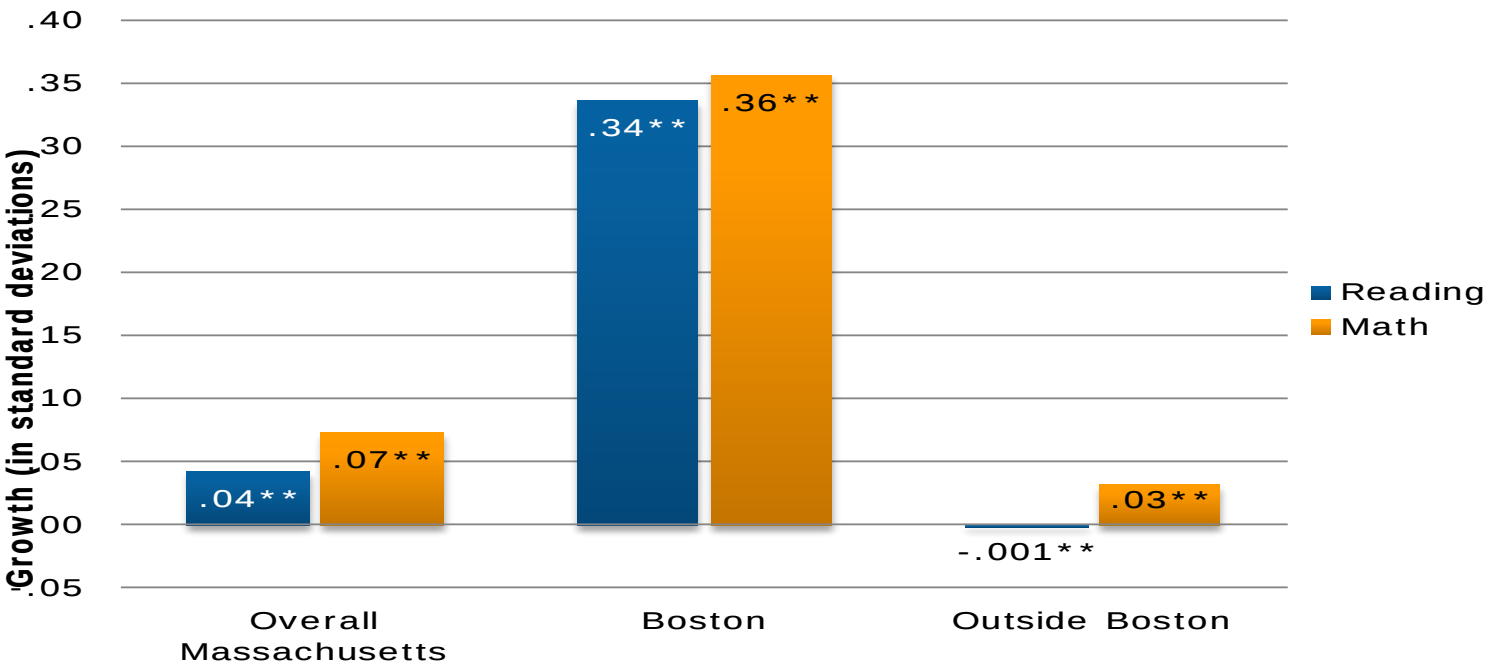
Impact of Charter Schools



*** Significant at p ≤ 0.05** **** Significant at p ≤ 0.01**

Charter students outperform TPS students in reading (1.5 months) and math (2.5 months). Results are especially strong in Boston charters.

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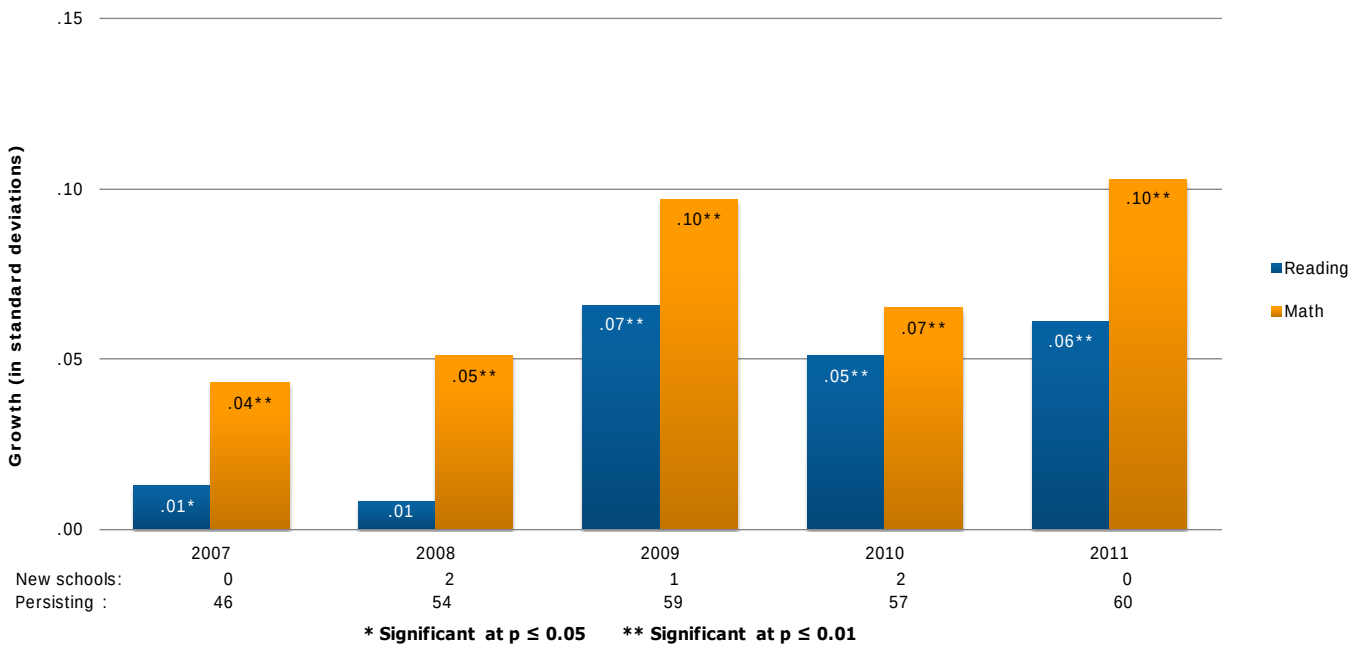
Charter School Impact by Year

2007-08
Math: 1.5 months
Read: ~1 week

2010-11
Math: 3.6 months
Read: 2.1 months



Note: Count of new schools is from student test data.

Charter students outperform TPS in both subjects in all years, with the exception of reading growth in 2008. On a general positive trend.

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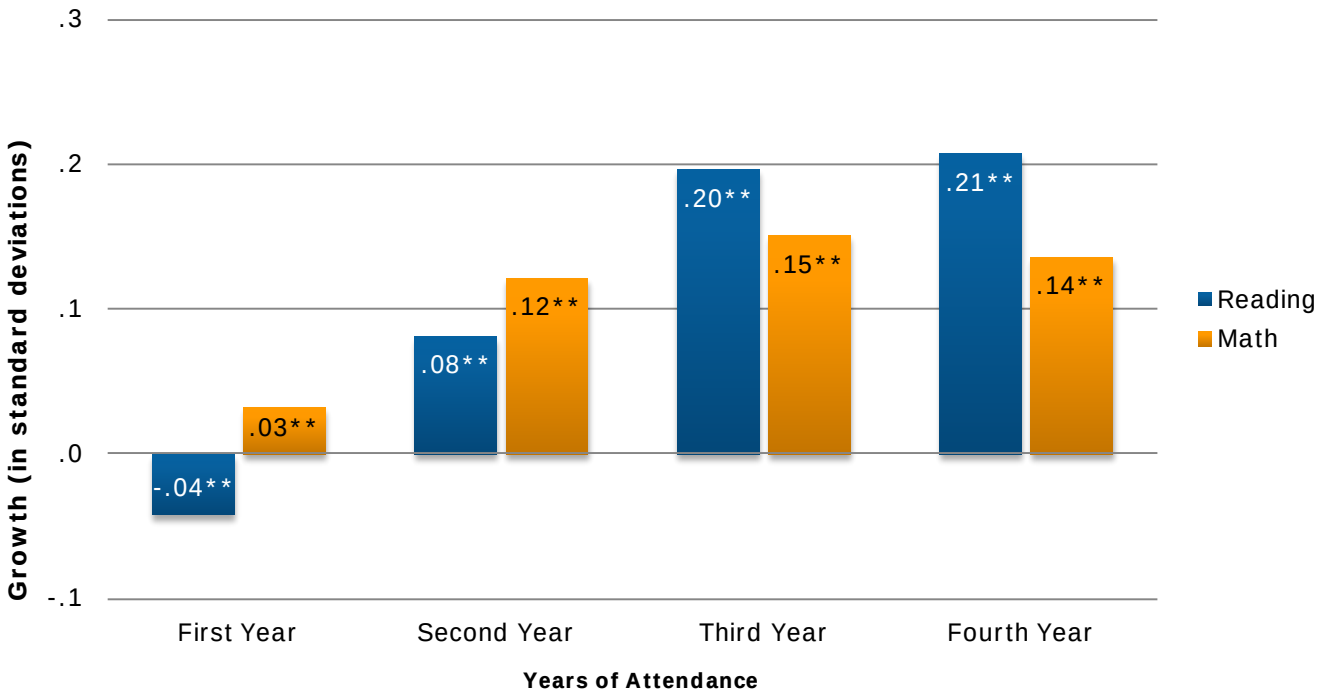
Charter School Impact by Students' Years of Enrollment

First Year
Math: 1.1 months
Read: - 1.5 months

Four or More Years
Math: 5 months
Read: 7.5 months



*** Significant at p ≤ 0.05 ** Significant at p ≤ 0.01**

Charter students have mixed learning gains compared to their TPS counterparts in the first year and significantly higher gains in future years.

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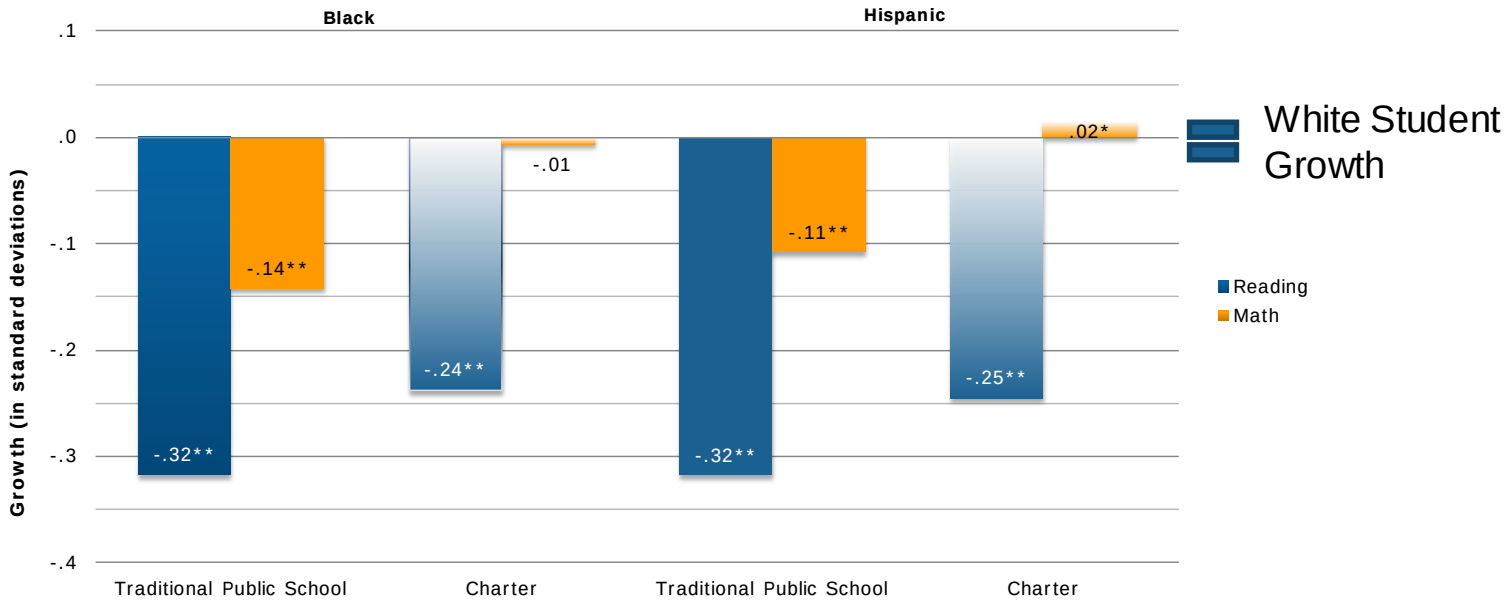
Charter School Impact by Race/Ethnicity



*** Significant at p ≤ 0.05 ** Significant at p ≤ 0.01**

Black and Hispanic students have larger learning gains at charter schools than at TPS. Charters have closed the growth gap in math.

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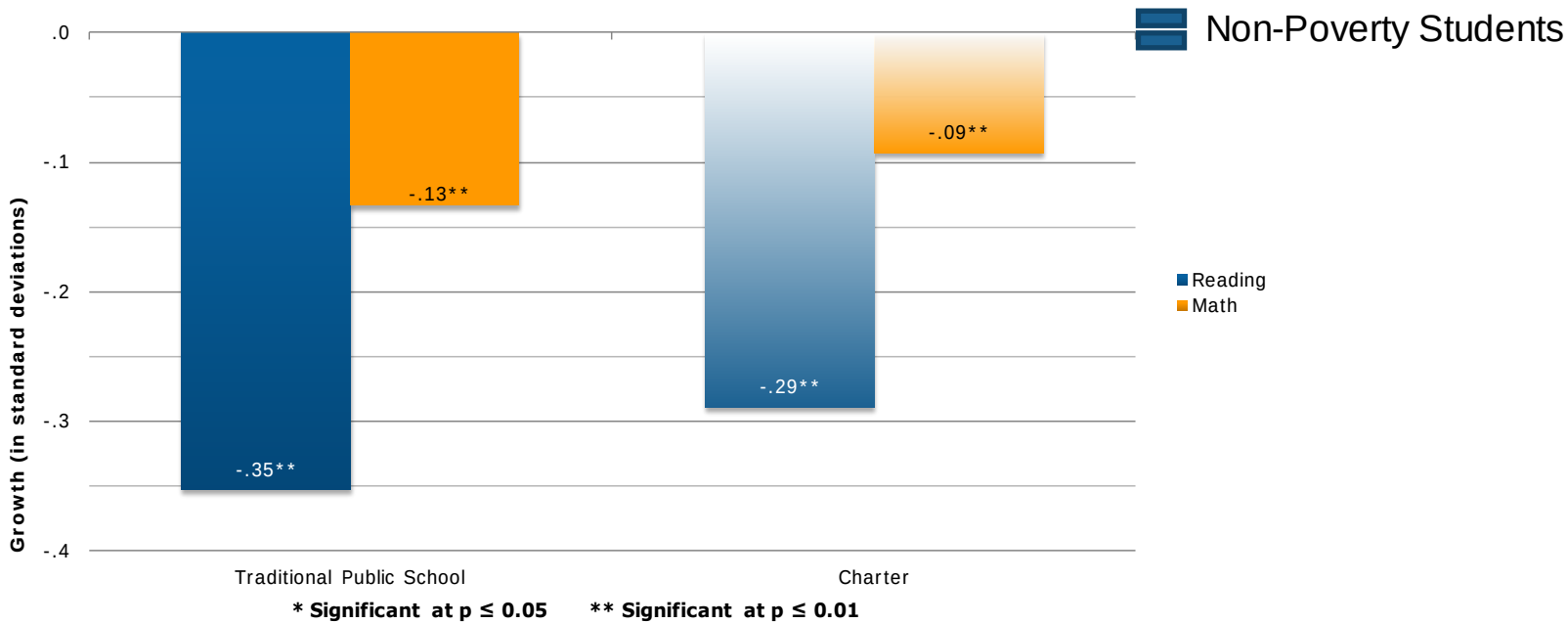
Charter School Impact with Students in Poverty



Students in poverty have an advantage in charter schools in both math and reading. The difference is statistically significant.

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School-level Findings

Distribution of Charter School Impacts

	Significantly Worse		Not Significant		Significantly Better	
Subject	Number	Percent	Number	Percent	Number	Percent
Reading	7	13.0%	23	42.6%	24	44.4%
Math	9	16.7%	15	27.8%	30	55.6%

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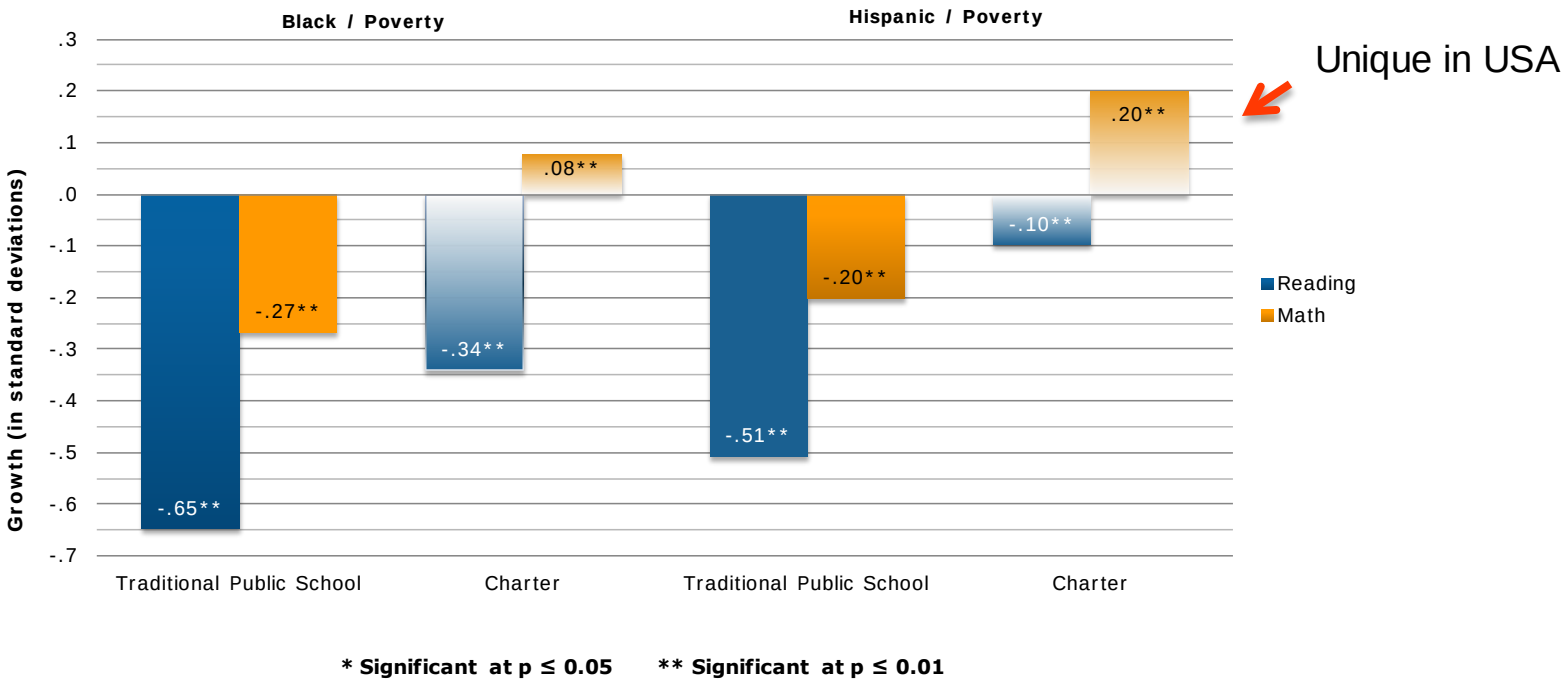
Boston Findings

Boston Charter School Impact by Race/Ethnicity and Poverty



Black and Hispanic students in poverty have higher learning gains at Boston charter schools than at TPS. Closing the achievement gap in math.

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Boston Distribution of Charter School Impacts

	Significantly Worse		Not Significant		Significantly Better	
Subject	Number	Percent	Number	Percent	Number	Percent
Reading	0	0.0%	2	16.7%	10	83.3%
Math	0	0.0%	2	16.7%	10	83.3%

First charter sector in country CREDO has analyzed with no charters worse than their local TPS options.

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Are These Effects Real?

- Similar Results to Previous Analyses
  Kane et al (2009) & Angrist et al (2010/2011)

- Percentage of Students Above State Average – 4 or more years in sector

Year	Read - CH	Read - TPS	Math - CH	Math - TPS
2007	44%	40%	53%	31%
2008	60%	44%	64%	34%
2009	66%	44%	74%	33%
2010	78%	46%	84%	34%
2011	81%	44%	85%	41%

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Summary & Implications

Summary of Findings Massachusetts

- Typical charter student has greater learning gains than TPS
  - 1.5 months in reading
  - 2.5 months in math

  } PER YEAR
- Better for most subgroups
  - Black, Hispanic, Poverty, SPED better.
  - ELL lagging.
- Some Charters in Danger Zone
  - Math: 20%
  - Reading: 17%

  → VULNERABLE

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Summary of Findings Boston

- Largest Effect Sizes CREDO Has Seen
  - 12.3 months in reading
  - 12.9 months in math

  } PER YEAR
- Better for All Subgroups Analyzed
  - Black, Hispanic, Poverty.
  - Black and Hispanic students in poverty closing achievement gap in math
- Most charter schools outperform their TPS market
  - Reading: 83% Boston vs 44% statewide
  - Math: 83% Boston vs 56% statewide

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Implications

- Boston math and reading effect sizes the largest CREDO has seen, but weaker in rest of MA.
- Boston charter sector is a good candidate to transfer knowledge to the MA and national charter sector.
- Boston has a chance to become the first charter sector to close the achievement gap in math.
- Charter sector in Boston is the current standard by which other sectors should be judged.

Thank You