

# Ohio's Lost Einsteins: The Inequitable Outcomes of Early High Achievers

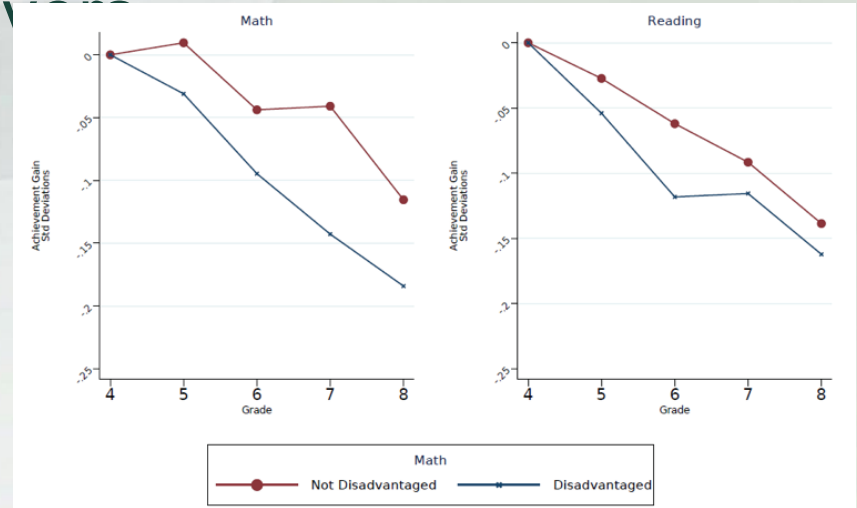
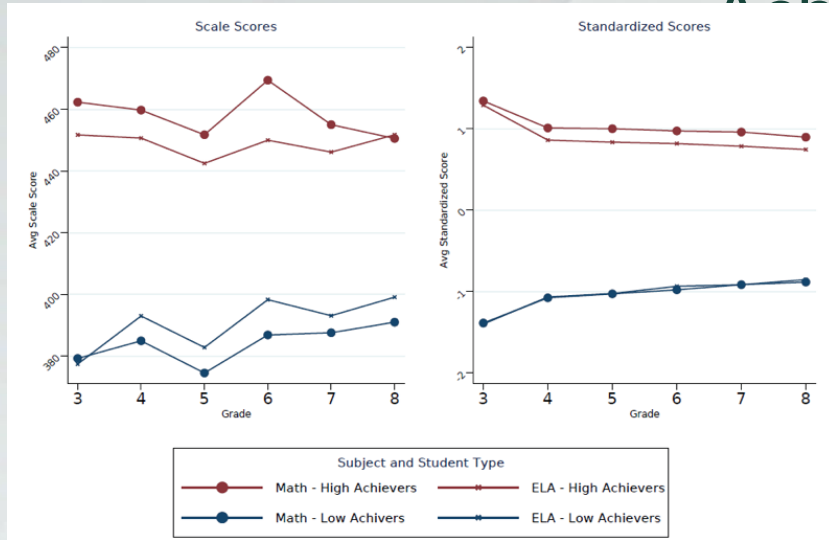
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Prepared for the Thomas B. Fordham Institute

# What This Report Does

- Consider the Ohio context in how early high achievers – those who are in the top 20% of achievers in 3<sup>rd</sup> grade – progress through elementary, high school, and into college.
- Use individual student records for all students in Ohio who attended 3<sup>rd</sup> grade between 2006 and 2012.
- Look at trends in achievement, ACT scores, AP exams, and college enrollment.
- Differences by gender, race, economic disadvantage, and gifted identification.
- Estimate the impact of gifted identification on achievement.

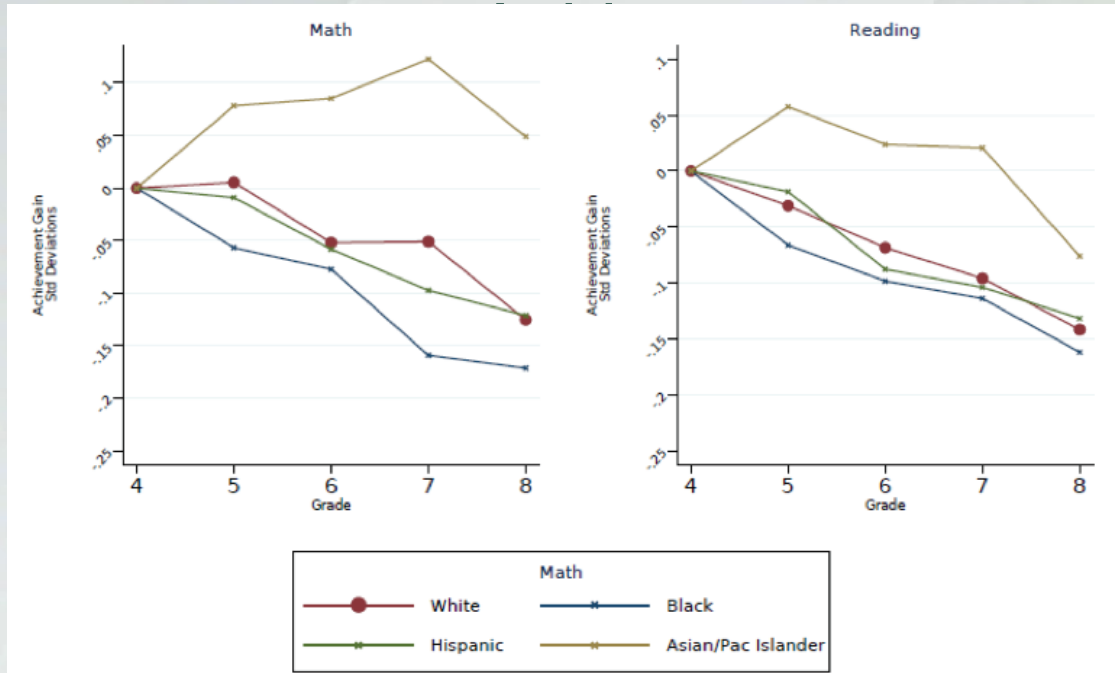
# Key Finding 1: Achievement Trends for High



Achievement for 3<sup>rd</sup> grade low achievers (bottom 20%) increases over time while for high achievers (top 20%), it drops slightly.

Economically disadvantaged (typically free or reduced-price lunch eligible) early high achievers see smaller achievement growth than non-disadvantaged.

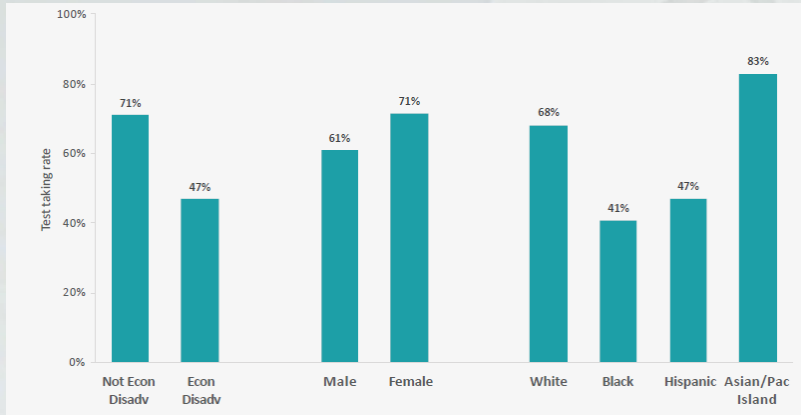
# Key Finding 1: Achievement Trends for High



When we consider racial differences, Black early high achievers fare poorly relative to other races, while Asians show the largest achievement gains.

# Key Finding 2: Racial and Disadvantage Gaps in ACT Exams

## Test Taking



Early high achievers who are economically disadvantaged, male, Black, or Hispanic take ACT test at lower rates.

## ACT Math Exam Scores

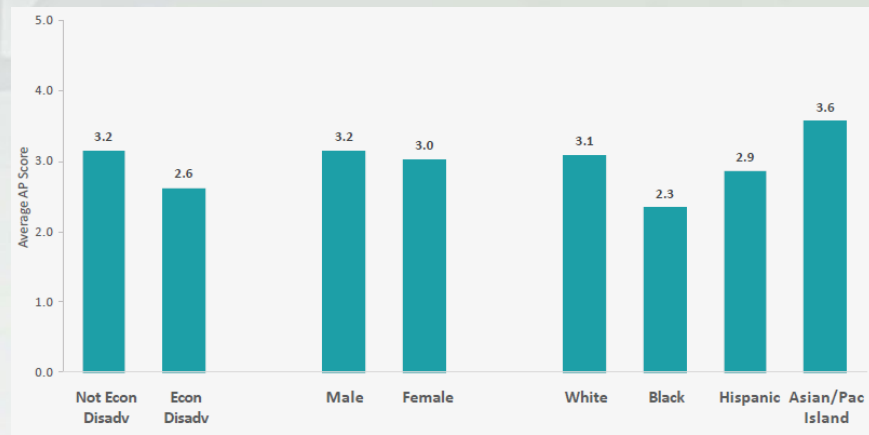
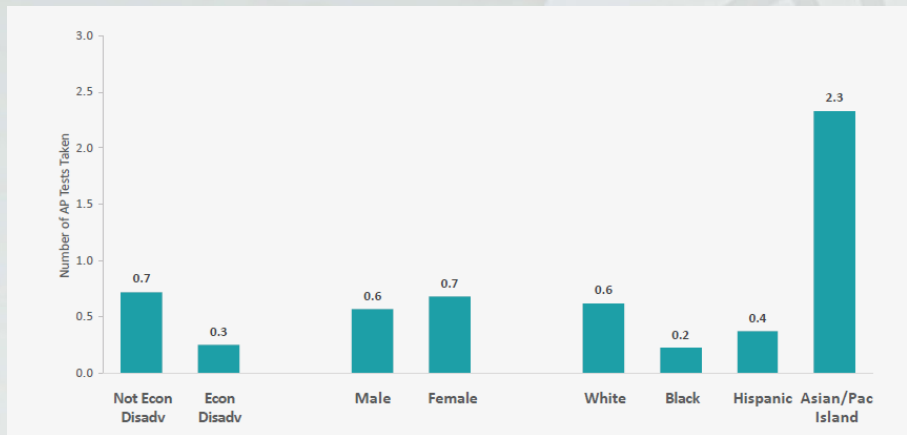


Conditional on taking the exam disadvantaged and minority high achievers also score lower.

# Key Finding 3: Racial, Gender, & Disadvantage Gaps in AP Exams

## Test Taking

## Average AP Exam Scores



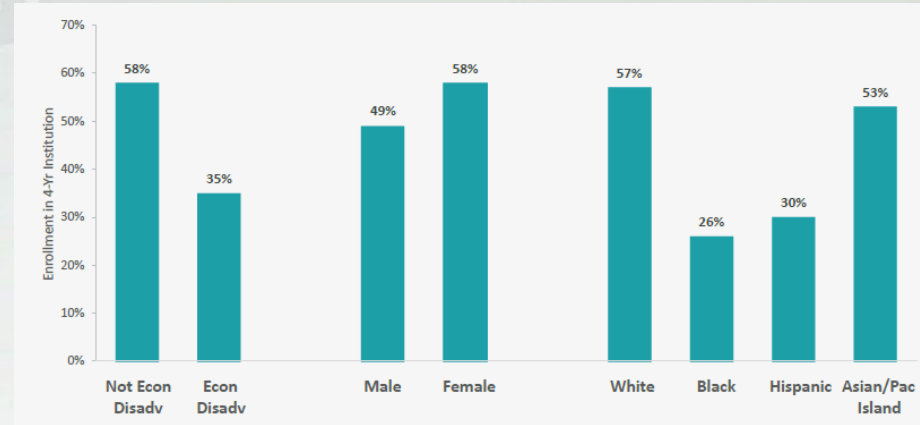
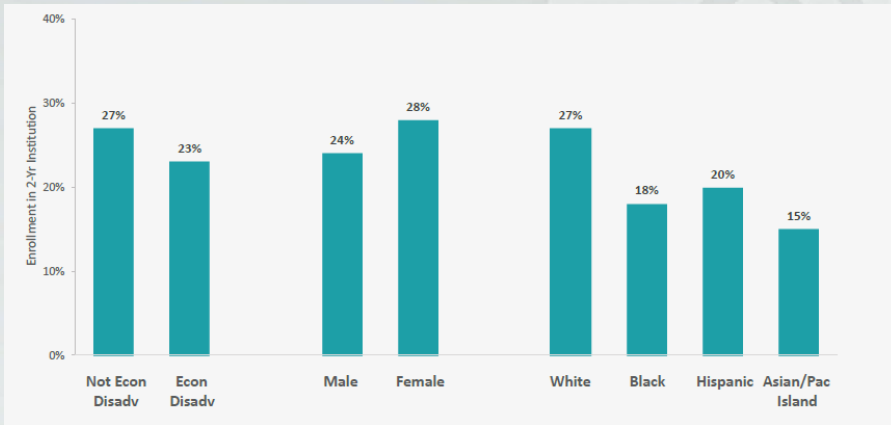
Asian/Pacific Islander early high achievers take AP exams at far higher rates than others; Black students take at lowest rate. Large disadvantage gap as well.

Conditional on taking at least one exam, disadvantaged and minority high achievers also score lower.

# Key Finding 4: Racial, Gender, & Disadvantage Gaps in College Enrollment

## Enrollment in 2-Year Institutions (e.g. community colleges)

## Enrollment in 4-Year Institutions

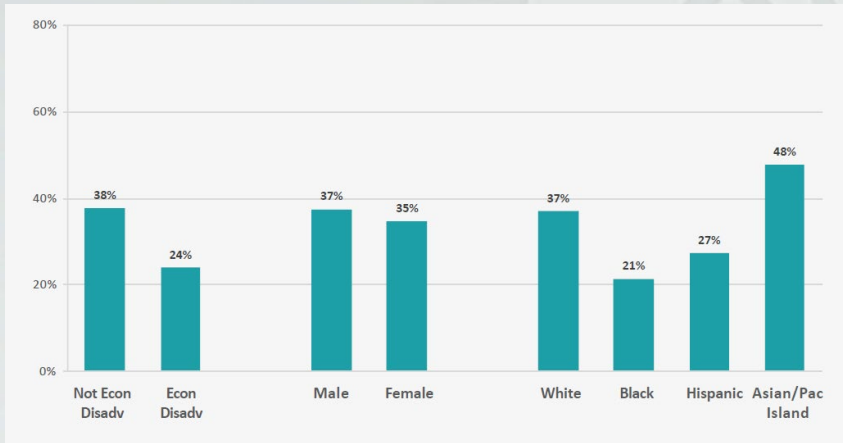


Among early high achievers, enrollment in 2-year schools is highest among White students, women, and non-disadvantaged.

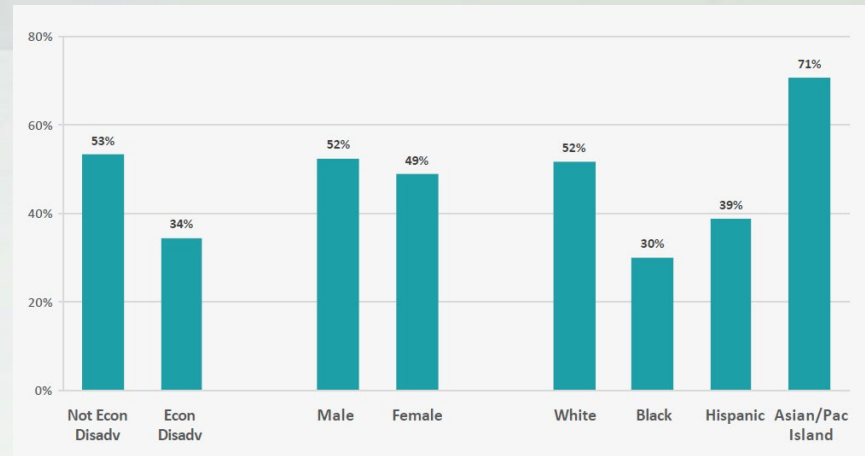
Patterns are similar for 4-year institutions, but gaps are generally wider and Asian/Pac Islander enrollment rates are similar to White rates.

## Key Finding 5: Differences in GT Identification for Early High Achievers by Race and Disadvantage

**3<sup>rd</sup> Grade GT Identification  
(Top 20% of 3<sup>rd</sup> Grade Math Achievers)**



**8<sup>th</sup> Grade GT Identification  
(Top 20% of 3<sup>rd</sup> Grade Math Achievers)**



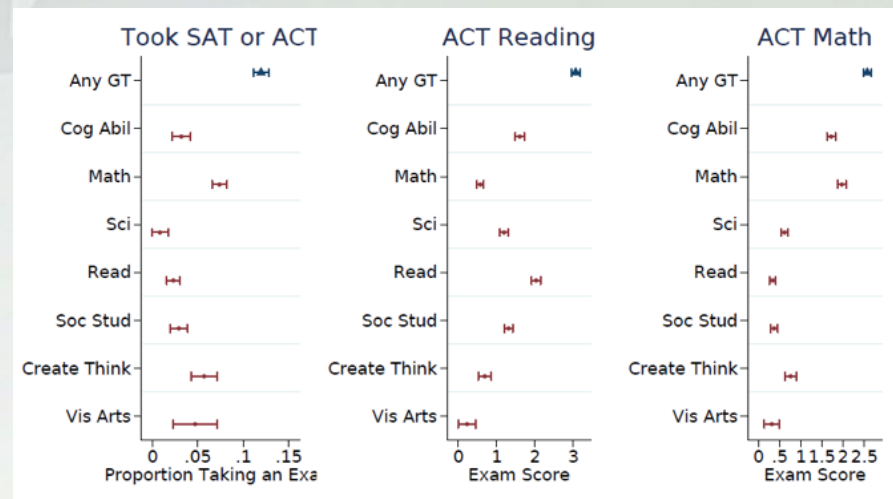
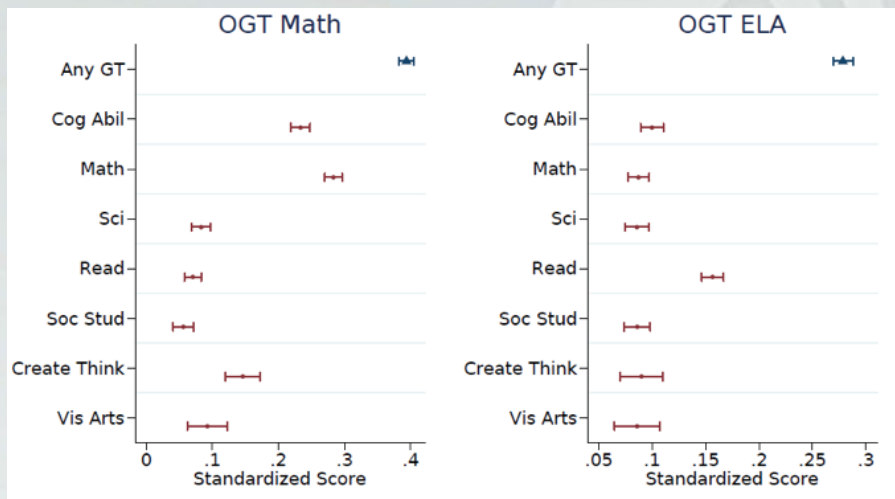
Early high achievers are less likely to be identified as gifted and talented if they are economically disadvantaged. Asian/Pacific Islanders are most likely to be identified as GT than White, Hispanic, and Black students in that order.



# Key Finding 6: GT Identified Early High Achievers Students Perform Better than Other Early High Achievers on a Variety of Long-term Outcomes

## High School Achievement

## ACT/SAT Exams



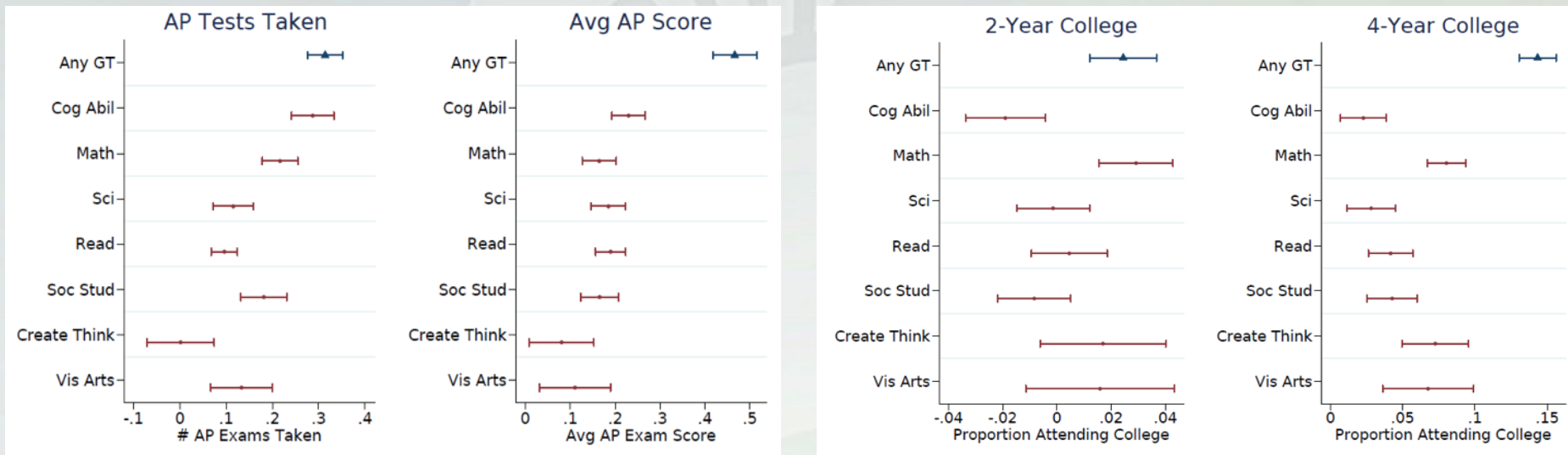
These show estimates of impacts of GT identification restricting to students who score in top 20% on math or reading in 3<sup>rd</sup> grade controlling for 3<sup>rd</sup> grade math and reading scores, demographics, cohort, and elementary school attended.

# Key Finding 6: GT Identified Early High Achievers Students Perform Better than Other Early High Achievers on a Variety of Long-term Outcomes

## AP Exams

## Outcomes

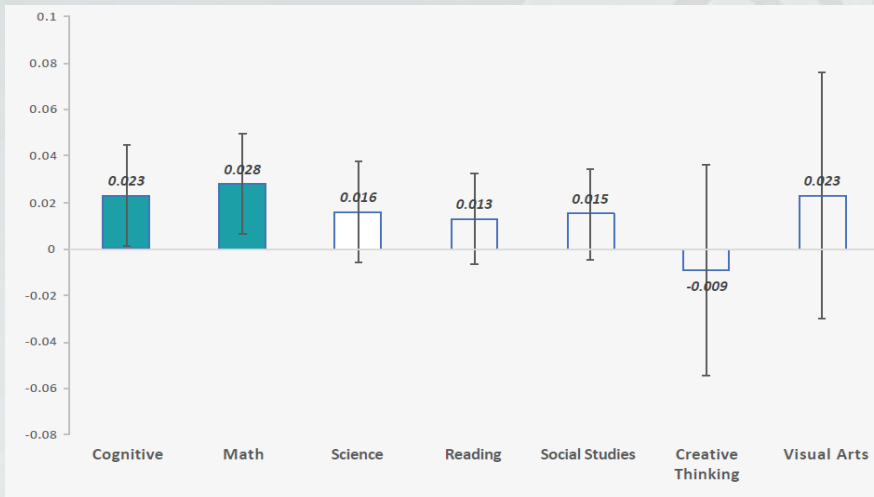
## College Enrollment



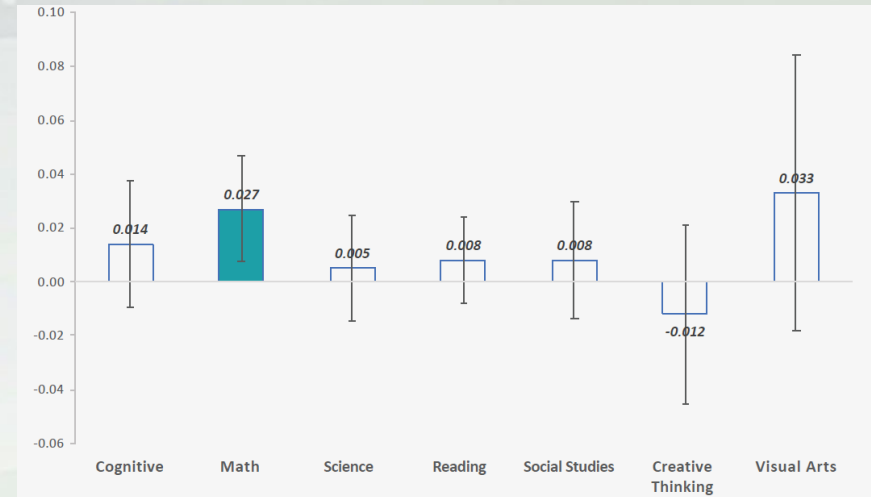
These show estimates of impacts of GT identification restricting to students who score in top 20% on math or reading in 3<sup>rd</sup> grade controlling for 3<sup>rd</sup> grade math and reading scores, demographics, cohort, and elementary school attended.

## Key Finding 7: Causal Estimates of GT Identification on Grade 4 - 8 Achievement of Early High Achievers Show Modest Improvements

### Math Achievement by GT Classification (Standard Deviations)



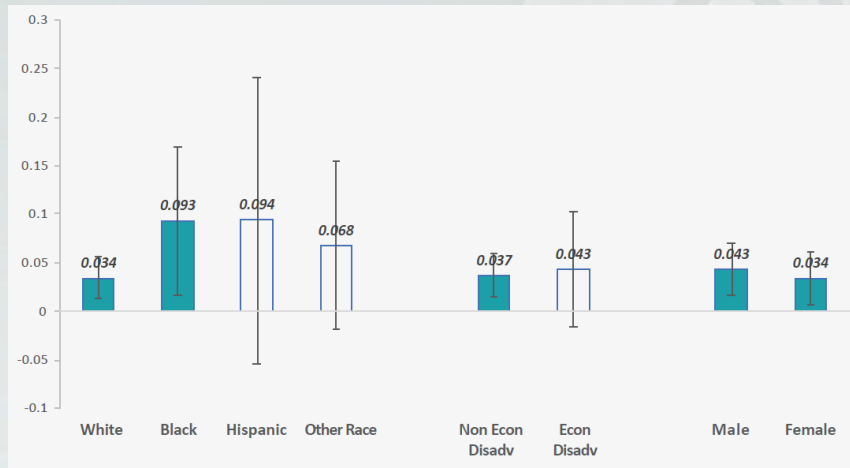
### Reading/ELA Achievement by GT Classification



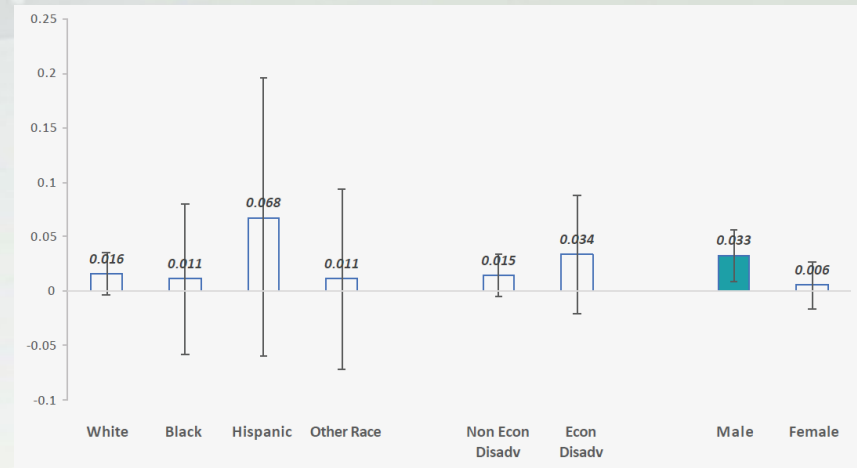
These are estimates from regression models that account for any student and school factors that do not change over time (e.g. certain background characteristics, unchanging parts of student ability or school quality). This makes it more likely the effect we see is a direct cause of GT identification, though it still does not account for factors that change over time that may affect both GT identification and achievement. Dark bars denote statistical significance with 95% confidence.

# Key Finding 8: GT Impacts on Math Achievement are Particularly Large for Black Students

## Math Achievement by Demographics (Standard Deviations)



## Reading/ELA Achievement by Demographics



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## Conclusion

- Early high achievers who are underrepresented minorities or economically disadvantaged perform worse on multiple metrics compared to other early high achievers.
- Early high achievers who are identified for gifted and talented services perform better than other early high achievers on long-run outcomes.
- These are correlational rather than causal results, so while they reflect true patterns, they may not reflect a policy impact of GT identification.
- However, more plausibly causal estimates show improvements in 4<sup>th</sup> to 8<sup>th</sup> grade achievement that are particularly strong for Black early high achievers