

Faculty Mindset Beliefs and Student Motivation

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Mindset Theory

Personal beliefs about the malleability or fixedness of ability and talent

1. Fixed Mindset:

- Abilities are fixed and can't be changed

Either you have what it takes or you don't

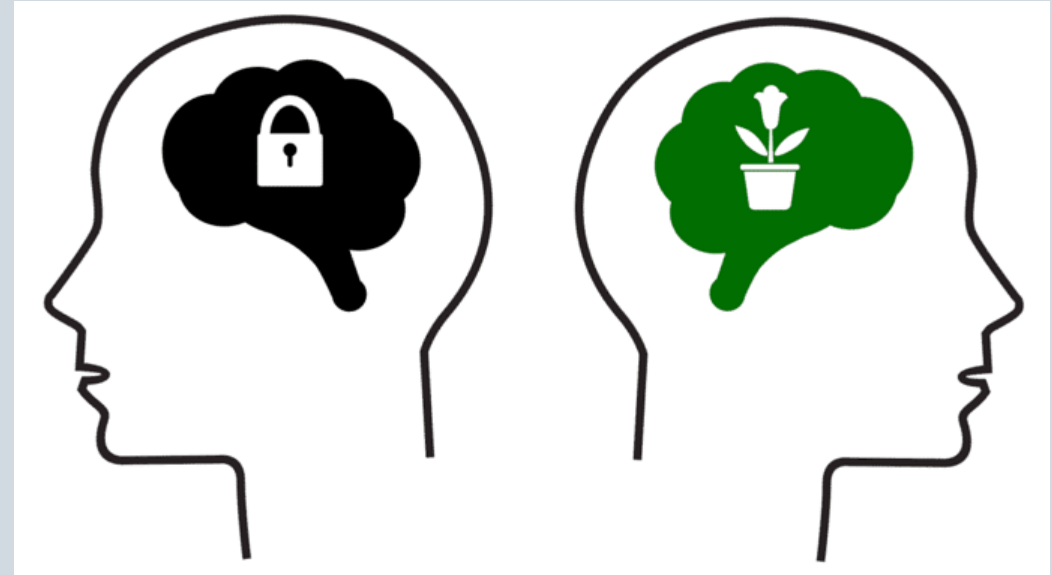
2. Growth Mindset:

- Abilities are malleable
- Abilities can improve with effort, learning, and good strategies

Mindset Theory

Endorsing fixed mindset beliefs leads to...

- Decreased engagement
- Decreased persistence
- Decreased performance



Personal Beliefs and Consequences

Personal mindset
beliefs



Individual
Consequences



Mindset Beliefs and Consequences

Mindset beliefs of
faculty



Social Consequences



Fixed Mindset Beliefs

When students endorse fixed mindset beliefs:

- only affects *individual* outcomes

When faculty endorse fixed mindset beliefs:

- demotivating for *everyone* in the context
- triggers stereotype threat among *stigmatized groups*

Stereotype threat:

Risk of confirming a negative stereotype about one's group leads to lower performance

Faculty Mindset Behaviors

Professors with a Fixed Mindset:


Place less emphasis on learning and development

Encourage struggling students to drop difficult courses

Comfort students for their poor performance (e.g., “it’s ok—not everyone is meant to pursue a career in math”)



Culture of Stereotype Threat



Does my professor think I can do this?

Is my professor stereotyping me?

Faculty with a fixed mindset may create a culture of stereotype threat.

Fixed Mindset:

majority group > stigmatized groups

Growth Mindset:

majority group \cong stigmatized groups

Research: Faculty Mindset Beliefs

Faculty Mindset Beliefs

150 STEM faculty self-reported their mindset beliefs:

Two items, adapted from Dweck (1999), $\alpha = .91$

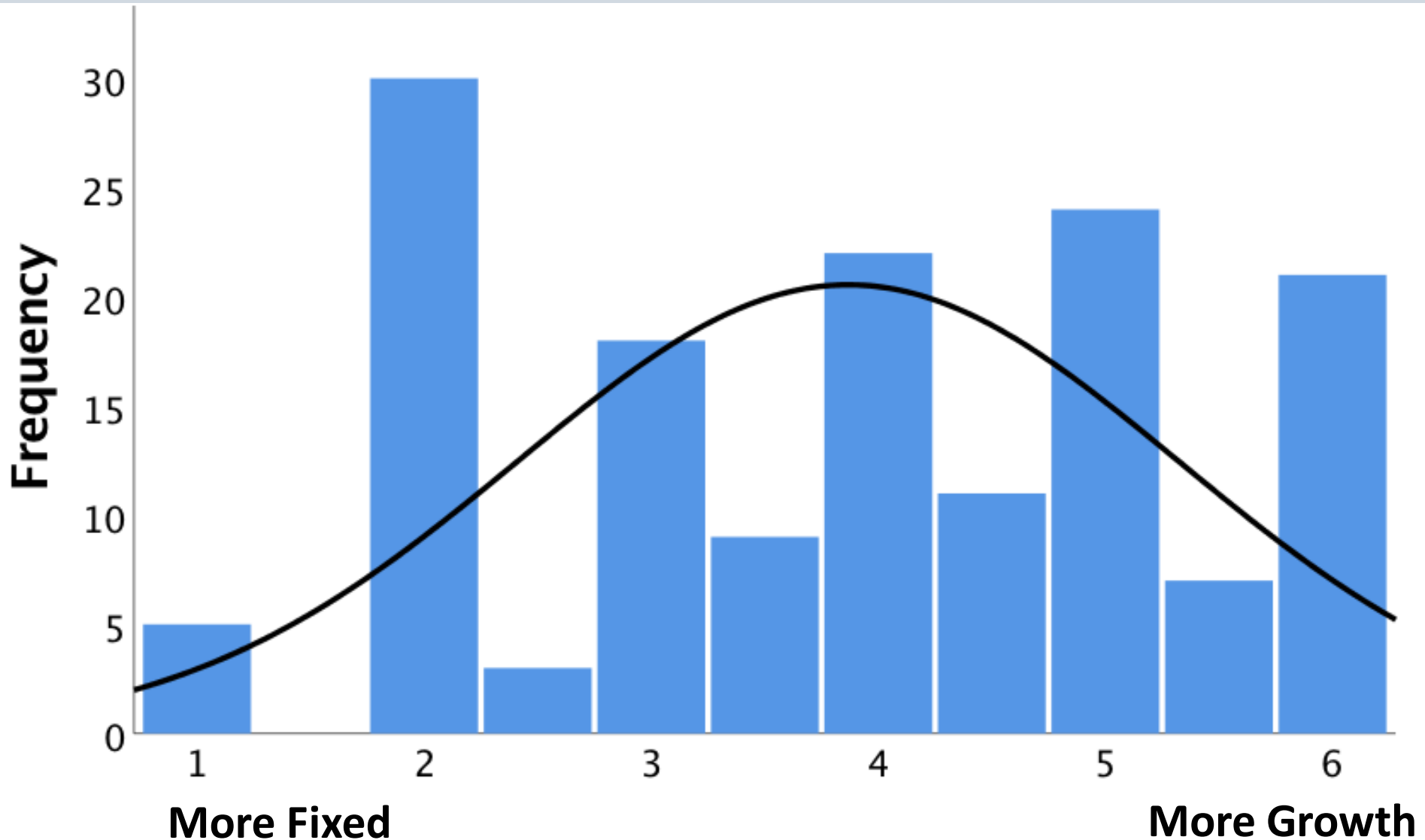
- E.g., “To be honest, students have a certain amount of intelligence, and they really can't do much to change it.”

Self-reported Faculty Mindset Distribution

4.7%

URM

(Black, Hispanic,
Native American)

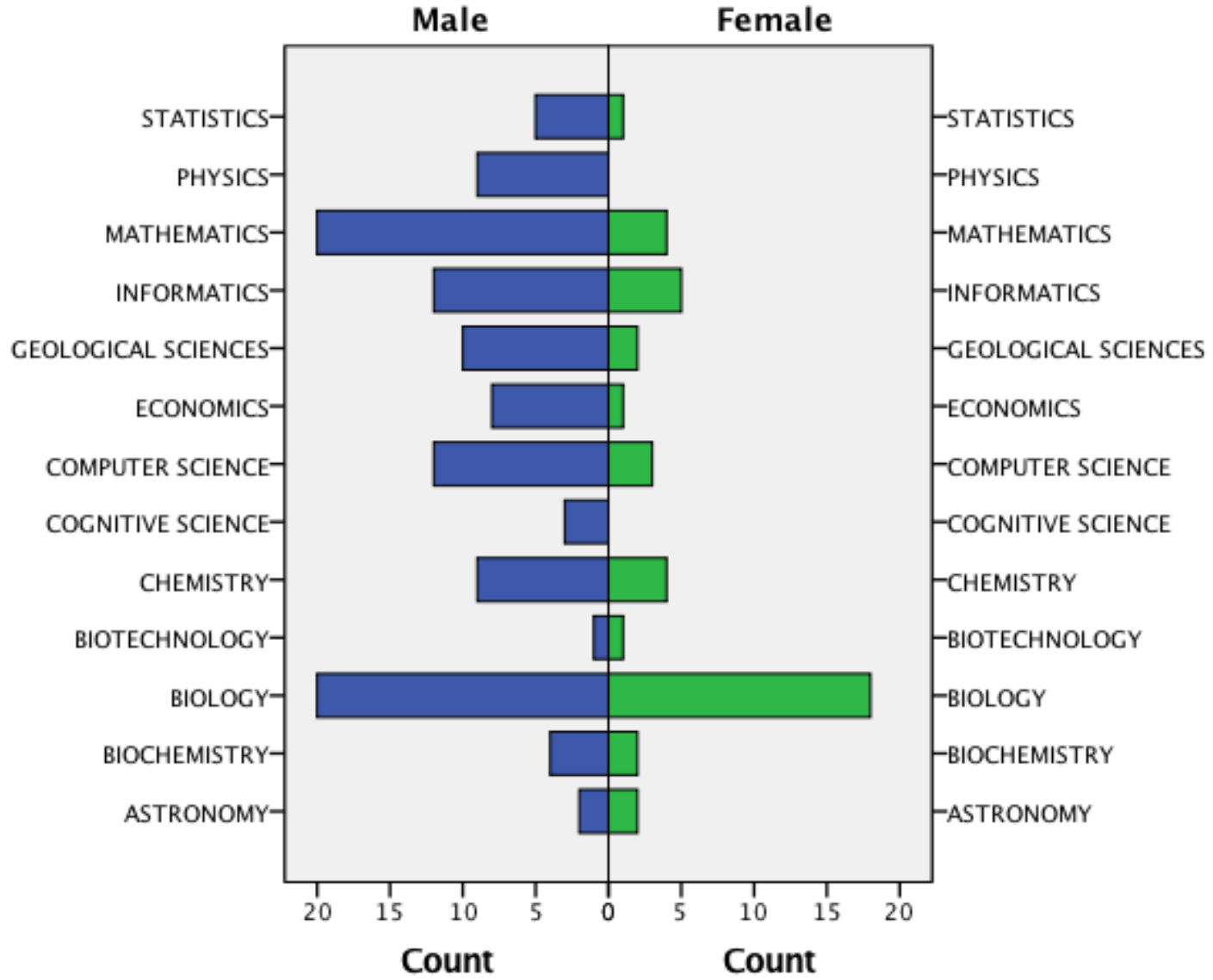


26.7%

Female

STEM Departments

4.7%
URM
(Black, Hispanic,
Native American)



26.7%
Female

Student Sample

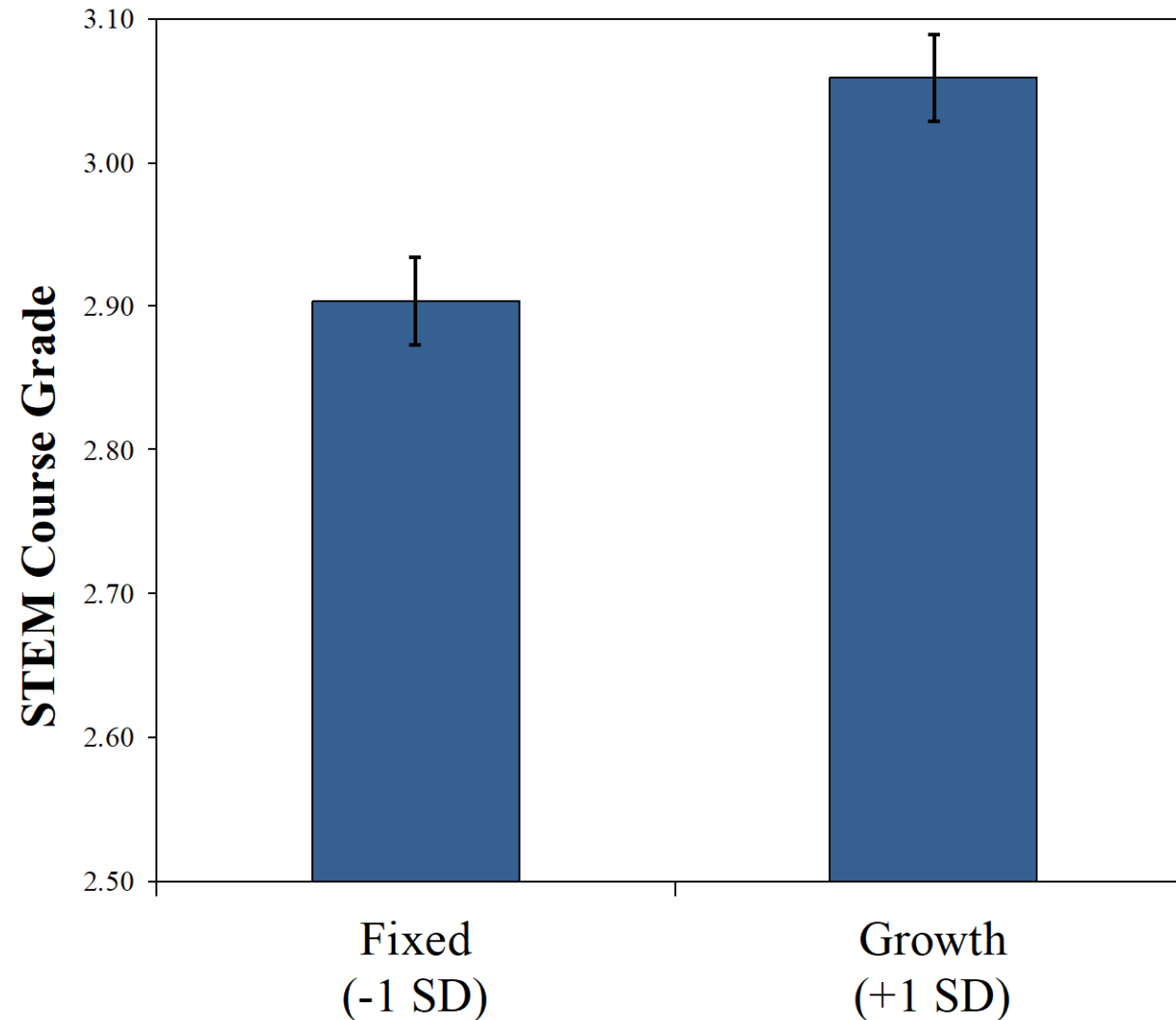
We obtained course grades for every student these faculty (N=150) taught over two years (7 semesters).

634 STEM Courses

15,466 undergraduate students

- 46.2% female,
- 11% URM (Black, Hispanic, Native American)
- 14.7% first-generation

Students perform worse in classes taught by faculty who endorse fixed (vs. growth) mindset beliefs

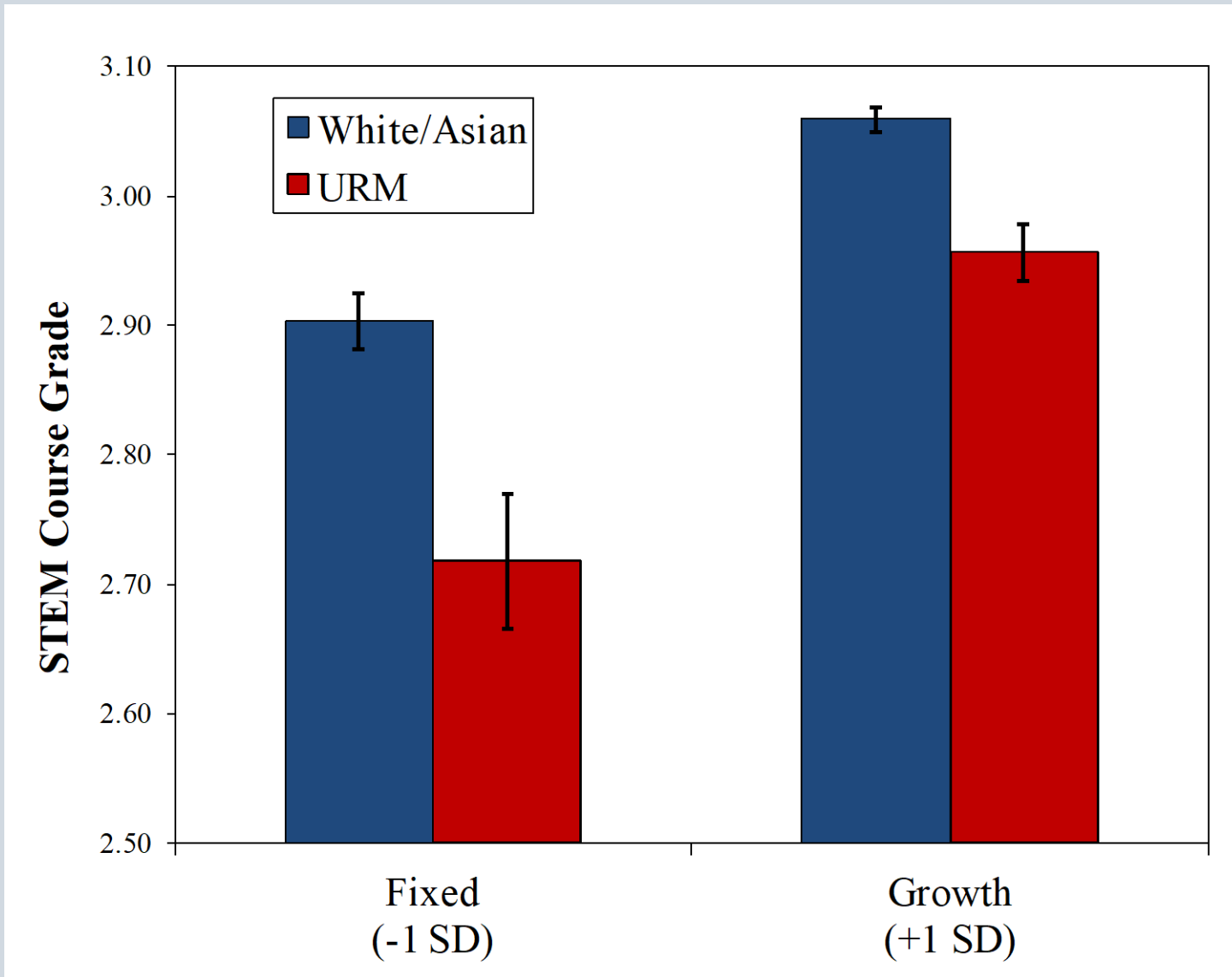


Main effect:

$b = .08, p = .011$

Error Bars = +/- 1 SE

The racial achievement gap is twice as large in STEM courses taught by faculty who endorse fixed (vs. growth) mindset beliefs



Interaction:

$b = .04, p = .041$

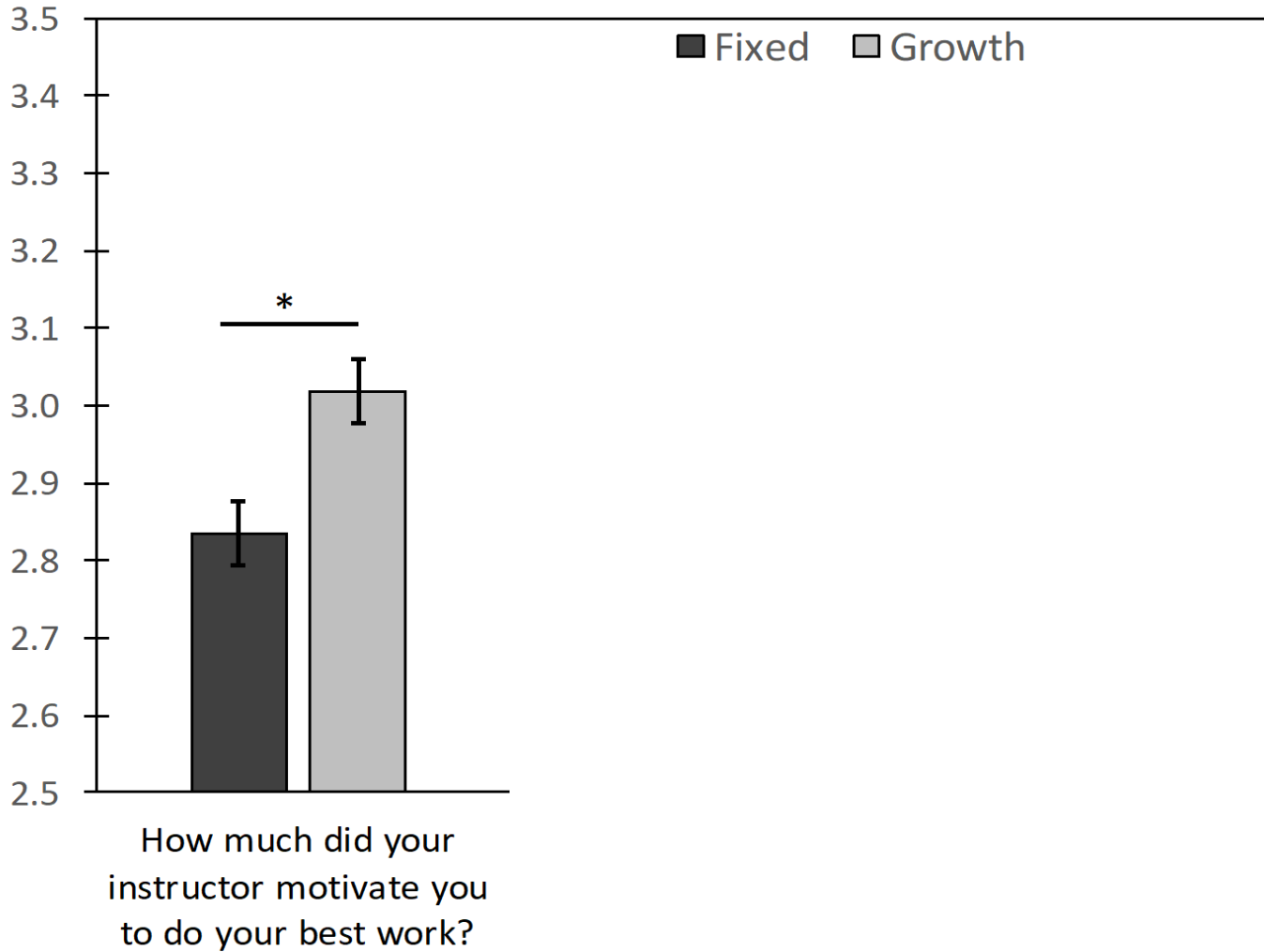
Error Bars = +/- 1 SE

Do students experience the classes differently?

We obtained **average course evaluations** for all courses taught by the faculty members in our sample (four semesters, $N = 634$ courses).

Student-level evaluations were not available due to confidentiality constraints.

Course Evaluations: Classroom Culture

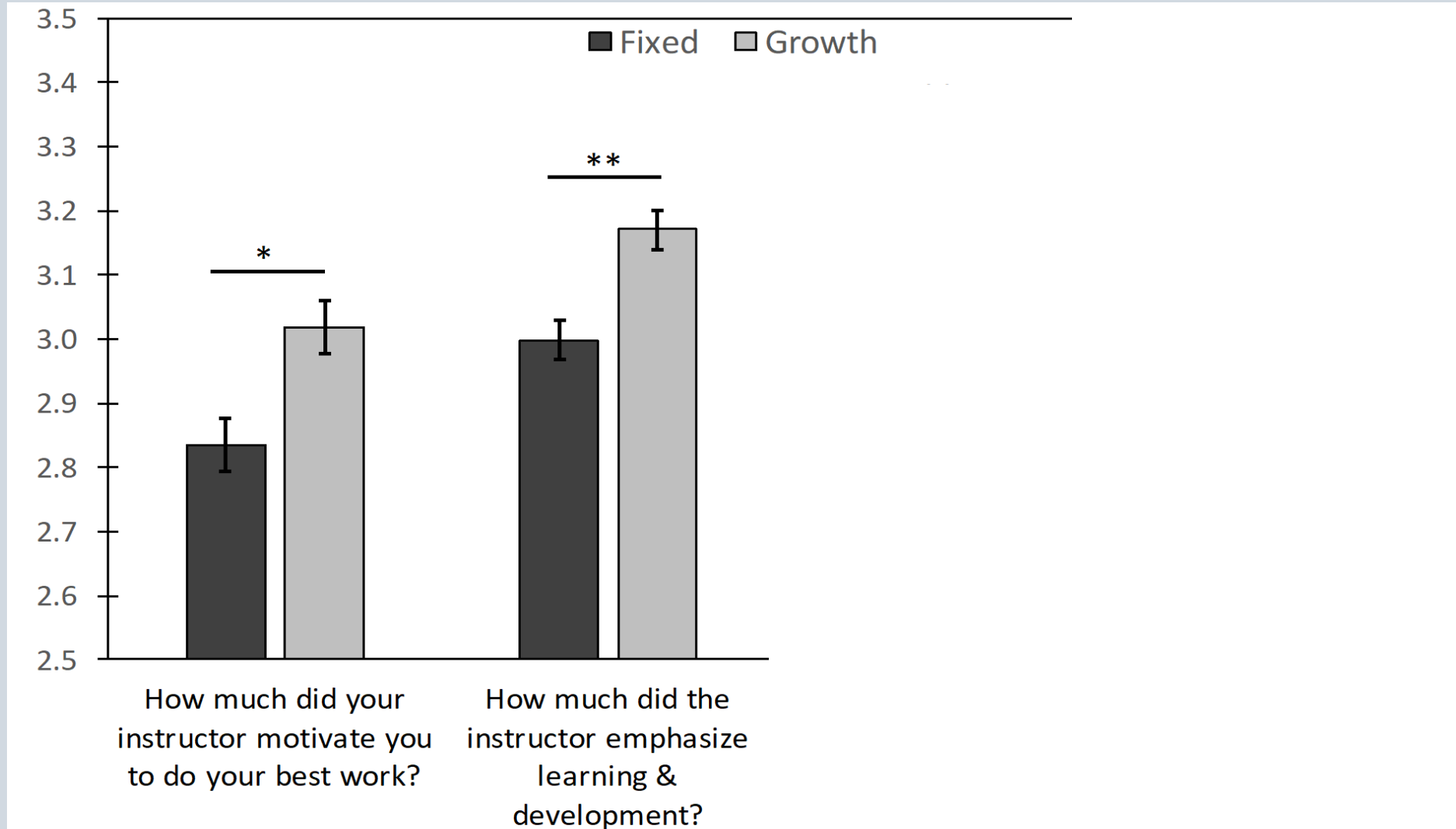


Scale: 1-5

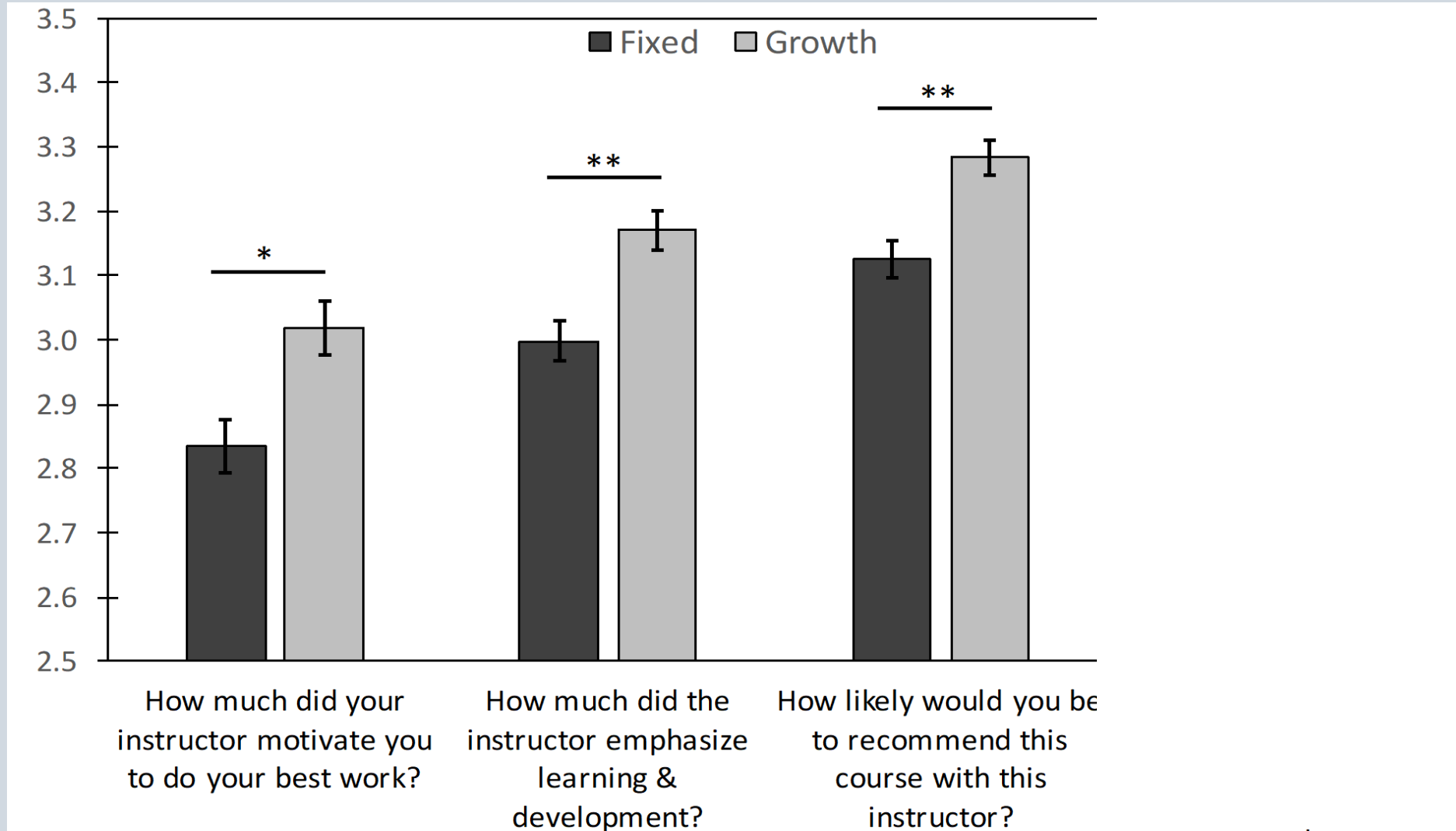
* $p < .05$

** $p < .01$

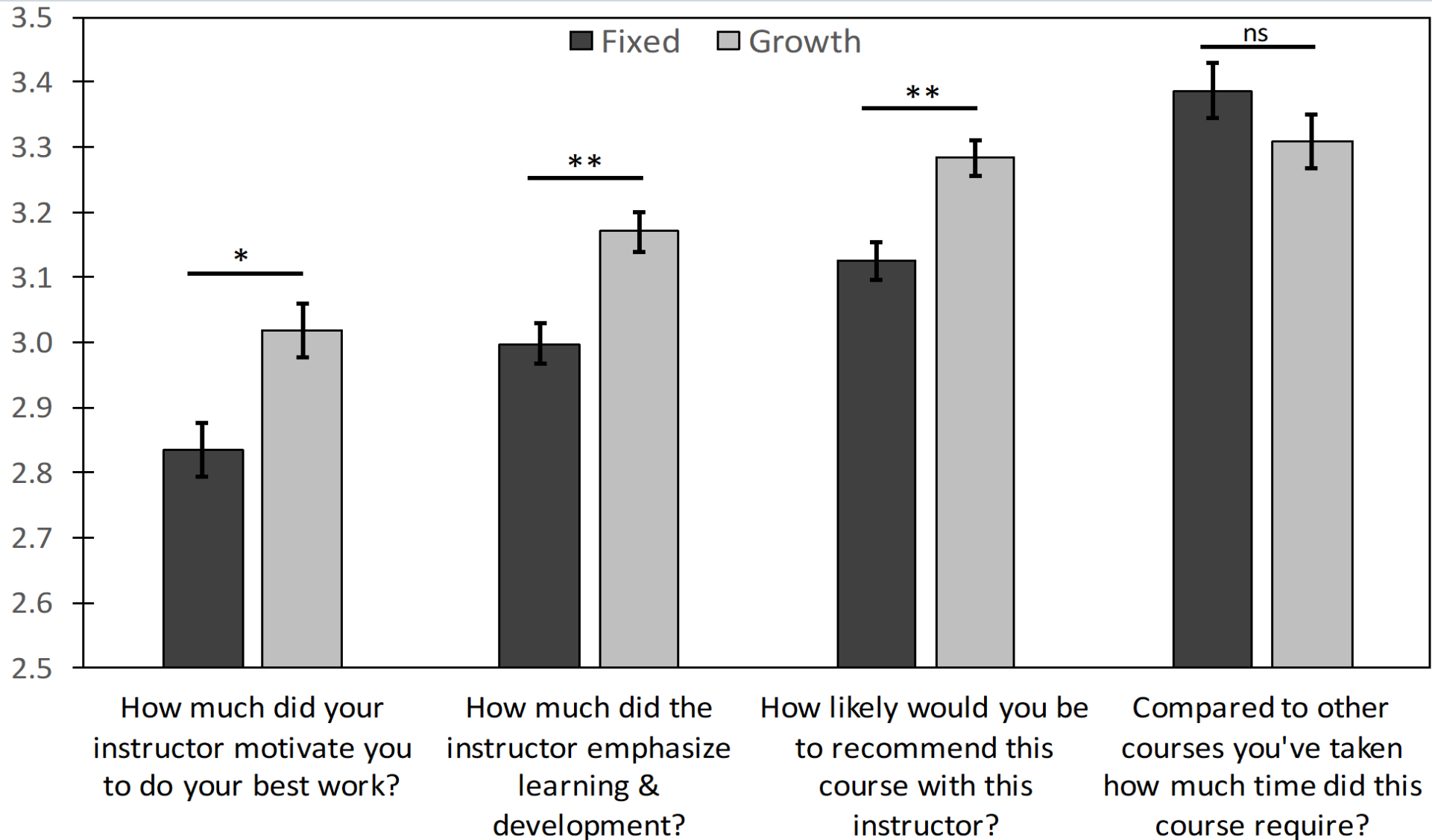
Course Evaluations: Classroom Culture



Course Evaluations: Classroom Culture



Course Evaluations: Classroom Culture



Scale: 1-5

* $p < .05$

** $p < .01$

Summary

Mindset beliefs of faculty have *social consequences*, impacting everyone in the classroom—particularly those who are stigmatized.



Practical Steps

What can educators do?

- **Incentivize learning and development rather than raw ability and performance.**
 - Provide multiple opportunities to demonstrate learning over time
 - Partial credit for showing *process* vs. end result
- **Limit language and policies that identify those believed to be naturally talented.**
 - Reward improvement
 - Reward challenging oneself

What can educators do? (cont.)

- **Cultivate a culture centered on developing and improving people's abilities.**
 - Mistakes are learning opportunities, not something to avoid at all costs
- **State your mindset beliefs on your syllabus and throughout your course:**

“I believe that every student can improve their skills, learn from their mistakes, and be successful in this course.”

What can educators do? (Cont.)

- **Performance Feedback**

“The first exam grades are now posted. Remember that learning is a process and often occurs over time. I believe that every student can improve their skills, learn from their mistakes, and be successful in this course. Attending office hours is the best way to deepen your understanding of the material and a great opportunity to improve your skills before the next exam.”

Thank you!

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