

Too Much (or Too Little) Confidence?:

Calibration of Self-Efficacy and Achievement by Race and Socioeconomic Status



Amanda R. Butz, John M. Kugar, Katie E. Pyne, Taylor L. Willett,
Allie C. Goodnight, Ciara H. Thompson, & Ellen L. Usher
University of Kentucky



P20 MOTIVATION & LEARNING LAB

A Kentucky P20 Innovation Lab

Do you know this student?



Overconfident, but
low achieving



... or like this?



Overconfident, but
low achieving



Underconfident, but
high achieving



These are **poorly-calibrated** students



Overconfident, but low achieving



Underconfident, but high achieving



What we know...

- “Large misjudgments of personal efficacy in either direction have consequences.” (Bandura, 1986, p. 394)

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- “Large misjudgments of personal efficacy in either direction have consequences.” (Bandura, 1986, p. 394)
- Little is known about the effects of miscalibration. (Schunk & Pajares, 2002)
- Learners from historically underperforming groups (e.g., ethnic minority students) may be particularly prone to miscalibration. (Aronson & Inzlicht, 2004; Graham, 1994)

Research Questions

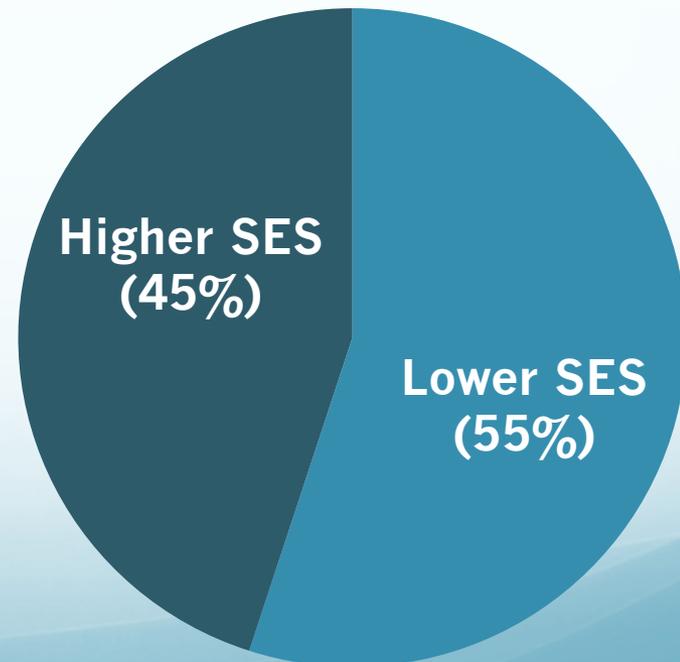
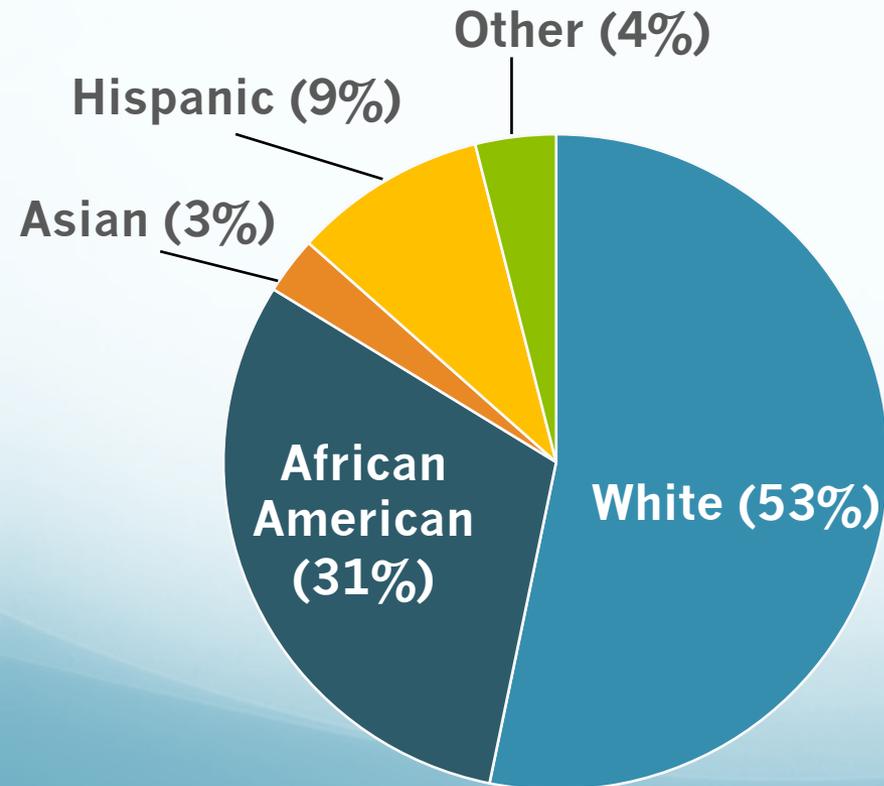
RQ 1: Does mathematics self-efficacy (general and skills) differ by race and SES?

RQ 2: Does mathematics achievement (general and skills) differ by race and SES?

RQ 3: How calibrated are students' efficacy beliefs to their achievement in each racial and SES group?

Participants

- $N = 2,922$ students in Grades 4-8



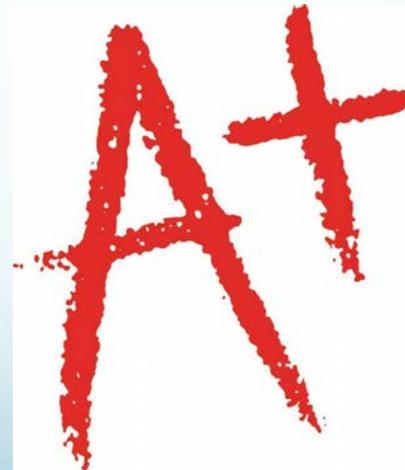
Measures

- Math Self-Efficacy
 - **General Self-Efficacy (7 items)**
How confident are you that you can learn math?
 - **Skills Self-Efficacy (24 items)**
How confident are you that you can do multiplication with two-digit numbers?



Measures

- Math General Self-Efficacy
- Math Skills Self-Efficacy
- **Achievement scores**
 - First quarter report card grades
 - Percentile score on norm-referenced math test



Analyses

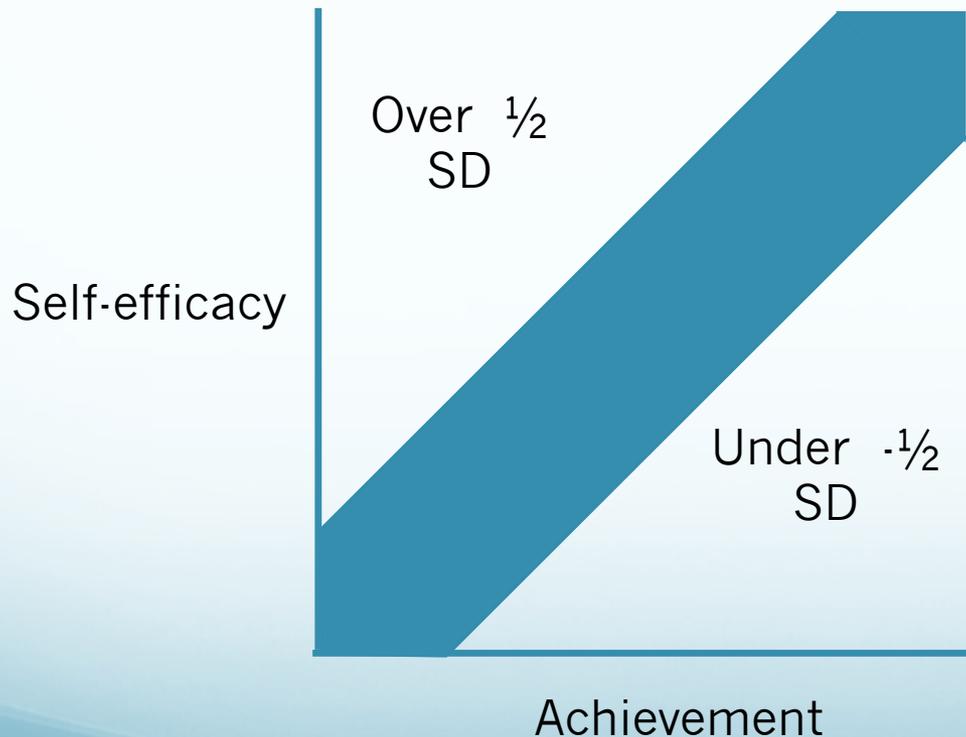
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- **ANOVA (Race, SES, and Race X SES)**

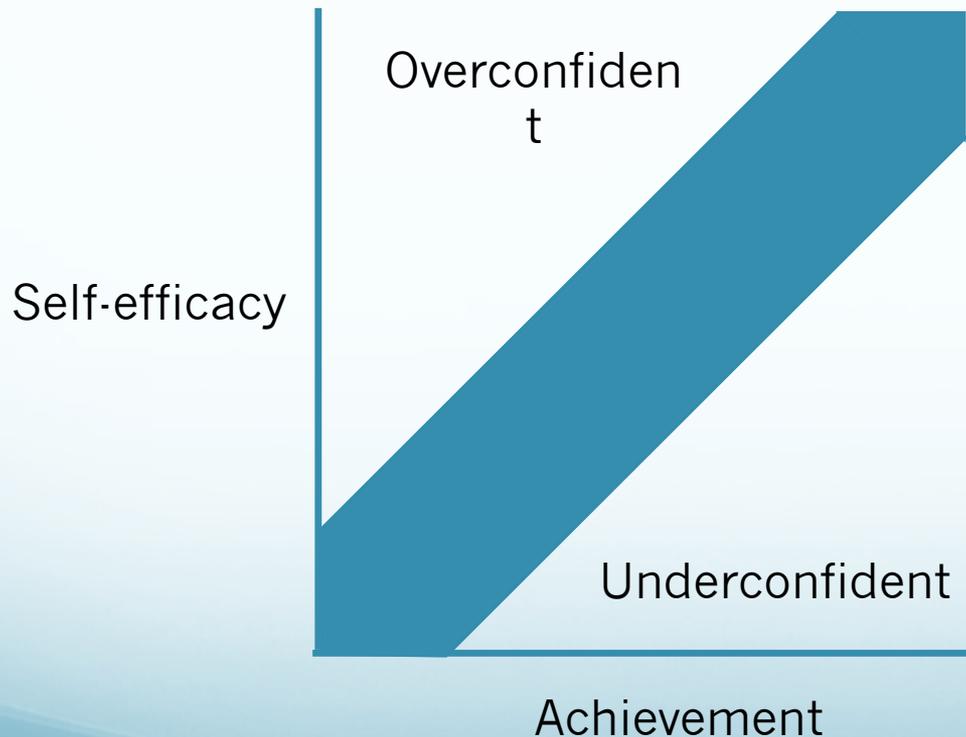
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- RQ 3:** How calibrated are students' efficacy beliefs to their achievement in each racial and SES group?
- Miscalibration was determined in two ways:
 - Math general self-efficacy and report card grades
 - Math skills self-efficacy and norm-referenced math test

Results

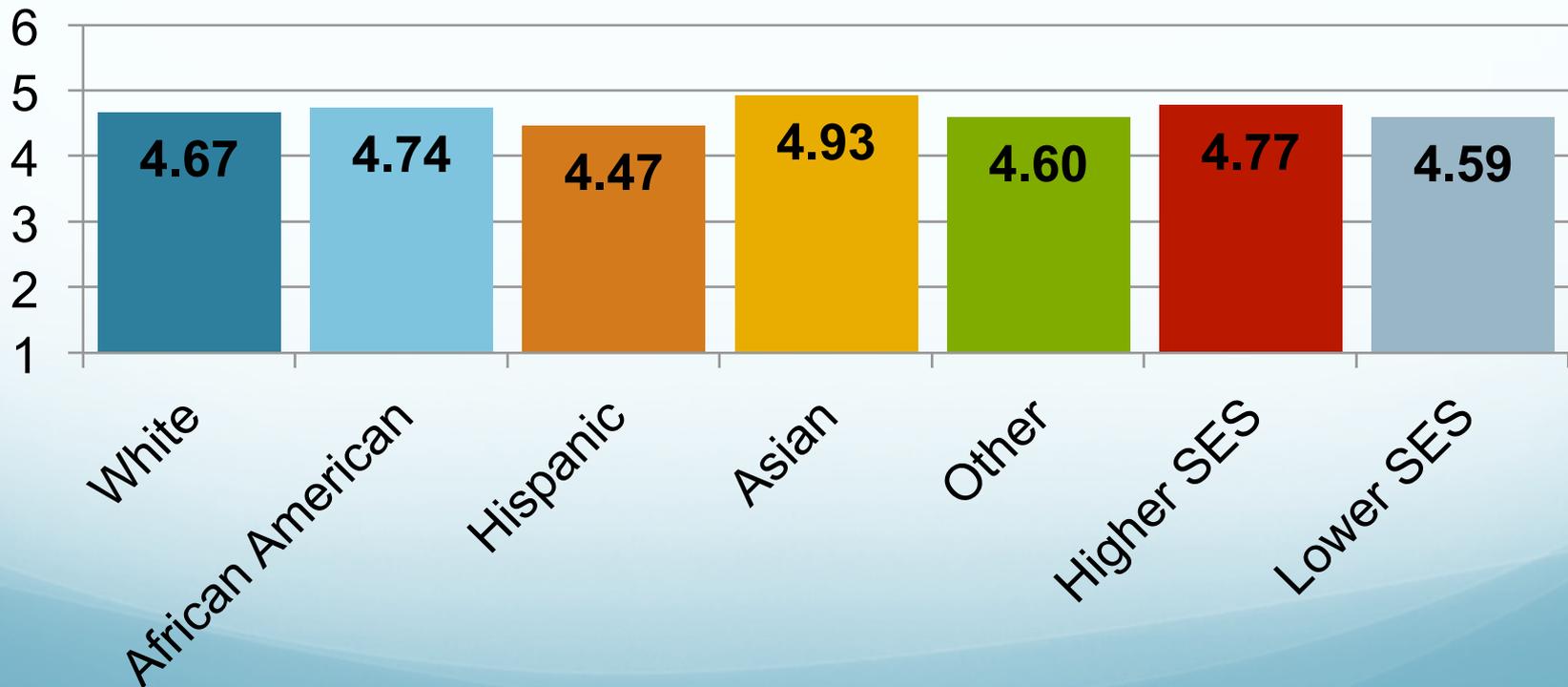
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- **Yes**, skills self-efficacy and general self-efficacy differ for students of different racial and SES groups.

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General Math Self-Efficacy



RQ 1: Does **mathematics self-efficacy** differ by ethnicity and SES?

- **Yes**, skills self-efficacy and general self-efficacy differ for students of different racial and SES groups.
- For math skills self-efficacy, the interaction of race and SES was significant.

RQ 2: Does **mathematics achievement** differ by ethnicity and SES?

- **Yes**, math report card grades and scores on the norm-referenced test differ for students of different racial and SES groups.

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- **Yes**, math report card grades and scores on the norm-referenced test differ for students of different racial and SES groups.
- Math report card grades differed as a function of the interaction of Race and SES
- Norm-referenced math test scores differed as a function of the interaction of Race and SES

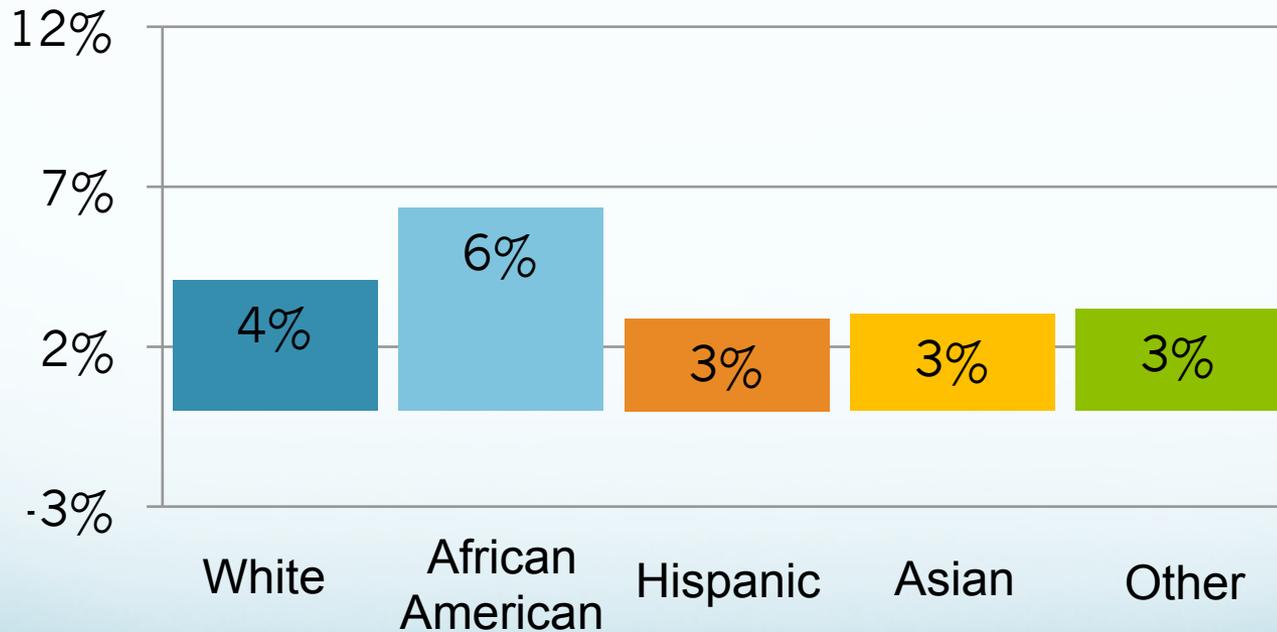
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General Self-Efficacy and Report Card Grades

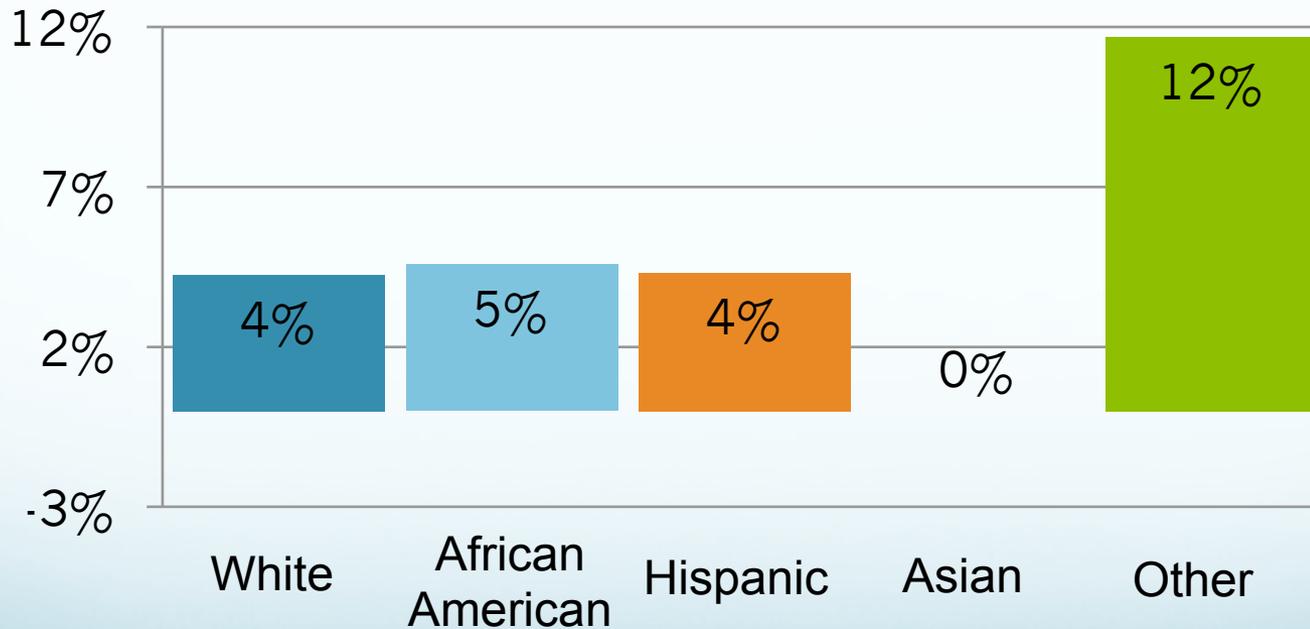
Overconfident



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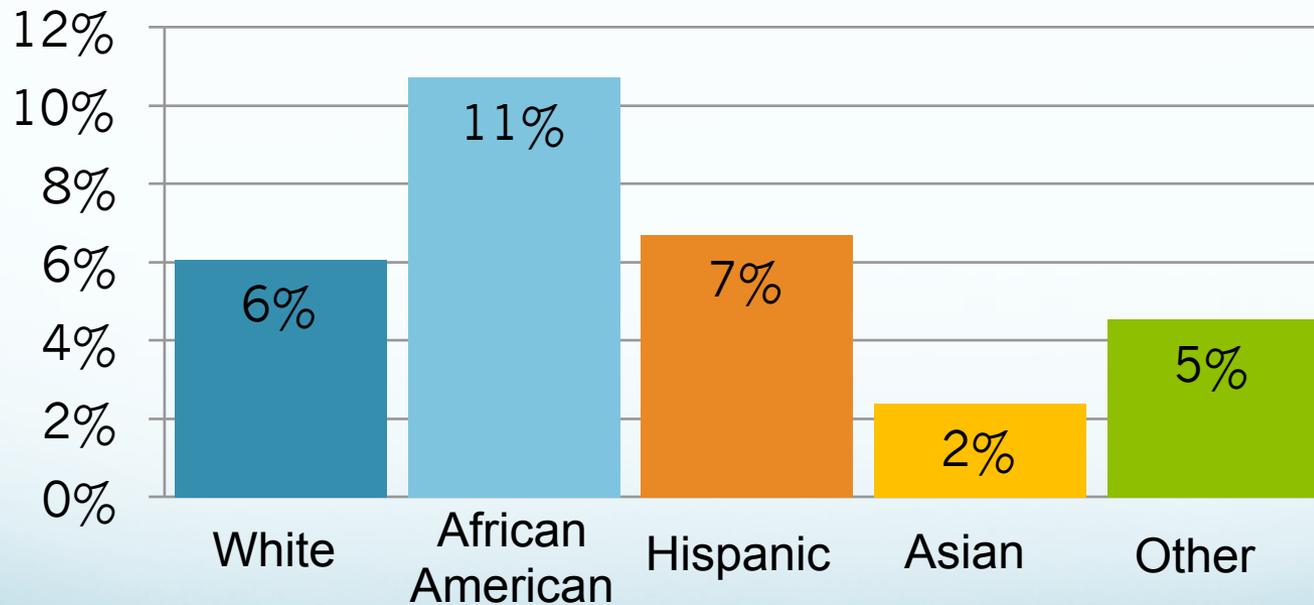
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RQ 3: Who is poorly calibrated?

Math Skills Self-Efficacy and Norm-Referenced Math Test

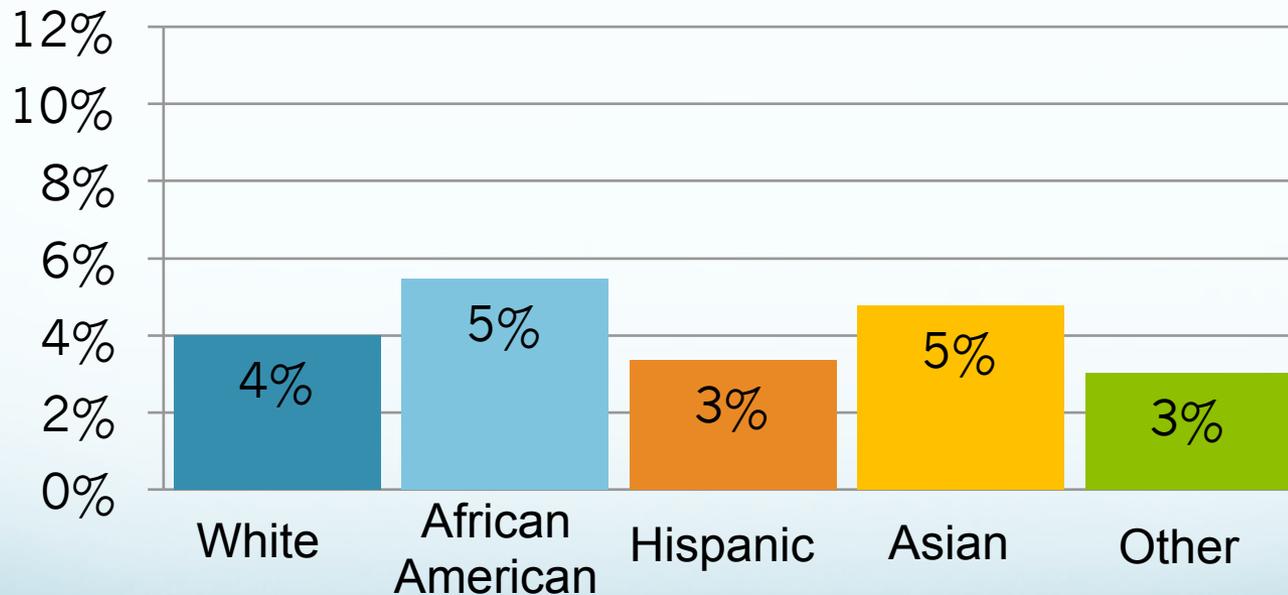
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Math Skills Self-Efficacy and Norm-Referenced Math Test

Underconfident



Key Findings & Discussion



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- Miscalibration between self-efficacy and achievement was most pronounced with norm-referenced math tests.



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- Miscalibration between self-efficacy and achievement was most pronounced with norm-referenced math tests.
- African American students were classified as overconfident in higher proportions than students in other racial categories.



Questions?



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Thank you!