New Research on Social-Emotional Learning from the CORE-PACE Research Partnership

November 6, 2019

PACE
Policy Analysis for California Education

Agenda for the webinar

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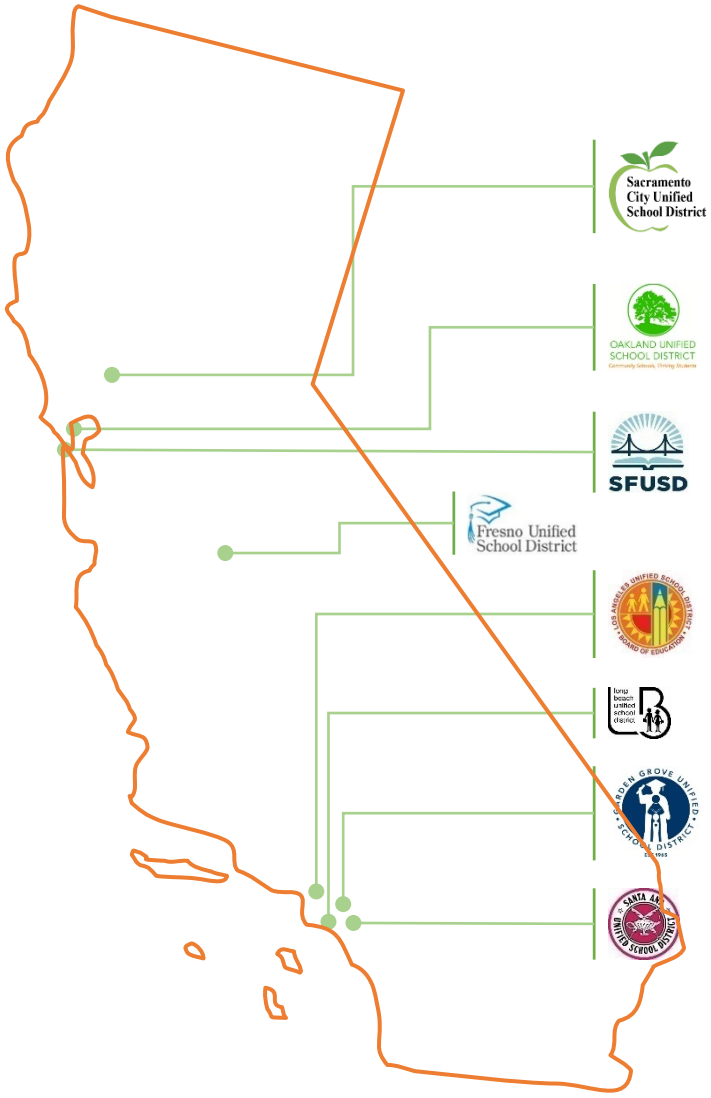
- Background on CORE's SEL measurement (Calhoun)
- Prior research on SEL and how new work fits in (Hough)
- A Middle School Drop: Consistent Gender Differences in Students' Self-Efficacy (Fahle)
- Students with Growth Mindset Learn More in School (Claro & Loeb)
- Self-Management Skills and Student Achievement Gains (Claro & Loeb)
- Assessing Survey Satisficing: The Impact of Unmotivated Questionnaire Respondents on Data Quality (Gehlbach)
- Can We Measure Classroom Supports for Social-Emotional Learning? (Pier)
- Q & A

Ask your questions in Zoom

The CORE Districts



8 school districts

> 1M students

~ 1,600 schools

> 51,000 teachers

CORE DISTRICTS

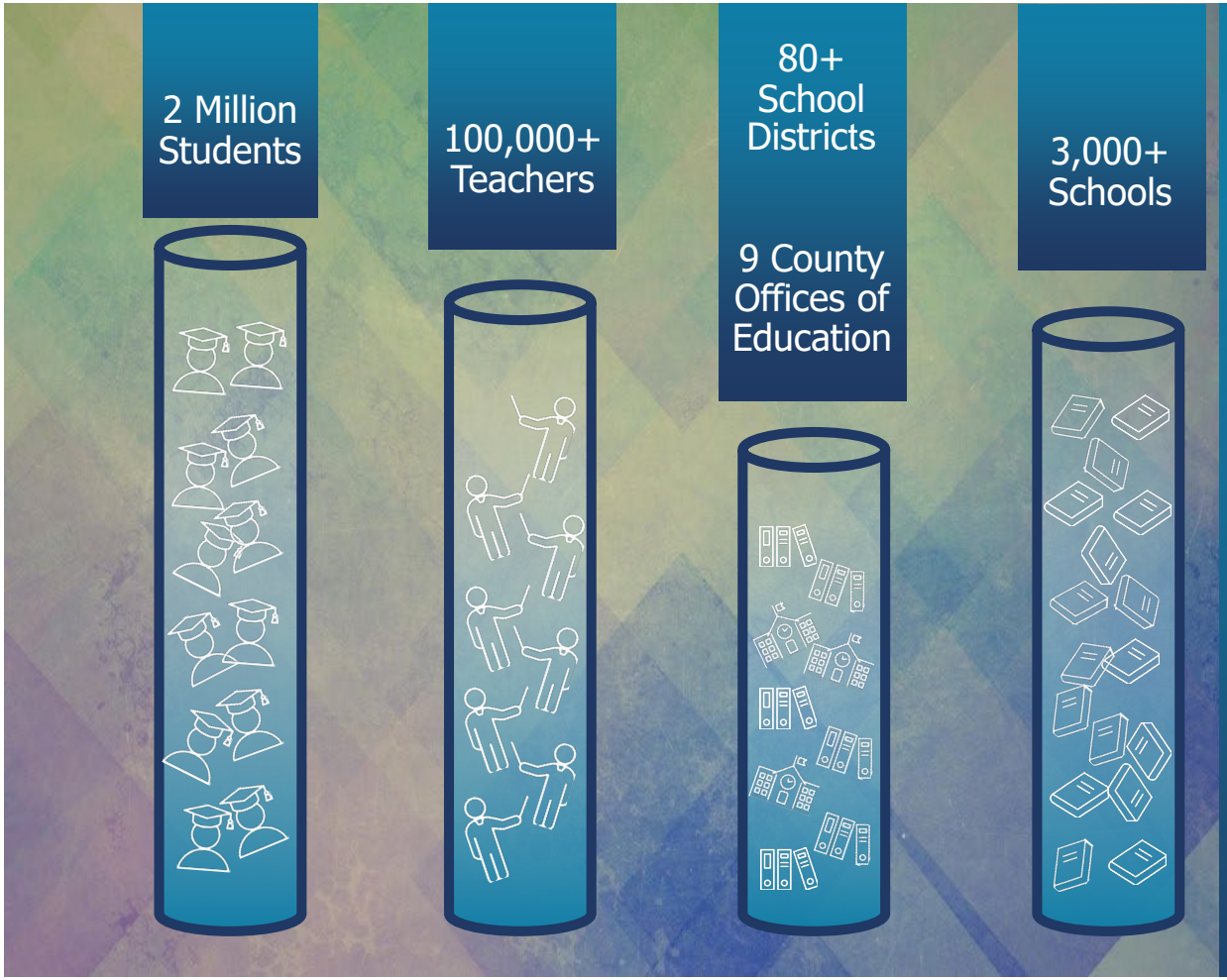
- Fresno Unified
- Garden Grove
- Los Angeles Unified
- Long Beach Unified
- Oakland Unified
- Sacramento City Unified
- San Francisco Unified
- Santa Ana Unified

8 SCHOOL DISTRICTS

>1m STUDENTS

~1,800 SCHOOLS

~56,700 EDUCATORS



DATA COLLABORATIVE COMMUNITY

Created by Districts for Districts

CORE DISTRICTS

CORE's Dashboard Measures

CALIFORNIA DASHBOARD

- ✓Student Test Results
- ✓English Learner Progress
- ✓Chronic Absenteeism
- ✓Suspension Rates
- ✓Graduation Rates

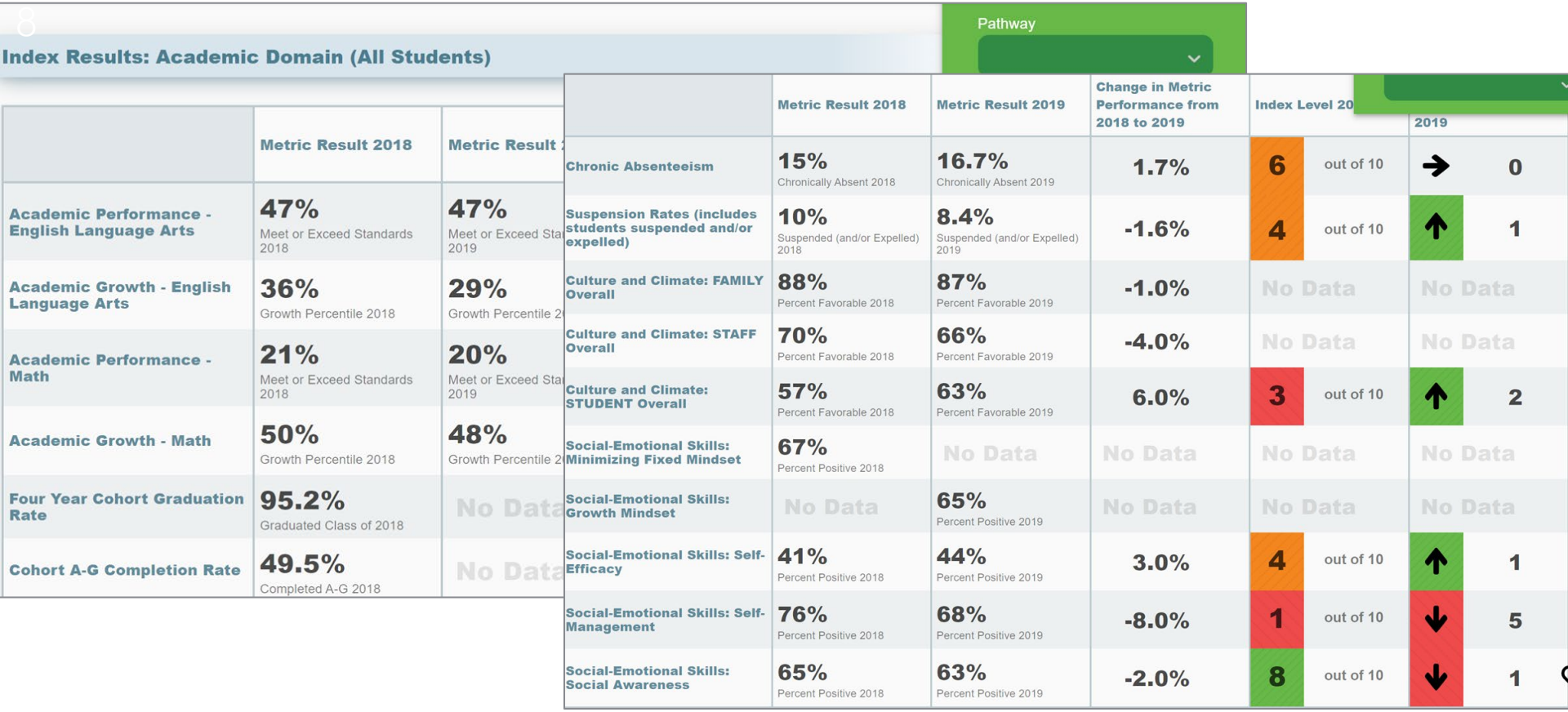
CORE'S LOCALLY DRIVEN MEASURES

- ✓Student Academic Growth
- ✓Student Social/Emotional Learning
- ✓School Culture and Climate
- ✓High School Readiness

UNDER DEVELOPMENT

- ✓College and Career Readiness

The CORE Dashboard



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Index Results: Academic Domain (All Students)

Pathway

	Metric Result 2018	Metric Result 2019
Academic Performance - English Language Arts	47% Meet or Exceed Standards 2018	47% Meet or Exceed Sta 2019
Academic Growth - English Language Arts	36% Growth Percentile 2018	29% Growth Percentile 2
Academic Performance - Math	21% Meet or Exceed Standards 2018	20% Meet or Exceed Sta 2019
Academic Growth - Math	50% Growth Percentile 2018	48% Growth Percentile 2
Four Year Cohort Graduation Rate	95.2% Graduated Class of 2018	No Data
Cohort A-G Completion Rate	49.5% Completed A-G 2018	No Data

	Metric Result 2018	Metric Result 2019	Change in Metric Performance from 2018 to 2019	Index Level 20	2019
Chronic Absenteeism	15% Chronically Absent 2018	16.7% Chronically Absent 2019	1.7%	6 out of 10	→ 0
Suspension Rates (includes students suspended and/or expelled)	10% Suspended (and/or Expelled) 2018	8.4% Suspended (and/or Expelled) 2019	-1.6%	4 out of 10	↑ 1
Culture and Climate: FAMILY Overall	88% Percent Favorable 2018	87% Percent Favorable 2019	-1.0%	No Data	No Data
Culture and Climate: STAFF Overall	70% Percent Favorable 2018	66% Percent Favorable 2019	-4.0%	No Data	No Data
Culture and Climate: STUDENT Overall	57% Percent Favorable 2018	63% Percent Favorable 2019	6.0%	3 out of 10	↑ 2
Social-Emotional Skills: Minimizing Fixed Mindset	67% Percent Positive 2018	No Data	No Data	No Data	No Data
Social-Emotional Skills: Growth Mindset	No Data	65% Percent Positive 2019	No Data	No Data	No Data
Social-Emotional Skills: Self-Efficacy	41% Percent Positive 2018	44% Percent Positive 2019	3.0%	4 out of 10	↑ 1
Social-Emotional Skills: Self-Management	76% Percent Positive 2018	68% Percent Positive 2019	-8.0%	1 out of 10	↓ 5
Social-Emotional Skills: Social Awareness	65% Percent Positive 2018	63% Percent Positive 2019	-2.0%	8 out of 10	↓ 1

Development & History of the CORE Survey

CORE SEL Survey At-A-Glance

2015 - 2019
(Years Covered)

~500,000 Students/Year

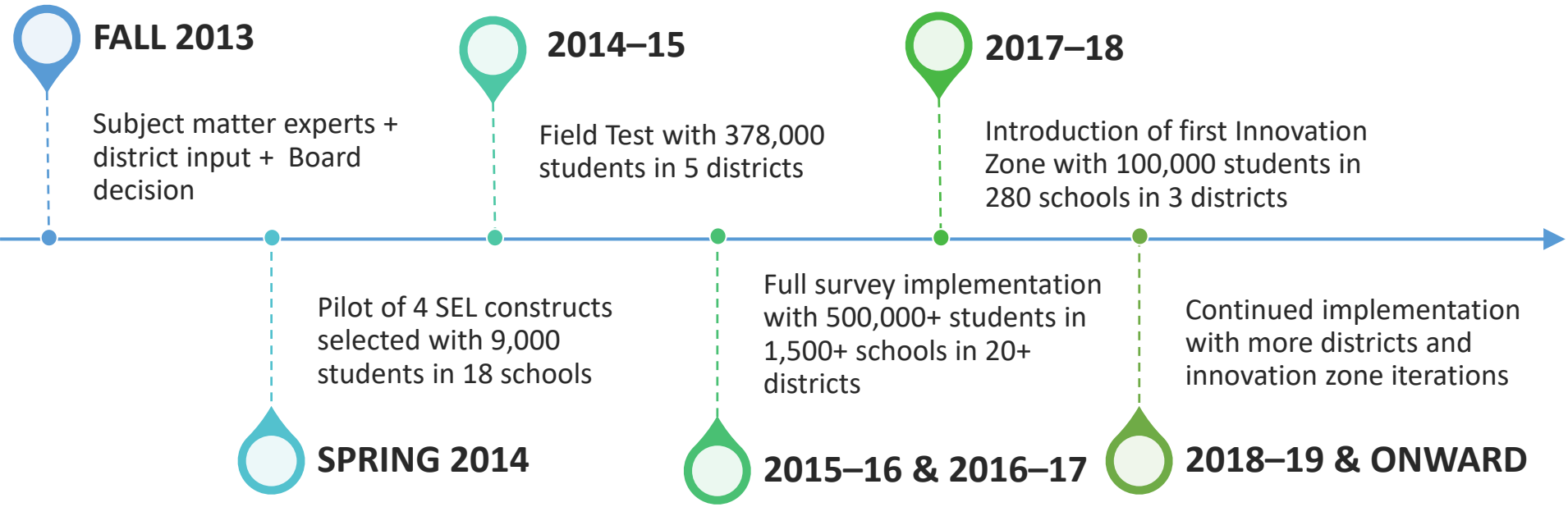
Grades 4-12

20+ Districts

1,500+ Schools

10+ Papers

History of the CORE SEL Survey



History of the CORE SEL Survey

GROWTH MINDSET

belief that one's strengths can grow with effort

- 2014-17: 4 Items
- 2017-18: 4 Items
- 2018-19: 4 Items

SELF-EFFICACY

belief in one's ability to succeed in achieving an outcome or reaching a goal

- 2014-17: 4 Items
- 2017-18: 4 Items
- 2018-19: 4 Items

SELF-MANAGEMENT

ability to regulate one's emotions, thoughts, and behaviors effectively in different situations

- 2014-17: 9 Items
- **2017-18: 7 Items**
- **2018-19: 5 Items**

SOCIAL AWARENESS

ability to take the perspective of and empathize with others, including those from diverse backgrounds and cultures

- 2014-17: 8 Items — 25 items
- **2017-18: 6 Items** — 21 items
- **2018-19: 5 Items** — 18 items

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Social and Emotional Learning

https://edpolicyinca.org/projects/core-pace-research-partnership/publications

How should scores be calculated and reported?

Is there bias in how students answer the questions?

How are SEL measures related to other academic and behavioral measures?

How can measures be used to support school improvement?

Social and Emotional Learning

How can the survey itself be continually improved?

Does improvement in SEL lead to improvement in academics?

Are the measures consistent across administrations/ respondents?

Do SEL outcomes vary for different student groups?

(How) do teachers contribute to students' growth?

(How) do schools contribute to students' growth?

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A Middle School Drop: Consistent Gender Differences in Students' Self-Efficacy

Erin Fahle, St. John's University

Monica Lee, Stanford University

Susanna Loeb, Brown University

What is academic self-efficacy?

- Confidence in academic ability; ability to succeed in school.

How confident are you about the following at school?

Q1. I can earn an A in my classes.

Q2. I can do well on all my tests, even when they're difficult.

Q3. I can master the hardest topics in my classes.

Q4. I can meet all the learning goals my teachers set.

(1 = Not At All Confident; 2 = A Little Confident; 3 = Somewhat Confident; 4 = Mostly Confident; 5 = Completely Confident)

What do we know about academic self-efficacy?

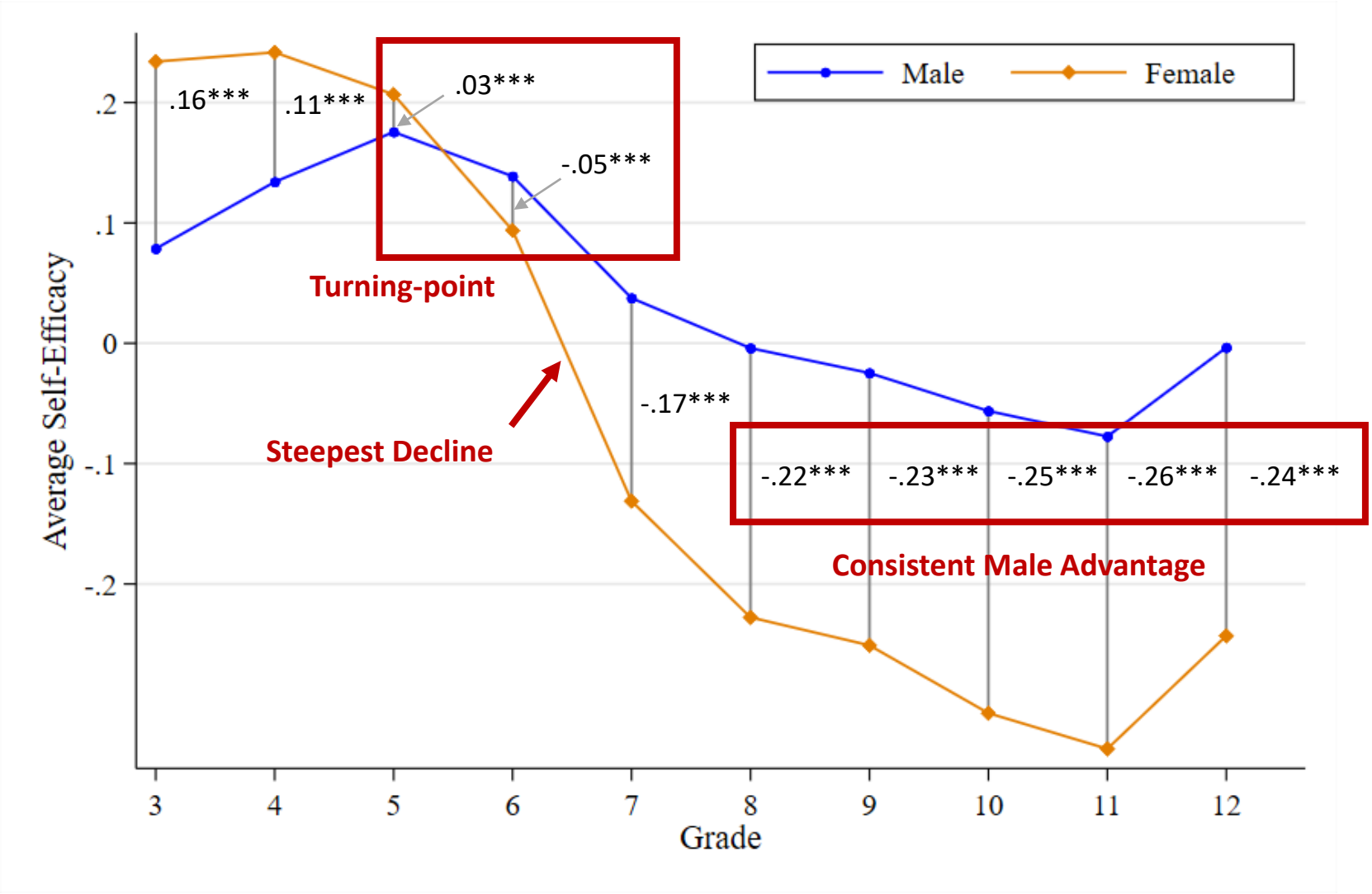
- Academic self-efficacy:
  - Is positively correlated with academic achievement (e.g., Pajares, 1996)
  - Tends to decline in middle school (e.g., West et al., 2018)
  - Is lower, on average, for female students compared to males in middle and high school (e.g., West et al., 2018)

- We do not know, however, whether gender disparities in self-efficacy vary by student characteristics or school contexts.

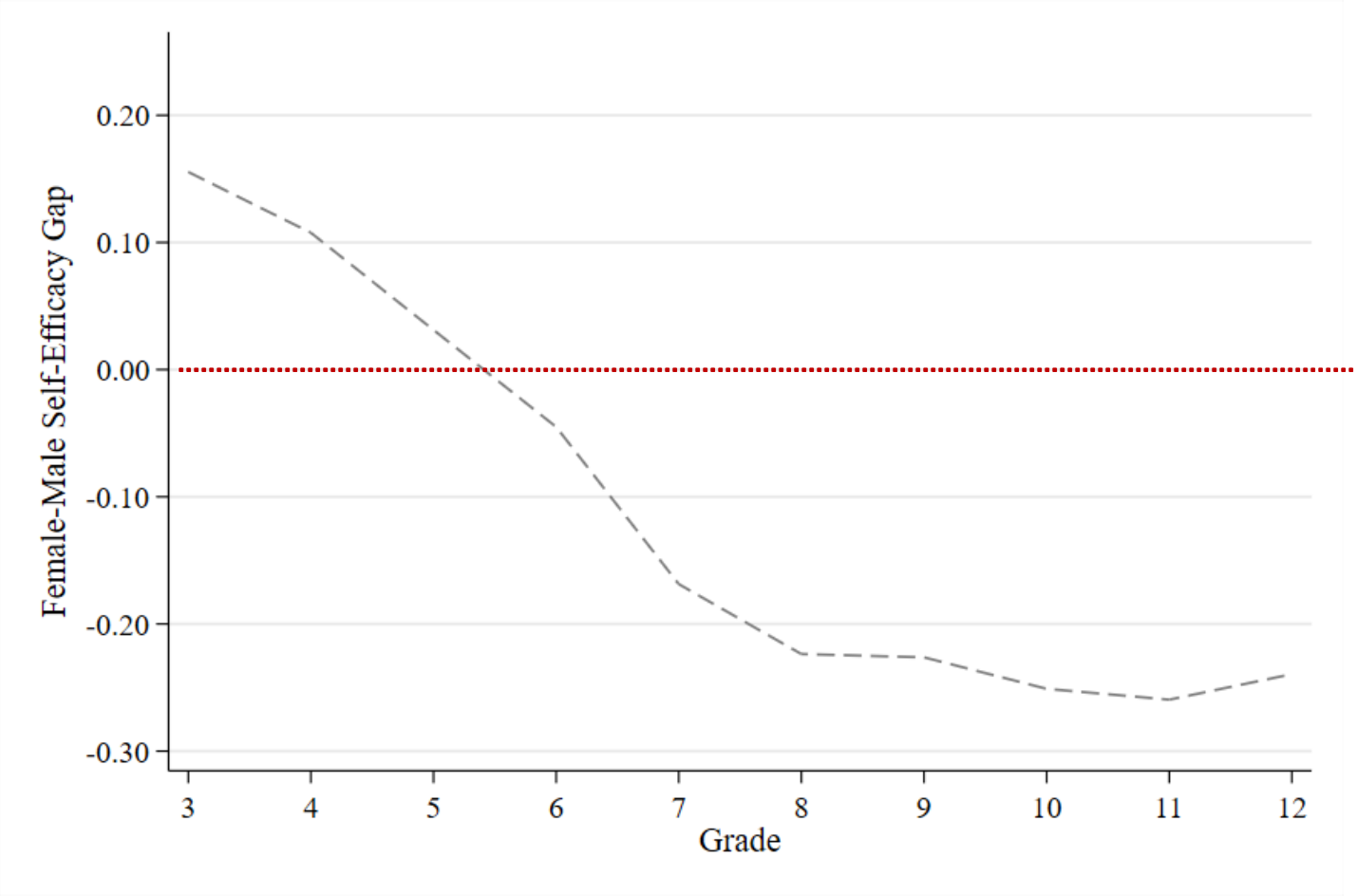
Data & Strategy

- We use self-efficacy survey responses from 796,581 3rd-12th grade students attending 813 schools in 5 CORE districts in the 2014-15 through 2017-18 SYs.

- We model self-efficacy and gender gaps in self-efficacy
  - Separately by racial/ethnic, income, and prior achievement subgroups
  - Allowing trends to vary among schools


Male
Female
.16***
.11***
.03***
-.05***
Turning-point
Steepest Decline
-.17***
-.22***
-.23***
-.25***
-.26***
-.24***
Consistent Male Advantage
Average Self-Efficacy
.2
.1
0
-.1
-.2
3
4
5
6
7
8
9
10
11
12
Grade

Self-efficacy gender gaps begin female-favoring and shift to be male-favoring



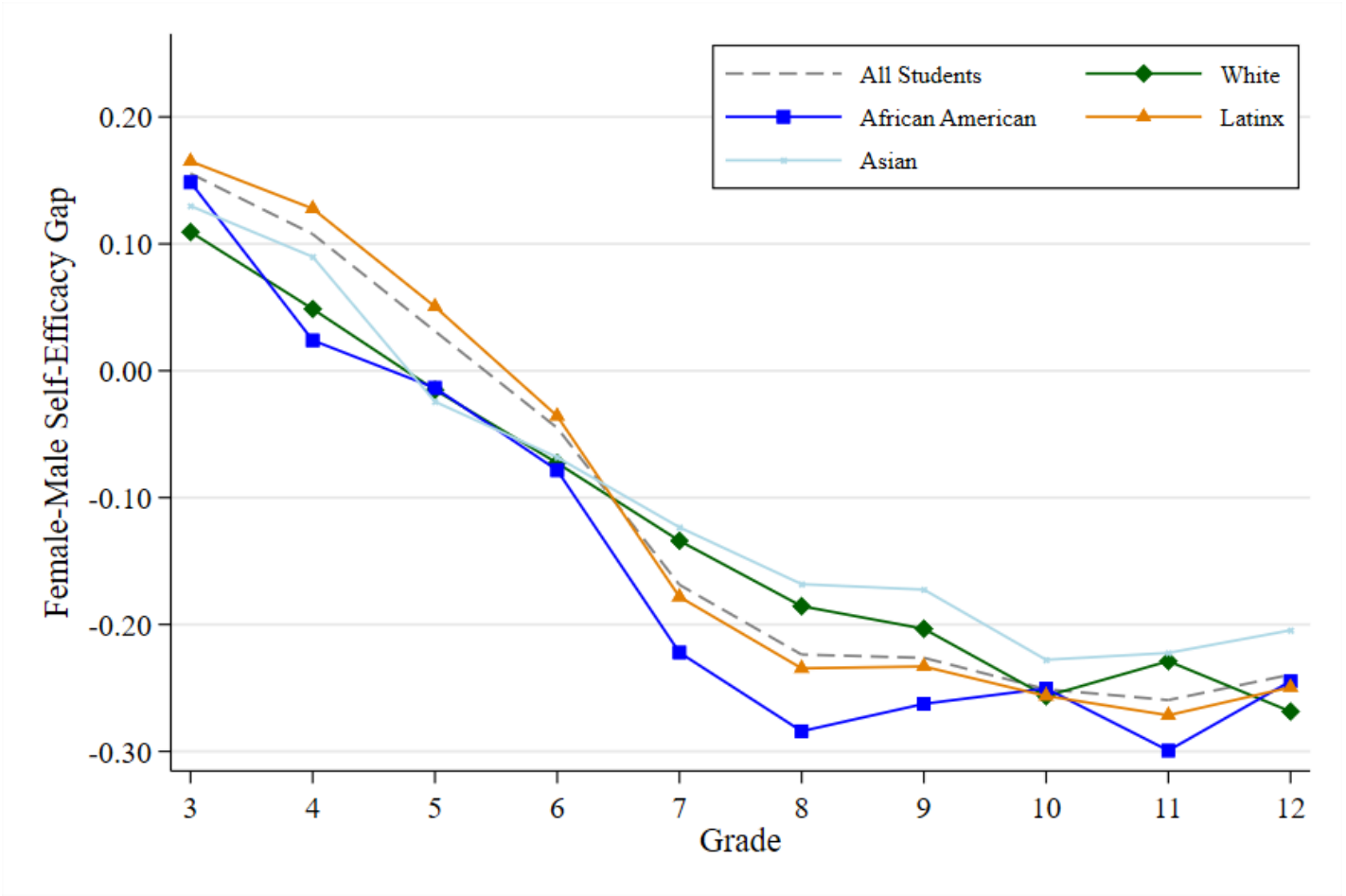
Self-efficacy differs among race, income, & achievement groups

- Among racial/ethnic groups:
  - White students have the highest average self-efficacy
  - Latinx students have the lowest average self-efficacy

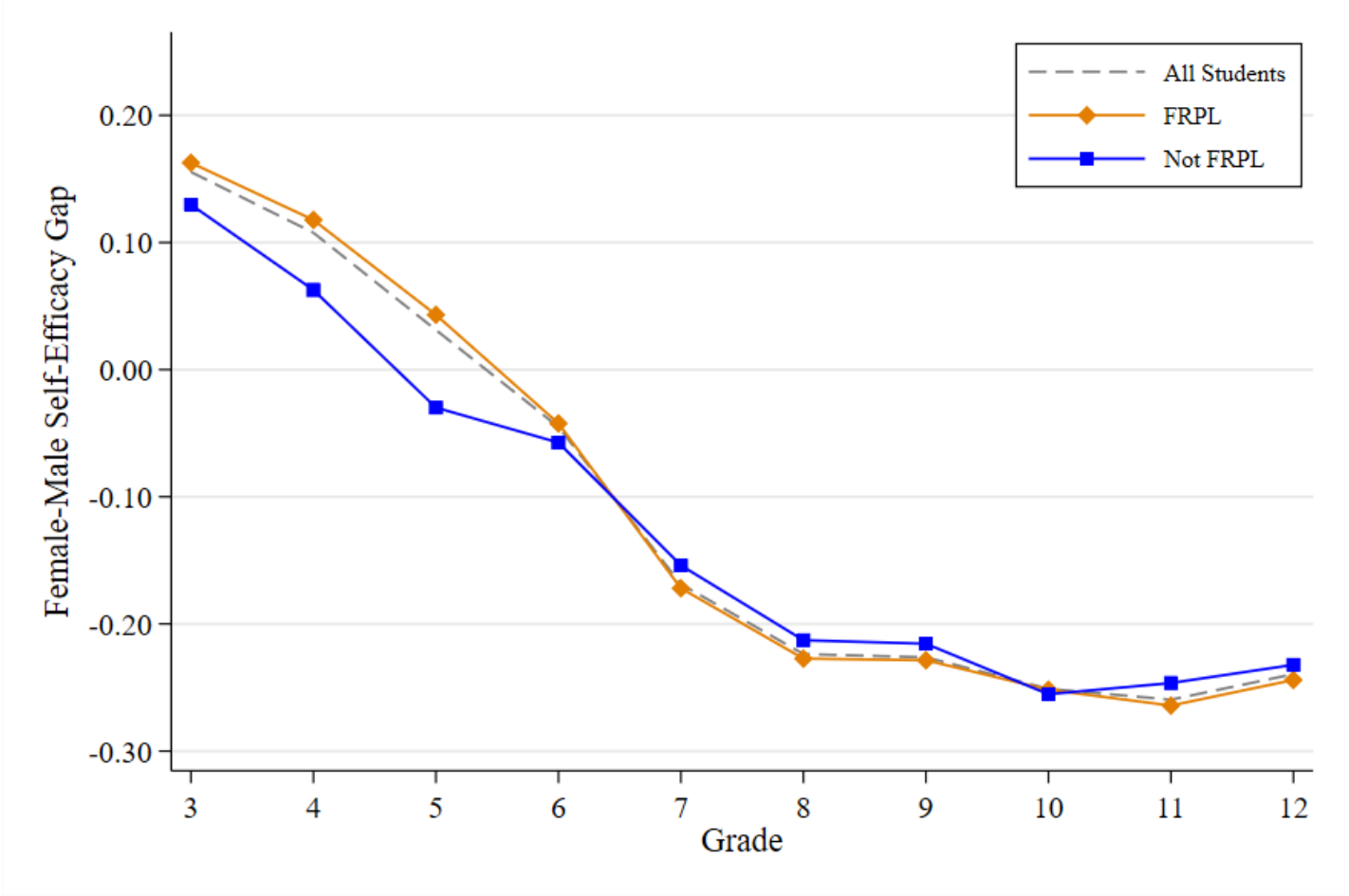
- Students receiving FRPL have lower self-efficacy than students who are not eligible.

- Higher achieving students have higher self-efficacy than lower achieving students.

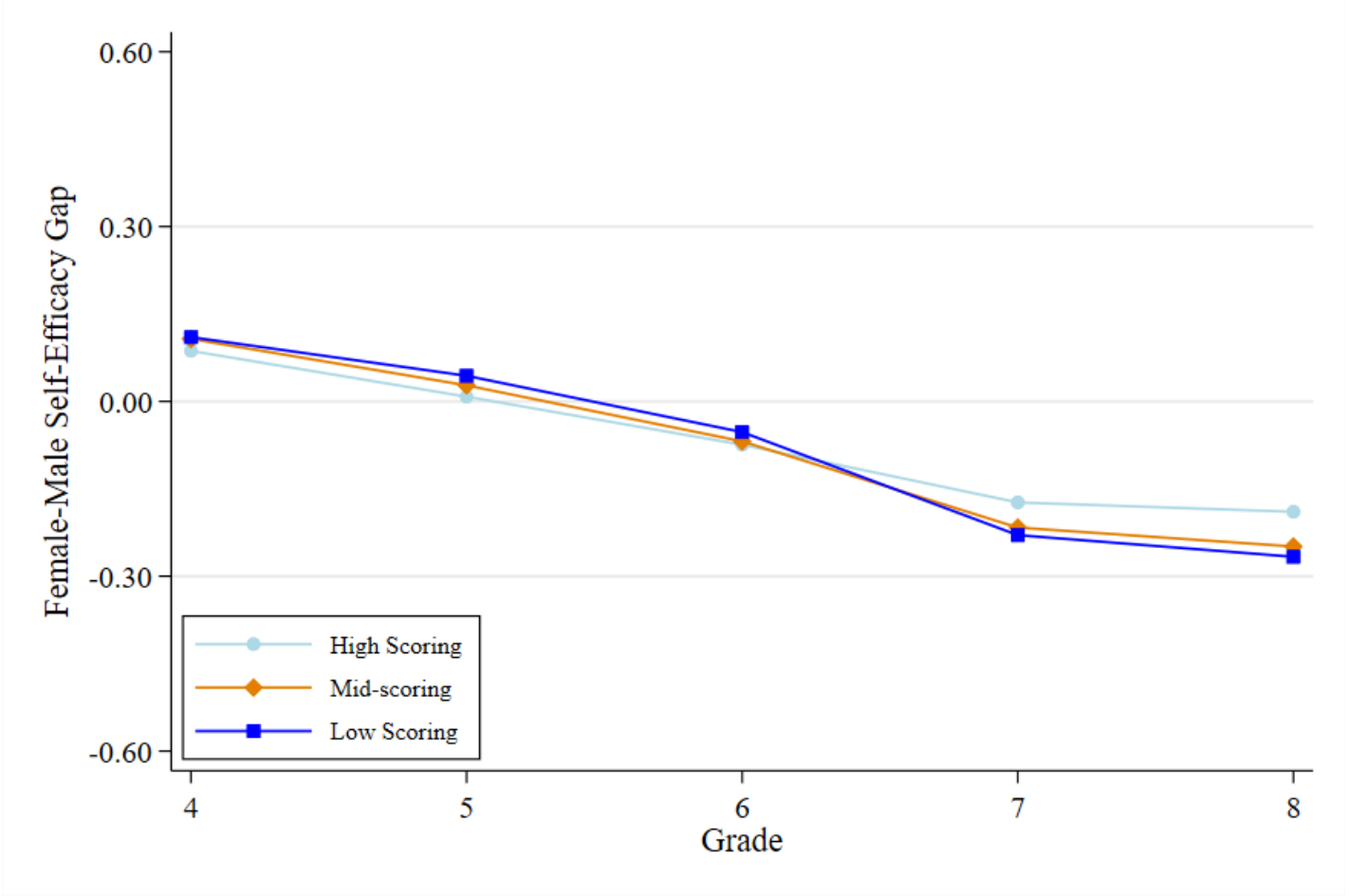
But self-efficacy gender gaps are similar among racial/ethnic groups…



…income groups…



…and groups defined by prior test scores.



Self-efficacy and school climate

- Students' average self-efficacy differs significantly among schools
  - Average self-efficacy is higher in schools where students:
    - Reported supportive learning environments
    - Reported high sense of belonging
    - Perceived discipline is fair.
  - Climate explains little of the variation among schools in average self-efficacy.

- The gender gap in self-efficacy does not vary among schools.

Takeaways

- Self-efficacy declines in middle school for everyone, but faster for female students.
- There is a large gender gap in favor of males students in middle and high school.
- The gender gap is remarkably consistent across subgroups, schools, and prior achievement.

- Implications:
  - Factors that drive gender self-efficacy gaps are pervasive within different groups and contexts.
  - Need to investigate gender differences within academic experiences that may contribute to these gaps.

Thank you!

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Susanna Loeb

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Effects of Self-Management and Growth Mindset on Academic Achievement

Evidence from California's CORE districts

Susana Claro
P. Universidad Católica de Chile

Susanna Loeb
Brown University

November 5 2019- Core PACE SEL Session

Introduction

- Growth Mindset: Belief that intelligence is malleable vs fixed (Dweck, 2012)
- Interventions to develop growth mindsets lead to greater academic success (K-12 experiments: Good et al., 2003; Blackwell et al.,2007; Yeager et al., 2014; Paunesku et al., 2015; Yeager et al., 2016)

- Self Management: Ability to regulate one's emotions, thoughts, and behaviors in different situations. (CORE Districts)
- Better predictor of GPA and graduation rates than standardized test-scores. (Duckworth and Carlson, 2005)

- No information of the effects of self-management and growth mindset on academic achievement for subgroups from a large population

Research Questions

- Variation: How do growth mindset and self management vary across grades and student subgroups?
  - Are these differences evident within schools?

- Effects: How do growth mindset and self management predict academic achievement a year later?
  - Does this relationship differ across student subgroups?

Measure of Growth Mindset

1. My intelligence is something that I can't change very much.

   Similar to Dweck, 1999
2. Challenging myself won't make me any smarter.
3. There are some things I am not capable of learning.
4. If I am not naturally smart in a subject, I will never do well in it.

Farrington et al, 2013

Measure of Self-Management

How often you did the following during the past 30 days?

Academic Self-control

1. I came to class prepared.
2. I remembered and followed directions.
3. I got my work done right away instead of waiting until the last minute.
4. I paid attention, even when there were distractions.

Interpersonal Self-control

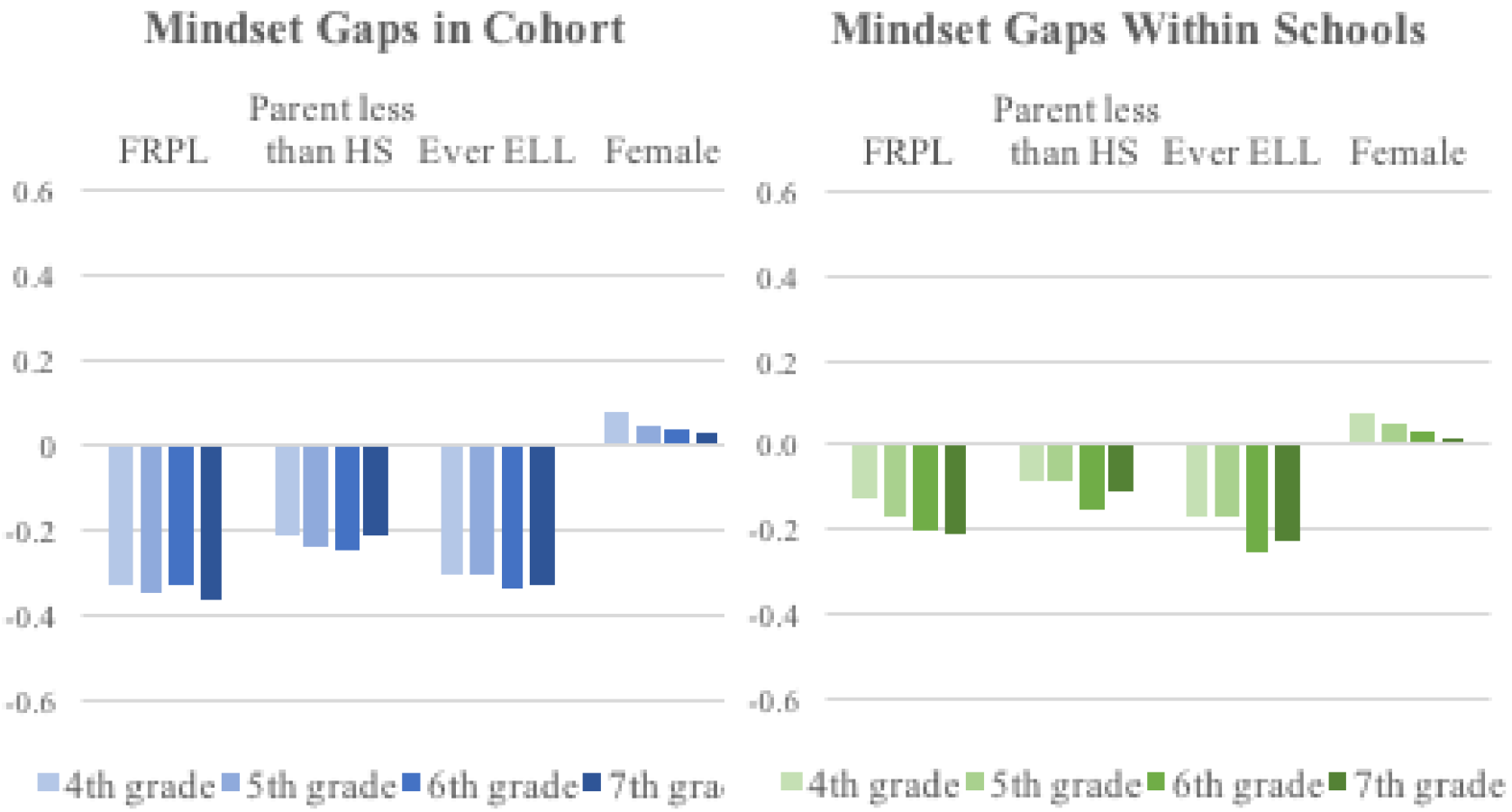
5. I worked independently with focus.
6. I stayed calm even when others bothered or criticized me.
7. I allowed others to speak without interruption.
8. I was polite to adults and peers.
9. I kept my temper in check.

Park , Tsukayama, Goodwin , Patrick, and Duckworth (2016)

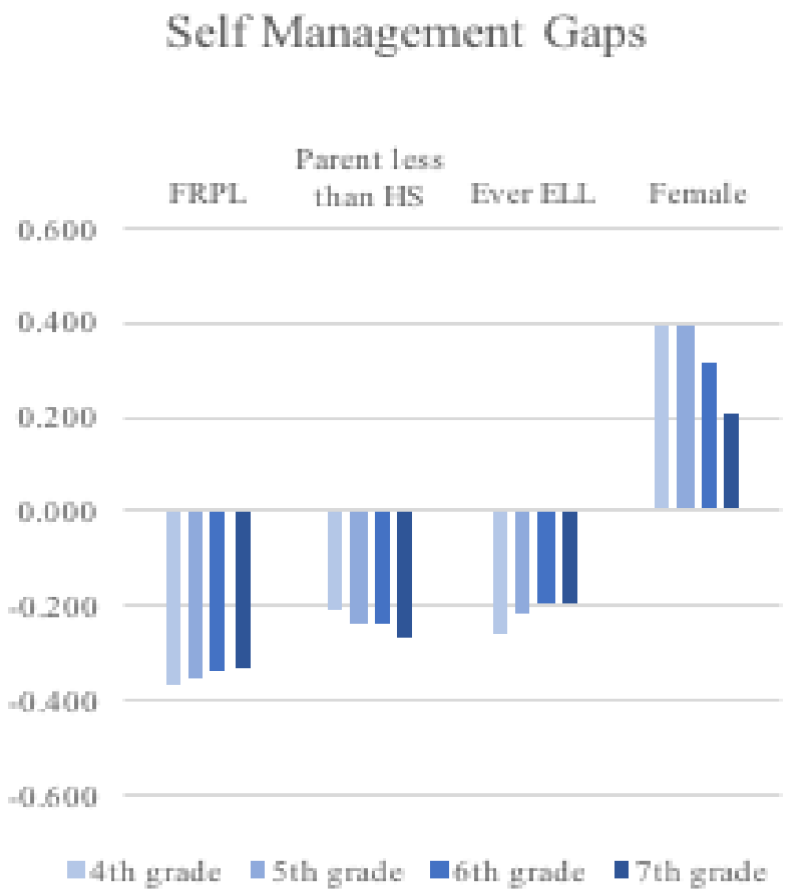
Findings 1

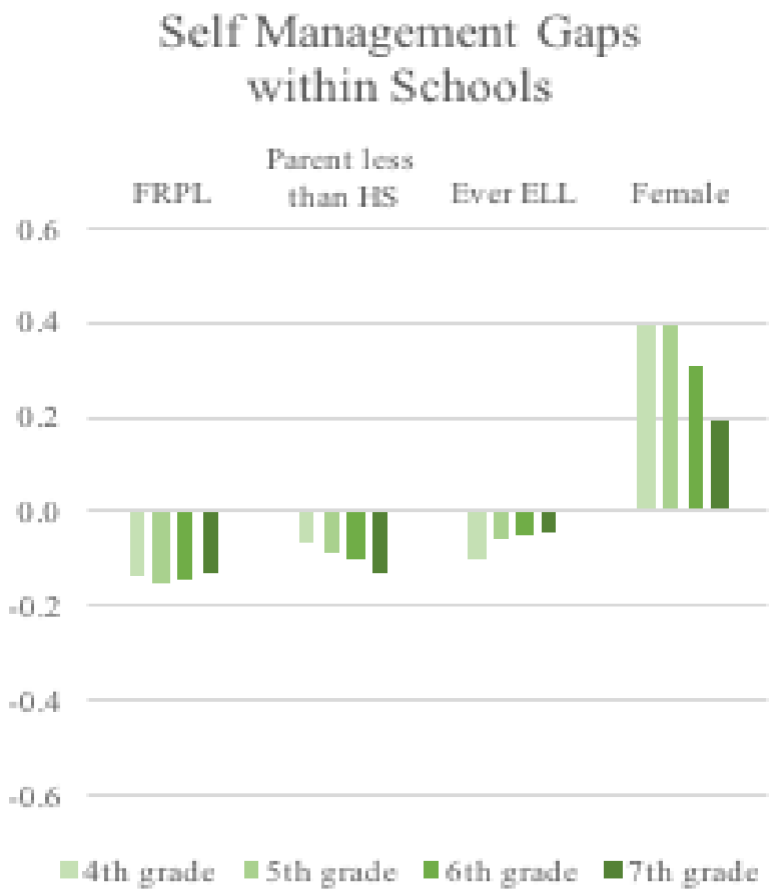
Variation

Disadvantaged students report lower mindset levels



Disadvantaged students report lower self-management skills



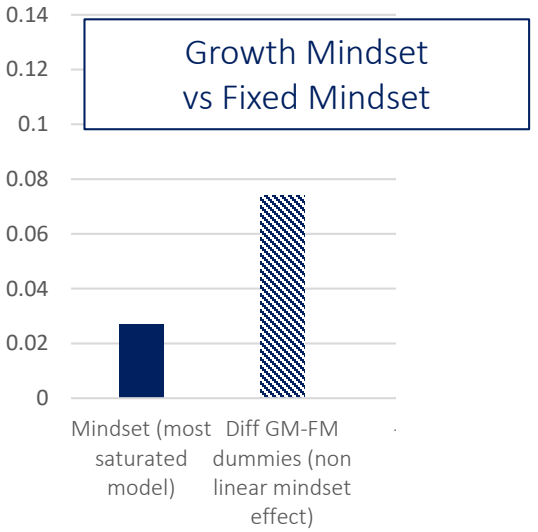


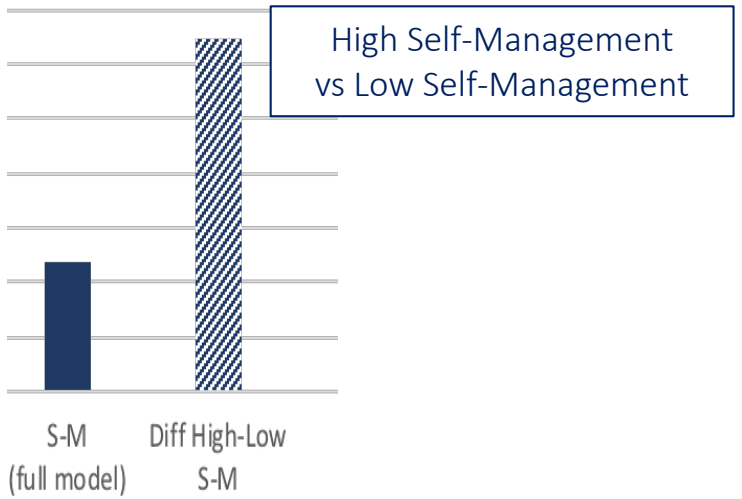
Findings 2

Effects on Achievement Gains

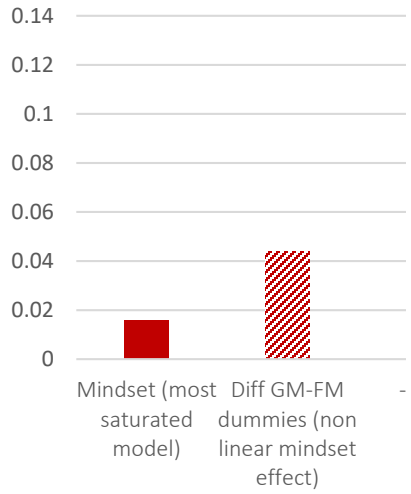
Effect of Mindset & Self-Management on Achievement

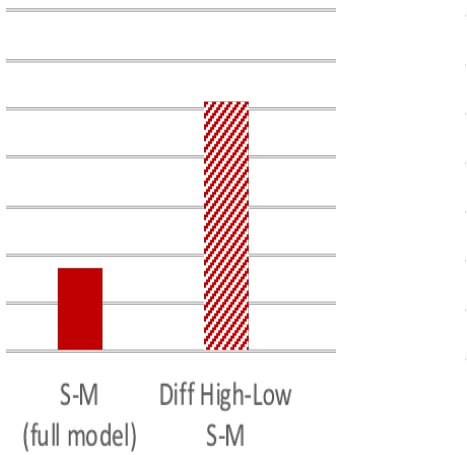
Effects on ELA





Effects on Math

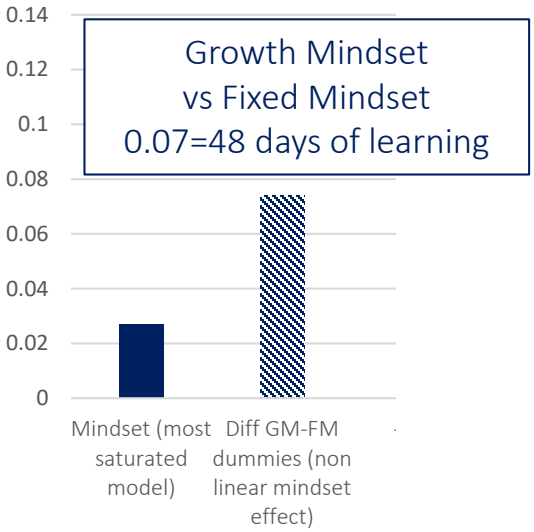




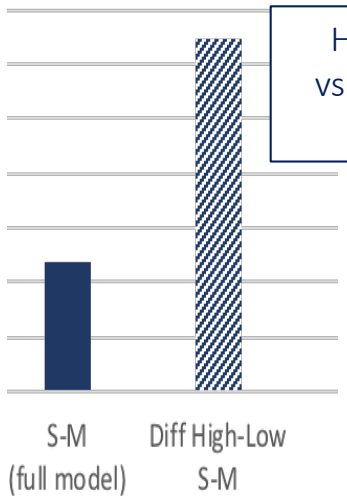
$p<0.001$.

Effect of Mindset & Self-Management on Achievement

Effects on ELA

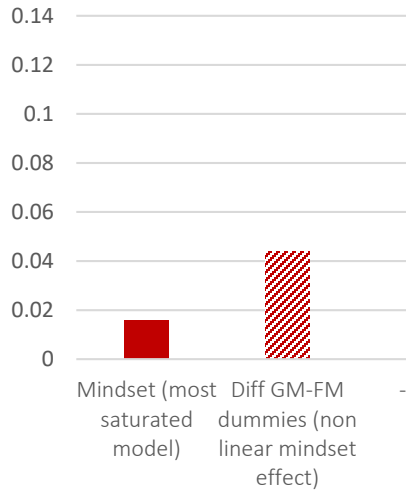


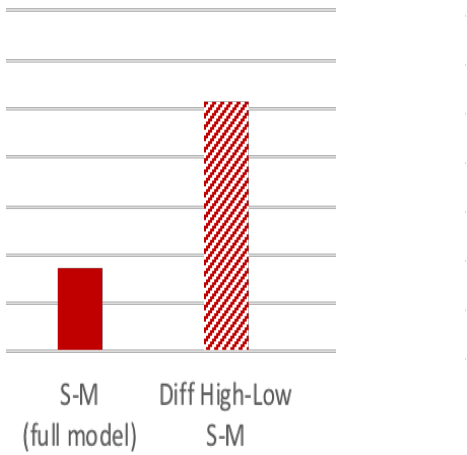
Growth Mindset
vs Fixed Mindset
0.07=48 days of learning



High Self-Management
vs Low Self-Management
=80 days of learning

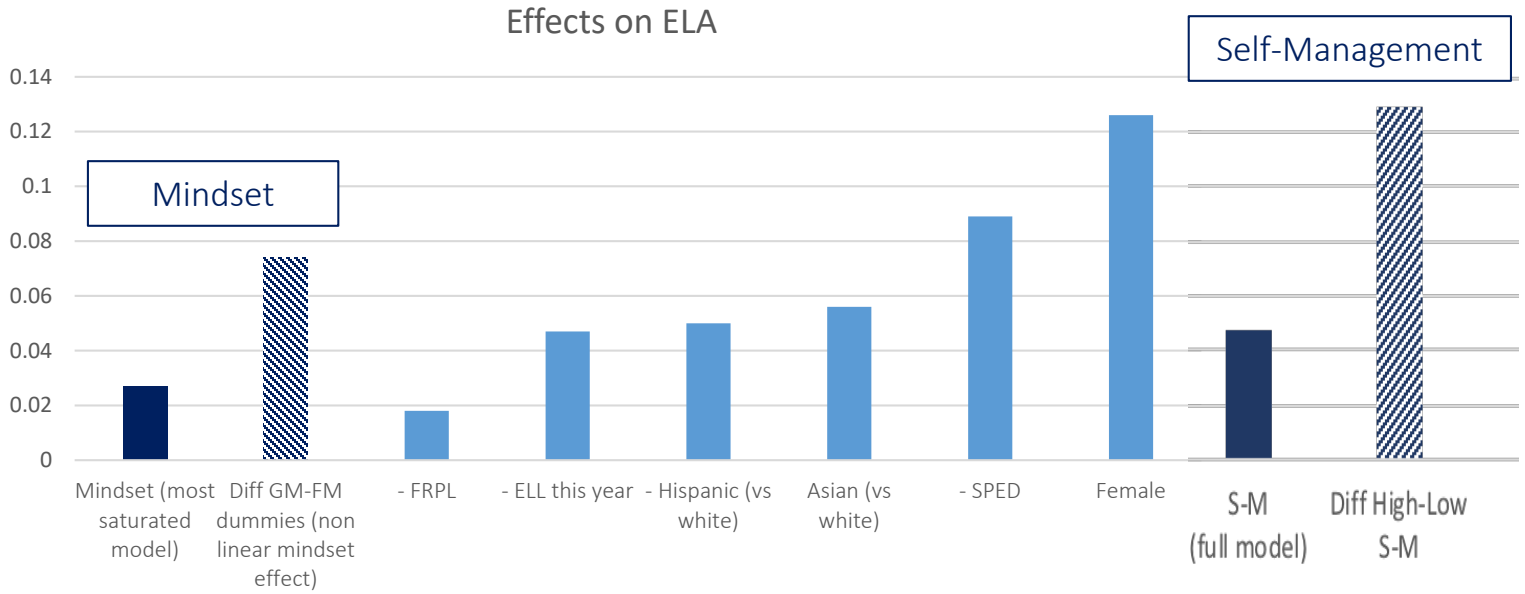
Effects on Math

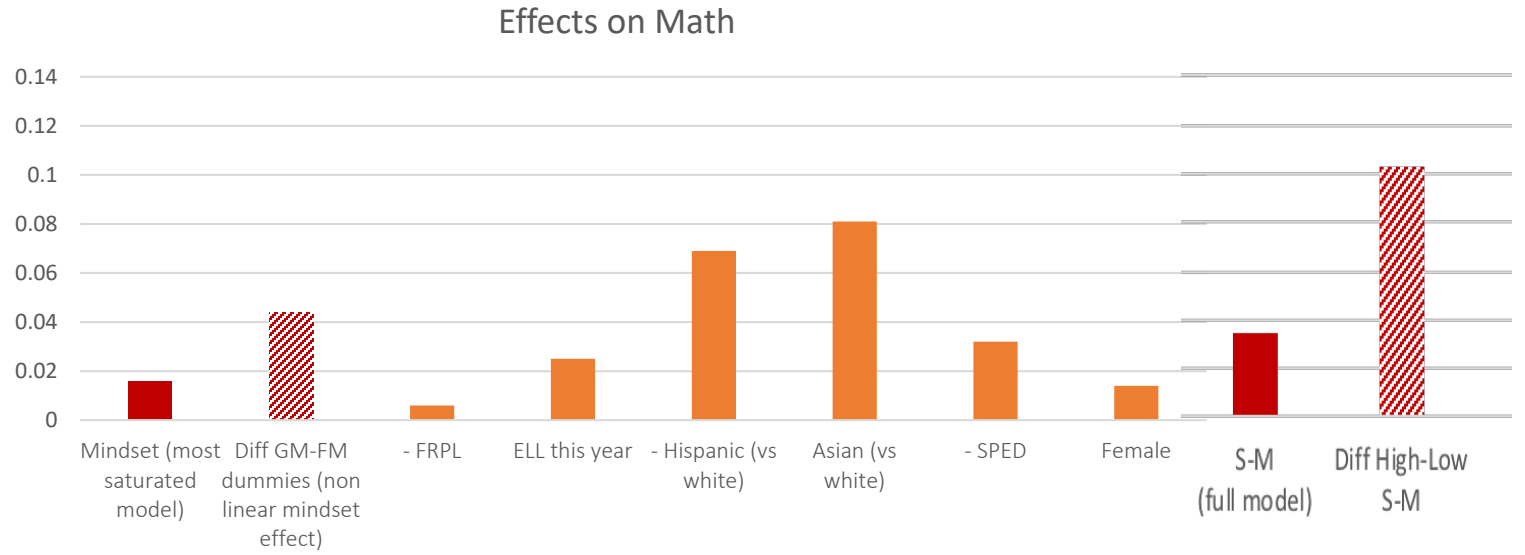




$p<0.001$. Annual growth in scores of the education system in the US between 1995 and 2009: 0.016 SD

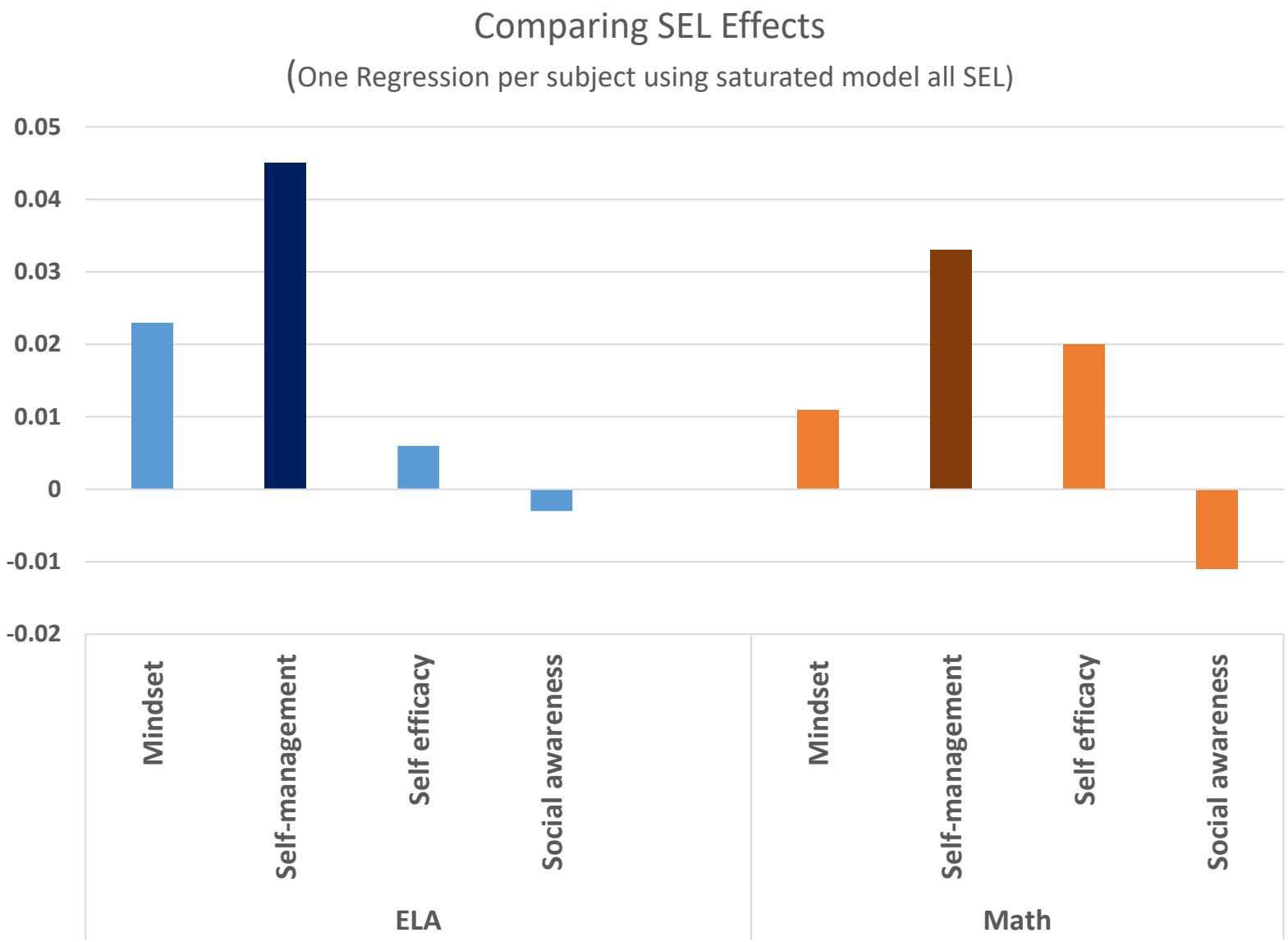
How big is the effect?
Comparing to demographics:





All $p<0.001$

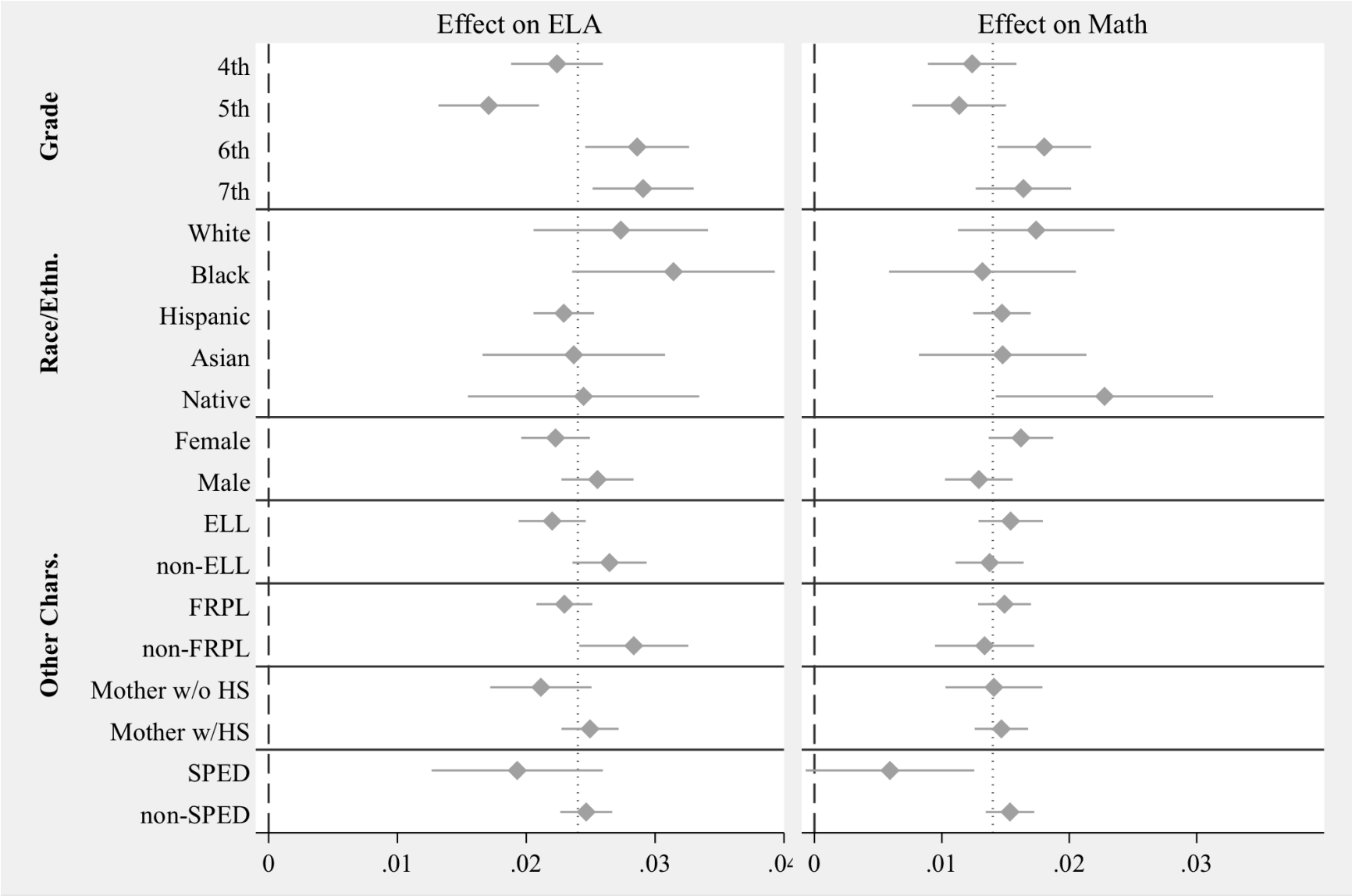
Comparison Between SEL Measures



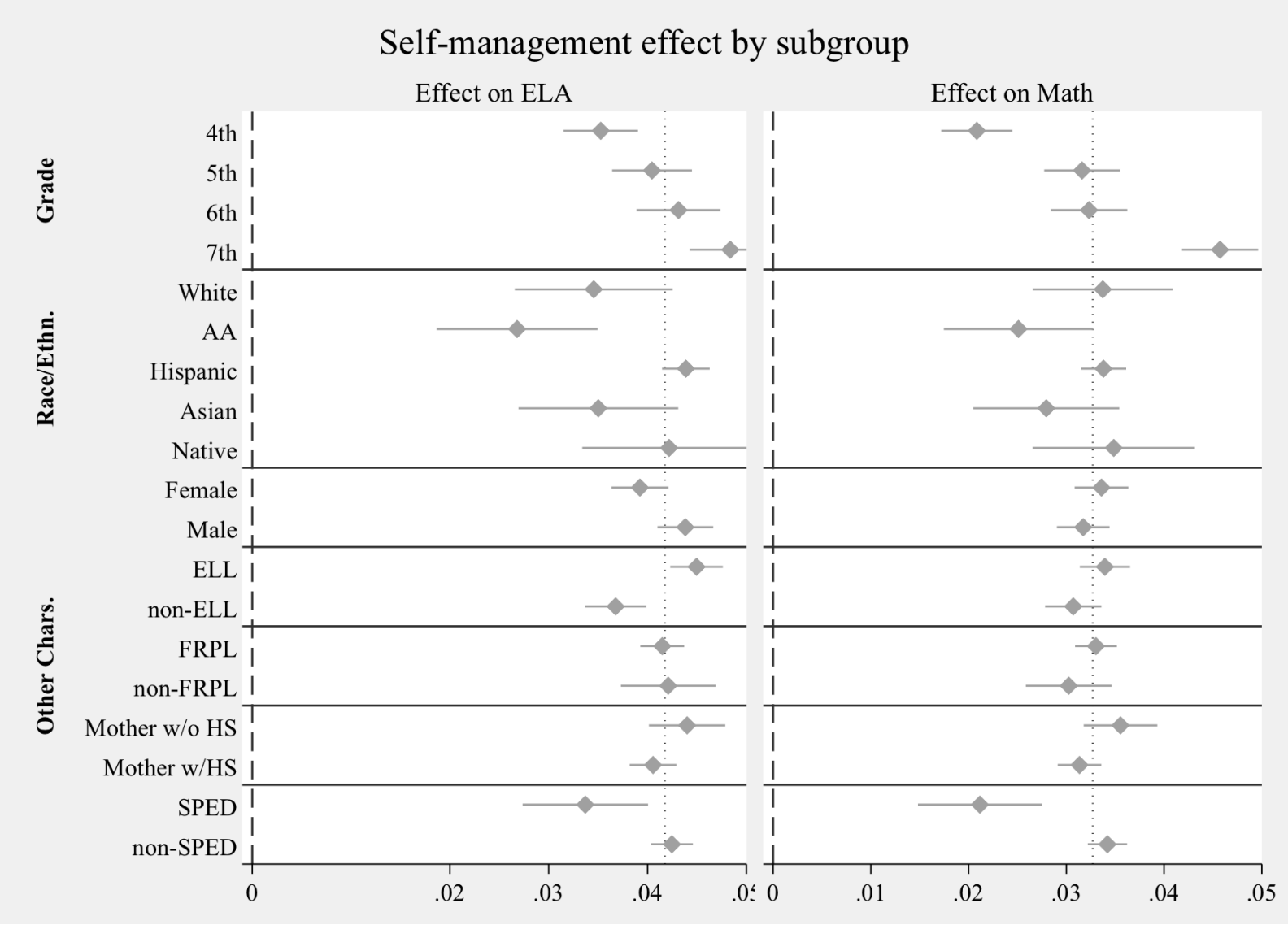
Findings 3

Heterogeneity

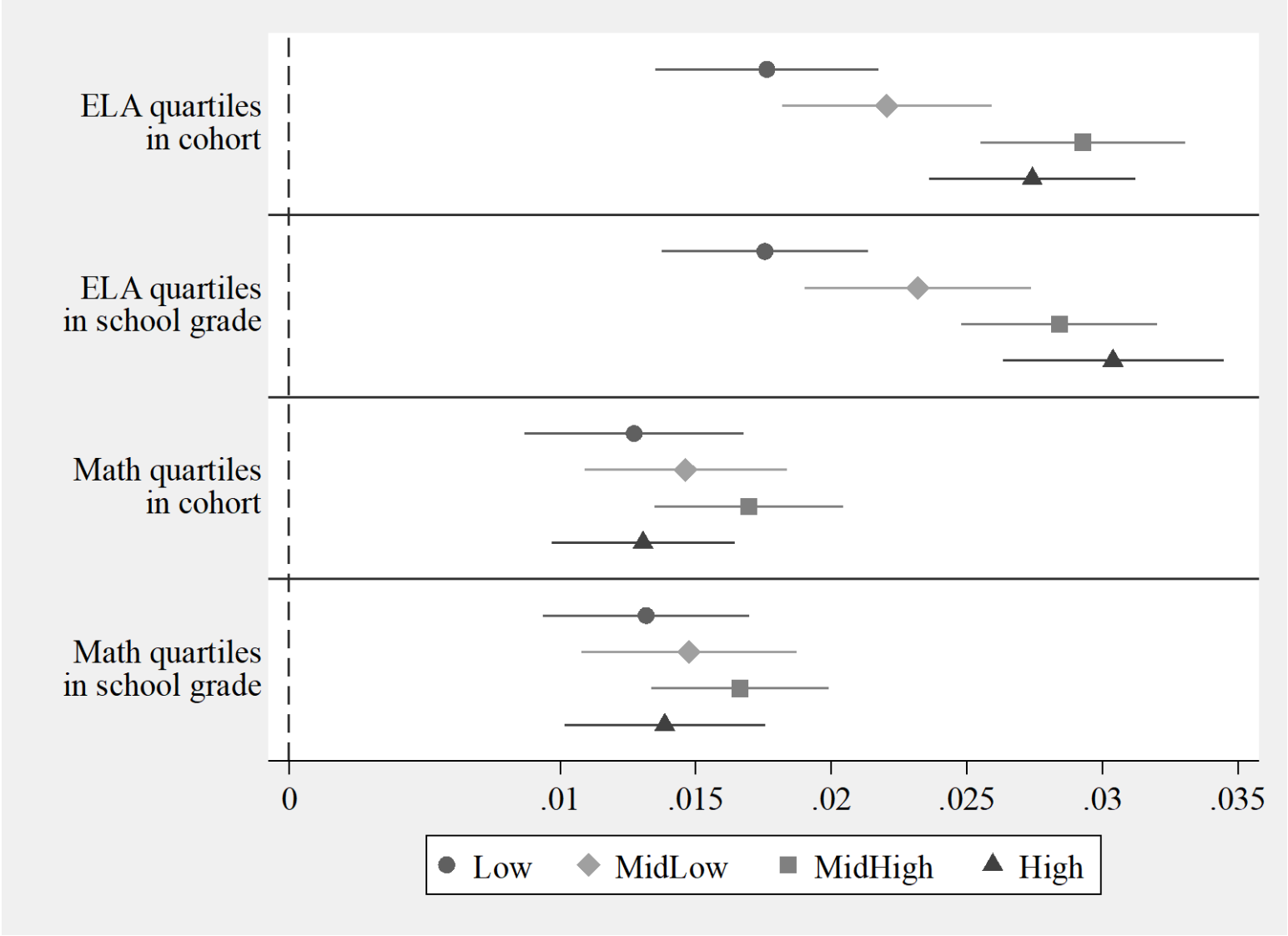
Mindset effects positive in all subgroups



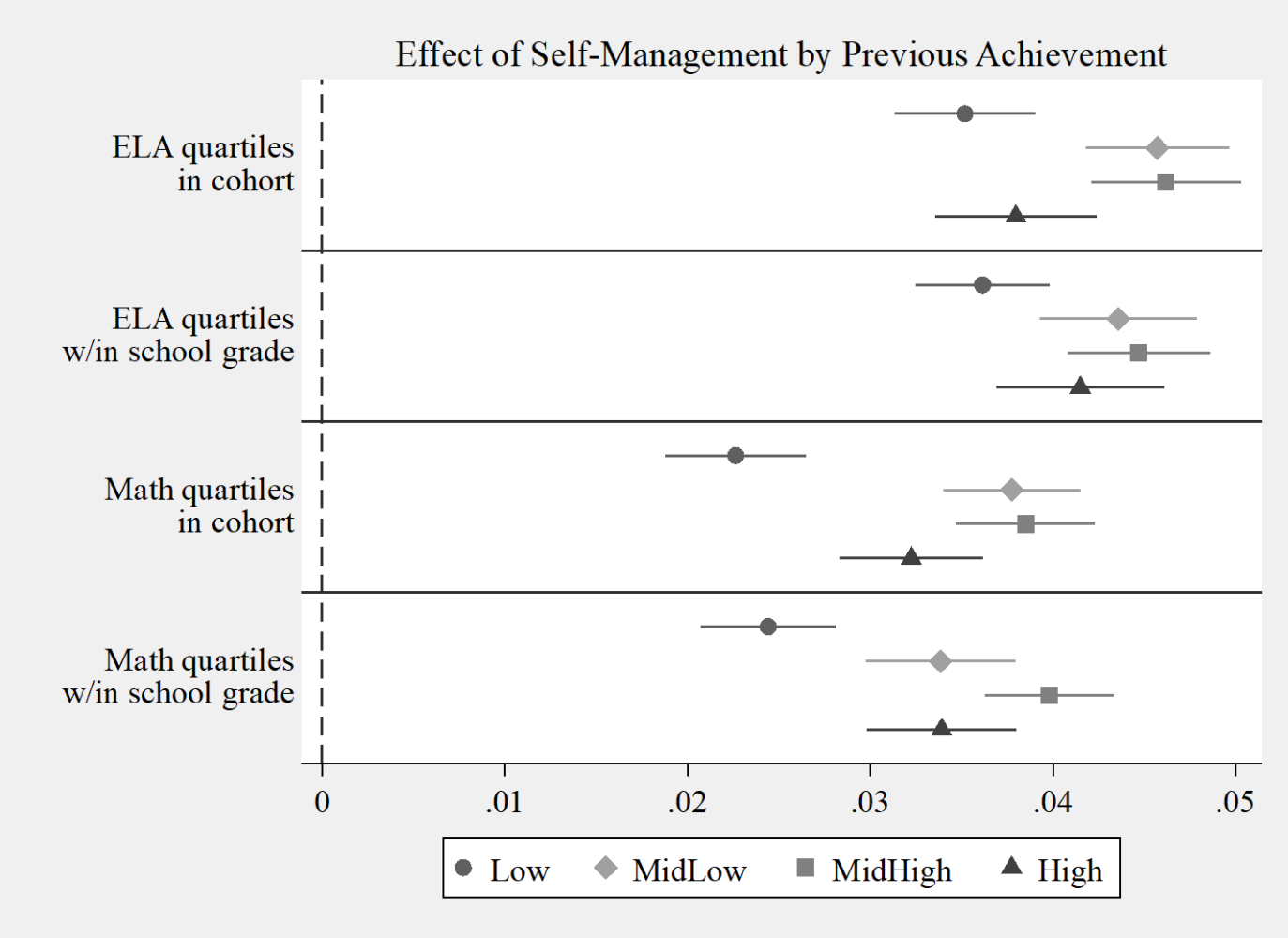
Self-management effects positive in all subgroups



Mindset effects higher at higher previous achievement



Self-management effects U-shape by previous achievement level



Conclusion

- Mindset and Self Management gaps for disadvantaged students
- Mindset predicts achievement gains in every grade and every subgroup, more in ELA and higher grades
- SM predicts achievement gains in every grade and every subgroup better than any other SEL measure from the CORE districts survey.
- Evidence of importance of measuring and monitoring these dimensions in school systems, and for schools to address them directly.
- Still open question: How can school systems promote these skills?

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Assessing Survey Satisficing: The Impact of Unmotivated Questionnaire Respondents on Data Quality

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November 6, 2019

Survey Satisficing: A CORE Challenge

- We care a lot about students social, motivational, self-regulatory development
- Surveys are (arguably) the best way to measure students on these dimensions
- Students are not tremendously motivated to engage their full effort in taking surveys
- Researchers (frequently) pretend like this problem doesn't exist

Survey Satisficing: How bad is it? Can we all start keeping track?

- 3 types of easily tracked satisficing:
  - Skipping items
  - Early termination
  - Straight-line responding

Survey Satisficing: CORE findings

- 3 types of satisficing: 30.36%
  - Skipping items: 24.99%
  - Early termination: 3.73%
  - Straight-line responding: 5.38%
- Straight-line responding = most impact on items
  - Most likely to straight-line on the far right: 46.02%
  - Significant (but small) impact on mean scores
- Males are more likely satisficers

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- Q & A

Can We Measure Classroom Supports for Social-Emotional Learning? Applying Value-Added Models to Student Surveys in the CORE Districts

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Background

- Social-emotional learning (SEL) is a critical component of student success for academic and life outcomes (Nagaoka et al., 2015)
- Educators can and do affect the development of SEL skills (Durlak et al., 2011; McCormick et al., 2015)
- Studies have identified measurable impacts of teachers on students' SEL (Blazar & Kraft, 2017; Kraft, 2017; Jackson, 2018)
- This paper aims to explore whether we can measure classroom-level impacts on students' self-reported SEL at a large scale

Research Questions

1. Controlling for any differences in prior SEL and academic achievement, can we detect **classroom-level impacts** on students' growth in SEL?
2. How **"big" or "small"** are those classroom effects?
3. Do classrooms with **high SEL growth** also have **high academic growth**?

Data

- Analysis Sample
  - ~44,000 5th grade students
    - 3,622 classrooms
    - 724 schools
    - 5 CORE Districts
  - 2015-16 pretest (4th grade), 2016-17 posttest (5th grade)
  - Limited to students linked to *one and only one* teacher in both math and ELA
    - ~7,000 students removed from linkage data due to being linked to multiple teachers

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Methods: Growth Model

- We estimate six separate models
- Each model predicts **one** of six student outcomes: math, ELA, growth mindset, self-efficacy, self-management, social awareness
- We control for last year's scores in all six outcomes, and student demographic characteristics
- We include classroom fixed effects

$$Y_{cikjt} = \xi_c + Y_{cikjt-1}\lambda_c + X_{ikjt}\beta_c + \alpha_{ckjt} + e_{cikjt}$$

Outcom we're predicting (Math, ELA, or SEL)

Intercept

st year's test scores (SEL, math, ELA)

Student's demographi characterist: (ELL, SWD, Econ. Disadv., Homelessness, Foster Care, Race/Ethnicity)

Estimate Classroom Impact

Error Term

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Results

- Controlling for any differences in prior SEL and academic achievement, can we detect **classroom-level impacts** on students' growth in SEL?

Goodness-of-fit for grade 5 classroom growth models

Outcome	Within-Classroom R^2
Math	0.70
ELA	0.68
Growth Mindset	0.19
Self-Efficacy	0.20
Self-Mgmt.	0.24
Social Awareness	0.16

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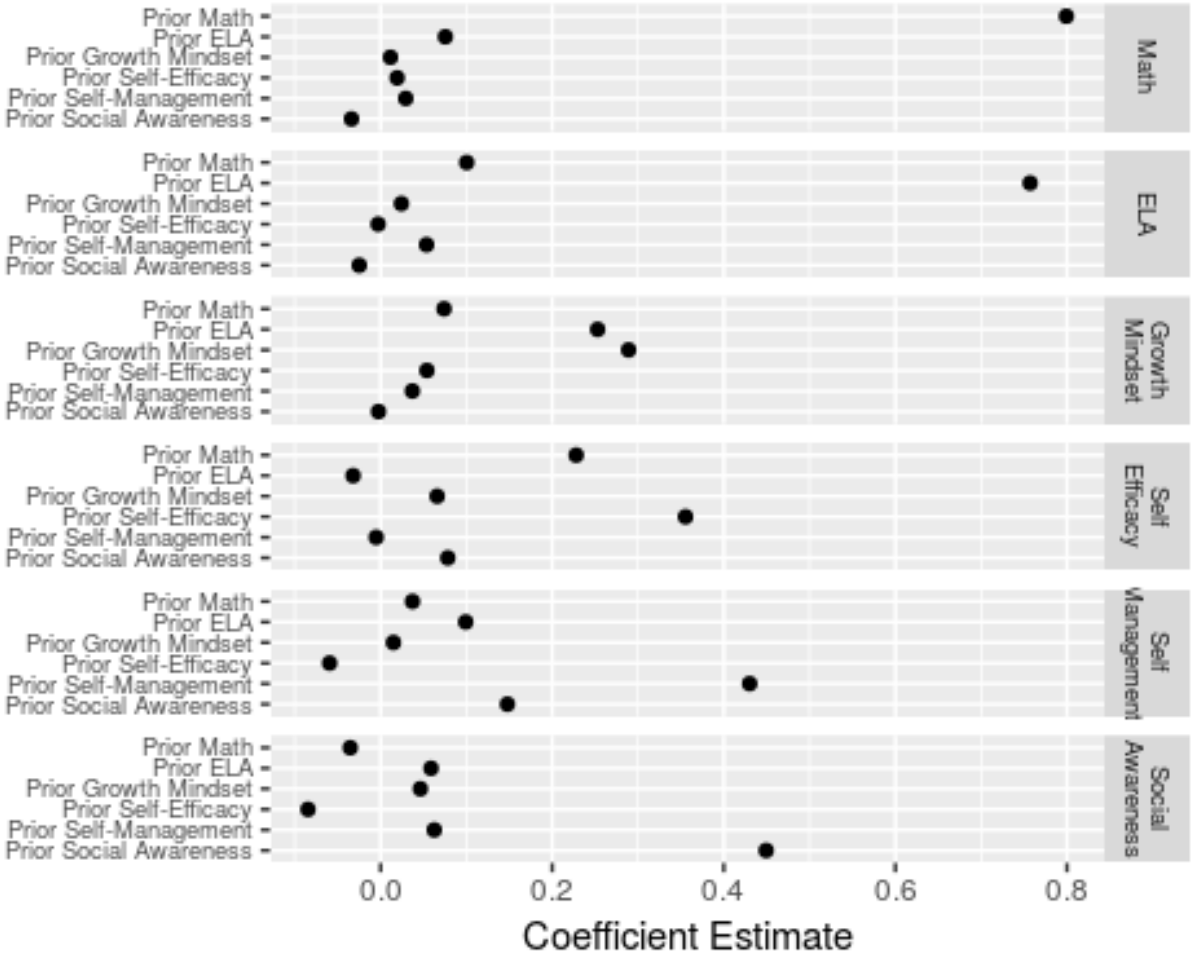
Results

Coefficient estimates from each model



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Results

- How **"big" or "small"** are those classroom effects?

Variance Explained at Each Level (And as %)

Outcome	Across-School	Across-Classroom-Within-School	Within-Classroom
Math	0.02 (7%)	0.05 (17%)	0.21 (77%)
ELA	0.01 (4%)	0.03 (10%)	0.24 (86%)
Growth Mindset	0.02 (3%)	0.07 (9%)	0.69 (88%)
Self-Efficacy	0.02 (2%)	0.05 (6%)	0.77 (92%)
Self-Mgmt.	0.01 (1%)	0.04 (5%)	0.74 (94%)
Social Aware.	0.02 (2%)	0.05 (5%)	0.82 (93%)

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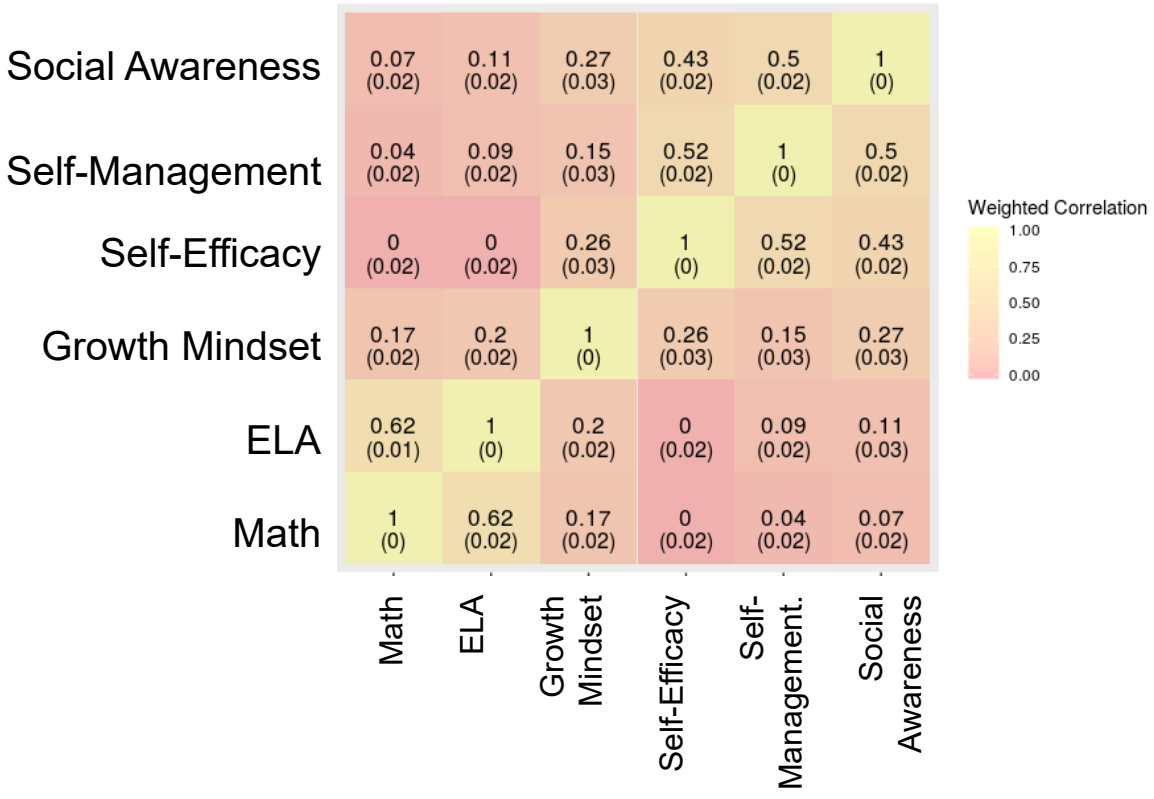
Results

- Do classrooms with **high SEL growth** also have **high academic growth**?

Weighted Correlations Between Classroom Effects



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Conclusions

- We estimated standard deviations ranging from:
  - 0.10-0.14 for the SEL measures at the **school** level
  - 0.26-0.30 at the **school-plus-classroom** level
  - 0.20-0.26 at the **classroom level** after accounting for school-level effects
- Classrooms with high academic growth are not necessarily the same as classrooms with high SEL growth (and vice versa)

Conclusions

- Findings align with recent studies quantifying classroom-level impacts on non-cognitive measures (Blazar & Kraft, 2017; Blazar, 2018; Jackson, 2018; Jennings & DiPrete, 2010; Ruzek et al., 2015)
- This paper builds upon these prior studies by establishing the across-classroom-within-school variance of the CORE SEL survey measures administered to nearly ½ million students since 2014

Future Research

- Expand to other grades and potentially more complex student-teacher links
- Assess the degree to which the SEL growth measured here persists from year to year
- Examine alternative approaches for correcting for measurement error in the SEL surveys (e.g., finite sample approaches)
- Over time, examine how classroom impacts on SEL in CORE districts predicts long-term outcomes

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