

Mindsets: Helping Students To Fulfill Their Potential

SCOPE

February 24, 2014

Learner or Non-learner?

“I don’t divide the world into the weak and the strong, or the successes and the failures... I divide the world into the learners and non-learners.”



-- Benjamin Barber

You don't see unmotivated
babies!







Yet many of the things we do
are turning them into non-
learners.

How do we make sure our
students remain learners?

Mindsets Matter

Fixed Mindset: Intelligence is a fixed trait

Growth Mindset: Intelligence can be developed

Mindsets Matter

- Which mindset is correct?
- Are mindsets all or nothing?
- Can mindsets be changed?

Brain Plasticity



Alfred Binet



Mindsets Matter

- Which mindset is correct?
- Do students hold the same mindset in different areas?
- Can mindsets be changed?

How Do Mindsets Work?

Mindset Rule #1

Fixed Mindset:

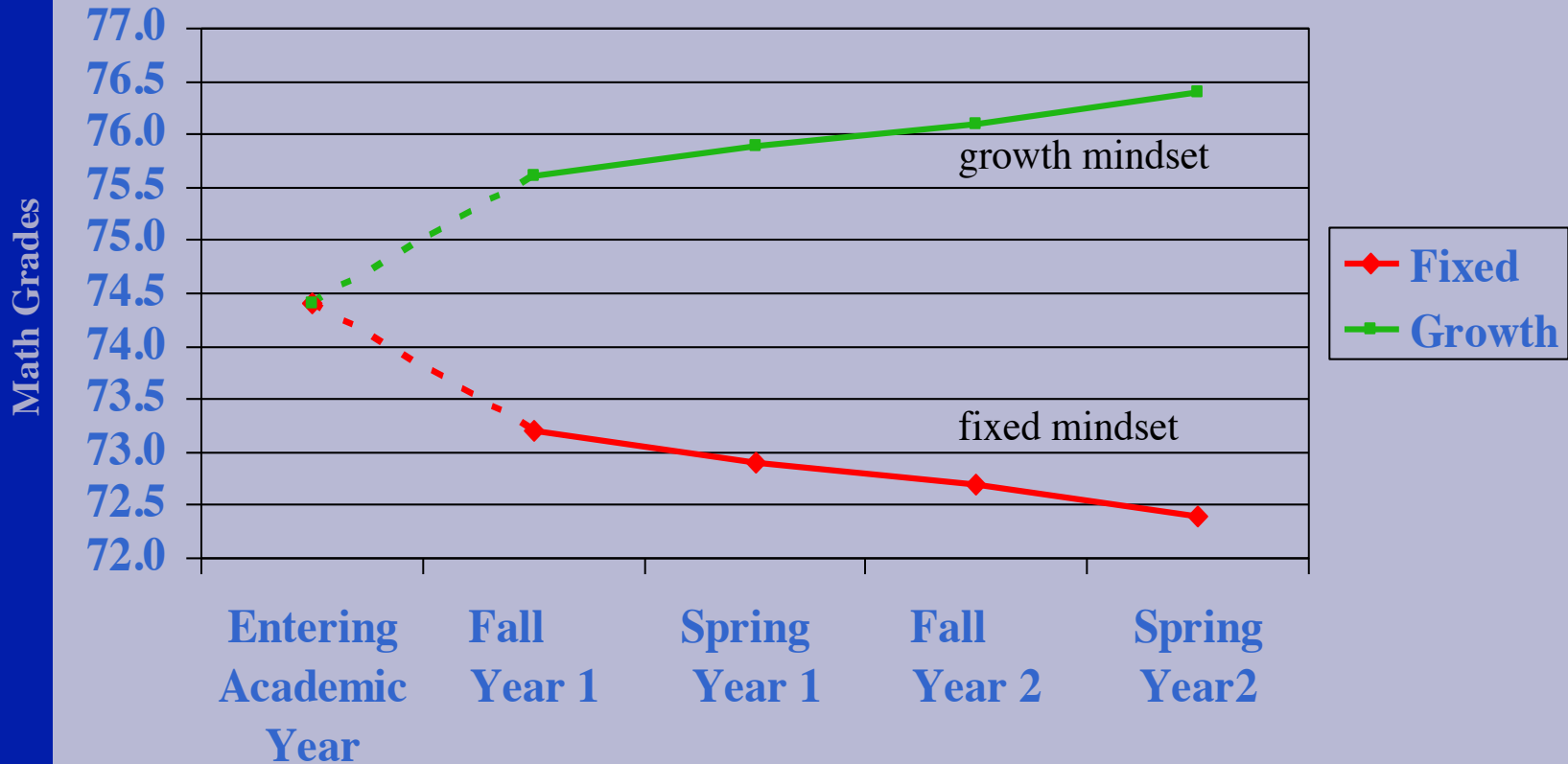
LOOK SMART AT ALL COSTS

Growth Mindset:

LEARN AT ALL COSTS

Achievement in Junior HS

Blackwell, Dweck, & Trzesniewski (2007)

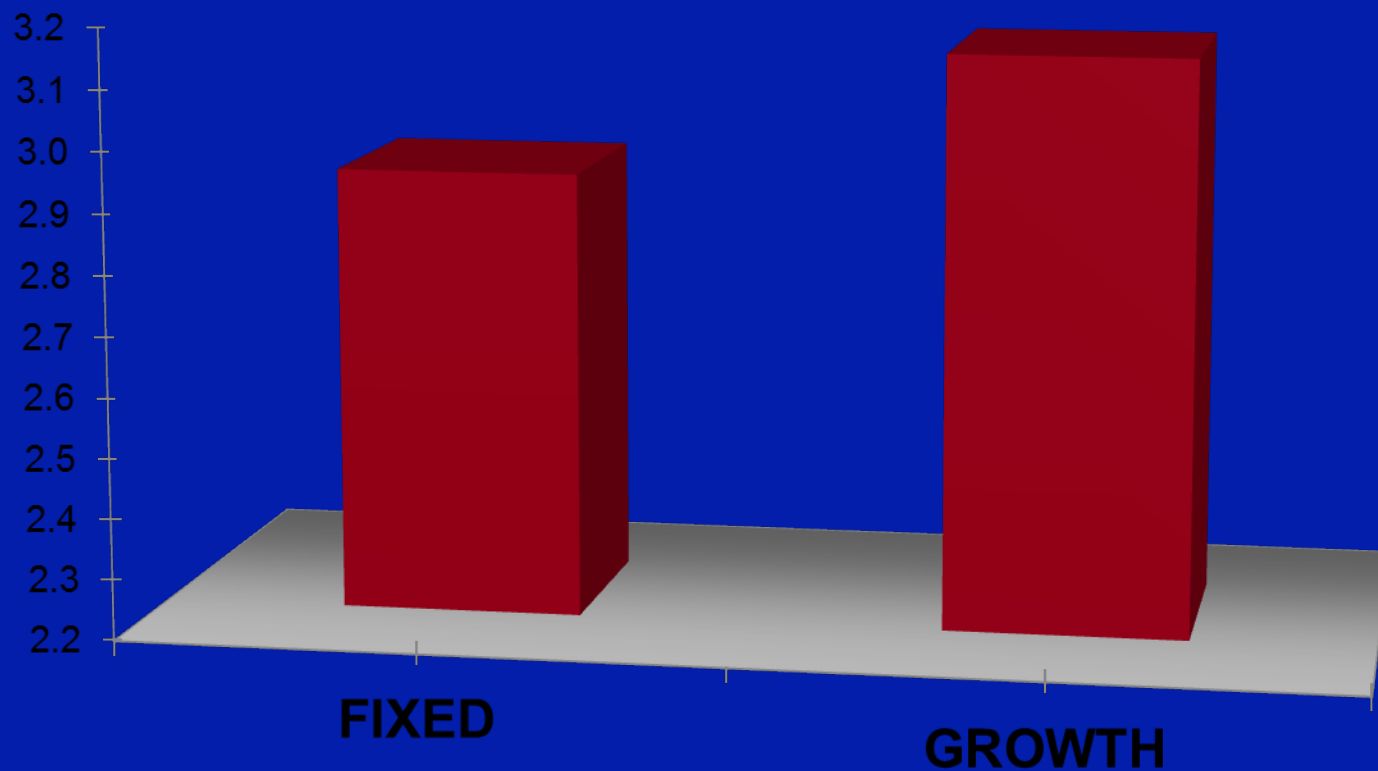


Pre-Medical Students

Grant & Dweck, 2003



Organic Chemistry Grades




Mindset Rule #2

Fixed Mindset:

IT SHOULD COME NATURALLY

Growth Mindset:

WORK HARD, EFFORT IS KEY

A cartoon illustration of Homer Simpson from 'The Simpsons'. He is shown from the chest up, wearing his signature white short-sleeved polo shirt. He has a wide-eyed, slightly crazed expression with his mouth open as if speaking. His right hand is raised, pointing his index finger directly at the viewer. The background is a simple gradient of orange and brown. A speech bubble is positioned to the left of his head, containing the text 'Trying is the first step towards failure.' In the bottom left corner of the illustration, the name 'MATT GROENING' is written in a simple, hand-drawn font.

Trying is
the first step
towards failure.

MATT
GROENING

Mindset Rule #2

Fixed Mindset:

IT SHOULD COME NATURALLY

Growth Mindset:

WORK HARD, EFFORT IS KEY

Mindset Rule #3

In the face of setbacks...

Fixed Mindset: It's about me

HIDE MISTAKES & DEFICIENCIES

Growth Mindset: It's about learning

CONFRONT MISTAKES
& DEFICIENCIES

After Setback

Fixed Mindset:

“I’d spend less time on this subject from now on.”

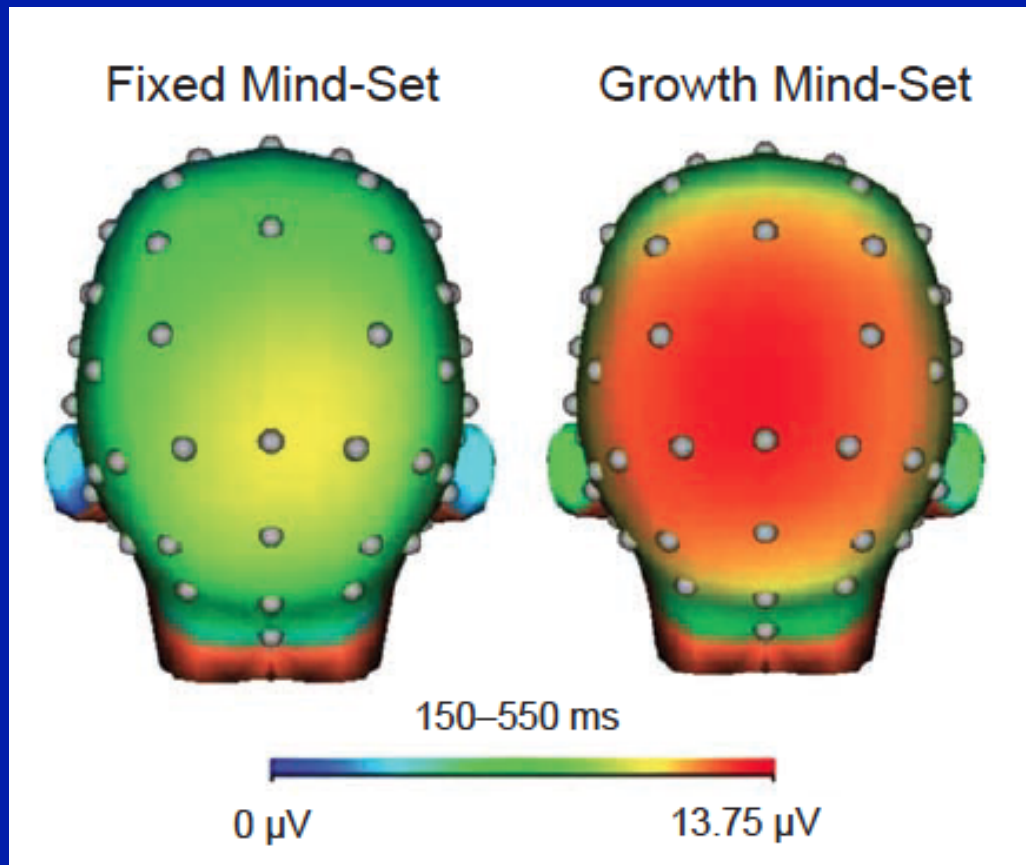
“I would try to cheat on the next test.”

Growth Mindset:

“I would work harder in this class from now on.”

“I would spend more time studying for the tests.”

Moser et al., 2011



Mindset Rules

Fixed Mindset

1. Never look dumb
2. Don't work hard
3. Run from difficulty

Growth Mindset

1. Learn
2. Work hard to learn
3. Learn from mistakes

Where Do Mindsets Come From?

...and what can educators do?

Mueller & Dweck, 1998; Kamins & Dweck, 1999; Cimpian, Arce, Markman, & Dweck, 2007; Gunderson et al., 2013.

Praise

Kids

Messages About What We Value

- **Intelligence Praise:** “Wow, that’s a really good score. You must be smart at this.”
- **Process Praise:** “Wow, that’s a really good score. You must have tried really hard.”
- **Control Group:** : “Wow, that’s a really good score.”

Intelligence vs. Process Praise

- Mindset: Fixed vs. Growth
- Goals: Looking smart vs. Learning

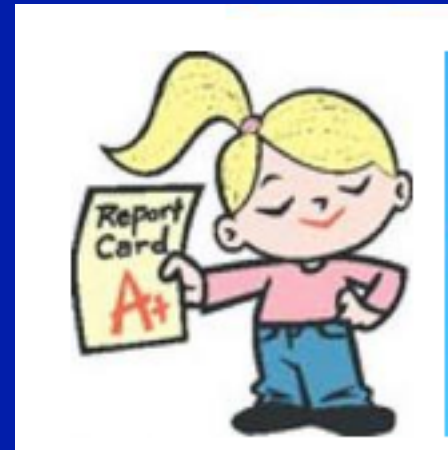
After Difficult Trial:

- Confidence/ Enjoyment/Performance

What to Praise

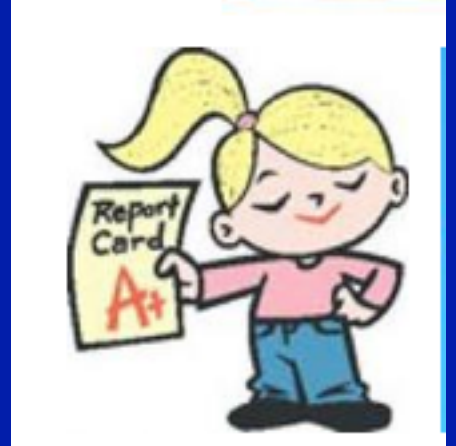
- Effort, struggle, persistence despite setbacks, but not just effort...
- Strategies, choices
- Choosing difficult tasks
- Learning, improving

Yesterday' Praise:



- Look, you got an A without
- really working. You're really good at math!
- You did that so quickly and easily. That's impressive!

Tomorrow



- You got an A without working. An A is nice, but you must not be learning much.
- You did that so quickly and easily. I'm sorry I wasted your time. Let's do something you can learn from.

Growth Mindset Encouragement

- Khan Academy online learning
- $N = 265,082$
- Encouragement delivered in units on fractions
- Lesson: Exhortation to effort does not equal growth mindset training

Conditions

No Headers

No Statements at top of page (Khan Academy default)

Control
Statements

General Encouragement

Some of these problems are hard. Just do your best.
If at first you don't succeed, try again.

Intervention

Growth Mindset

Remember, the more you practice the smarter you become!
When you learn a new kind of math problem, you grow your math
brain!

Adding fractions



Remember, the more you practice the smarter you become!

$$\frac{7}{10} + \frac{6}{12} = ?$$



Answer

Acceptable formats

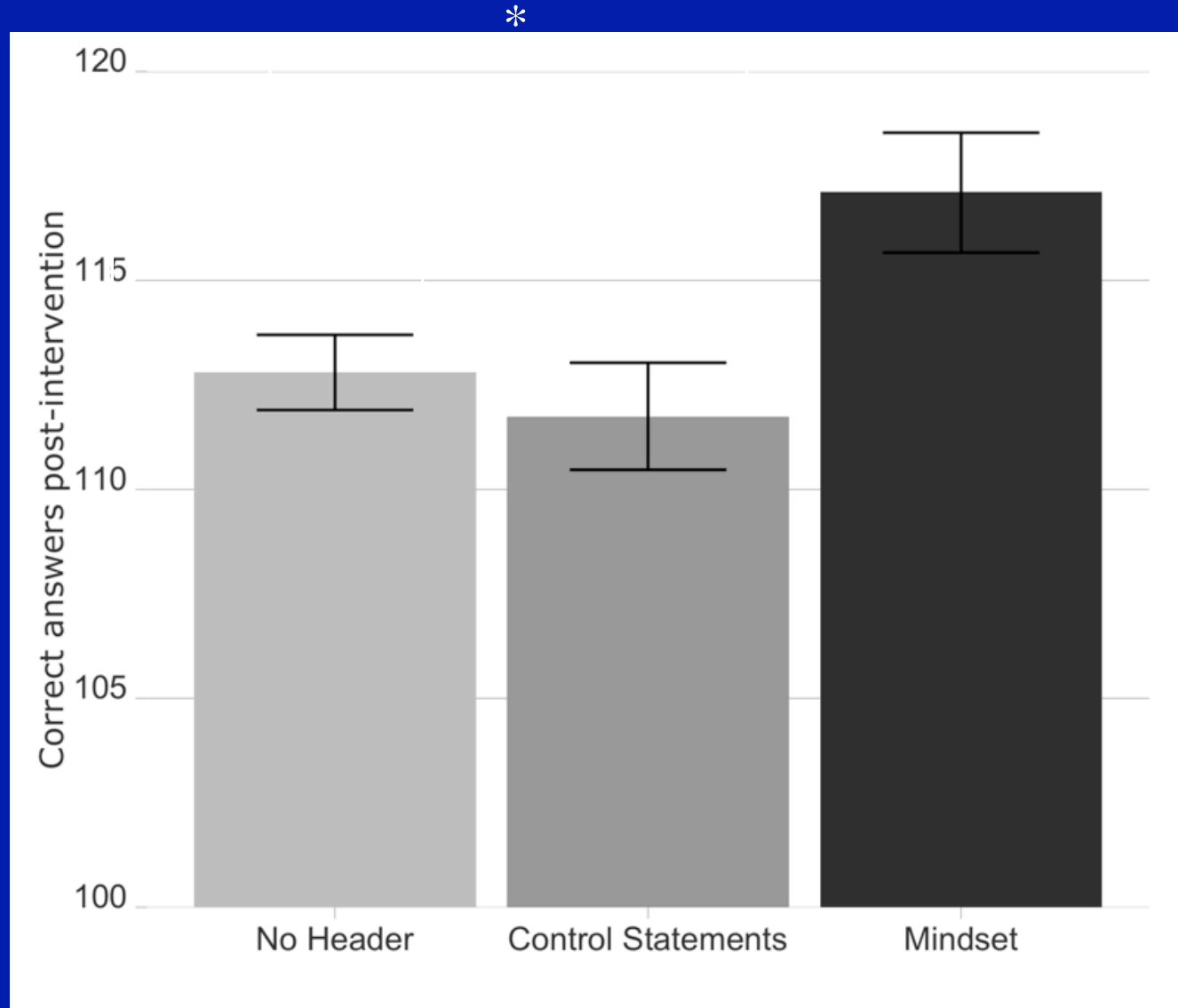
Check Answer

Need help?

I'd like a hint

Review film

Correct Answers Post-Treatment





...yet

The Power of Yet

- I'm not good at _____...
- I can't do _____...
- I tried but it didn't work...

Changing Mindsets

What else can educators do?

A Mindset Workshop

- **Growth Mindset Group:** 8 sessions of study skills + the growth mindset.
- **Control Group:** 8 sessions of great study skills.

You Can Grow Your Intelligence

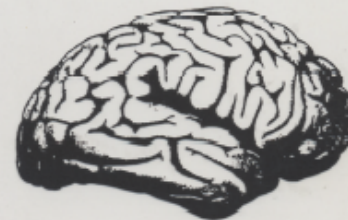
*New Research Shows the Brain
Can Be Developed Like a Muscle*

Many people think of the brain as a mystery. They don't know much about intelligence and how it works. When they do think about what intelligence is, many people believe that a person is born either smart, average, or dumb—and stays that way for life.

But new research shows that the brain is more like a muscle—it changes and gets stronger when you use it. And scientists have been able to show just how the brain grows and gets stronger when you learn.

Everyone knows that when you lift weights, your muscles get bigger and you get stronger. A person who can't lift 20 pounds when they start exercising can get strong enough to lift 100 pounds after working out for a long time. That's because the muscles become larger and stronger with exercise. And when you stop exercising, the muscles shrink and you get weaker. That's why people say "Use it or lose it!"

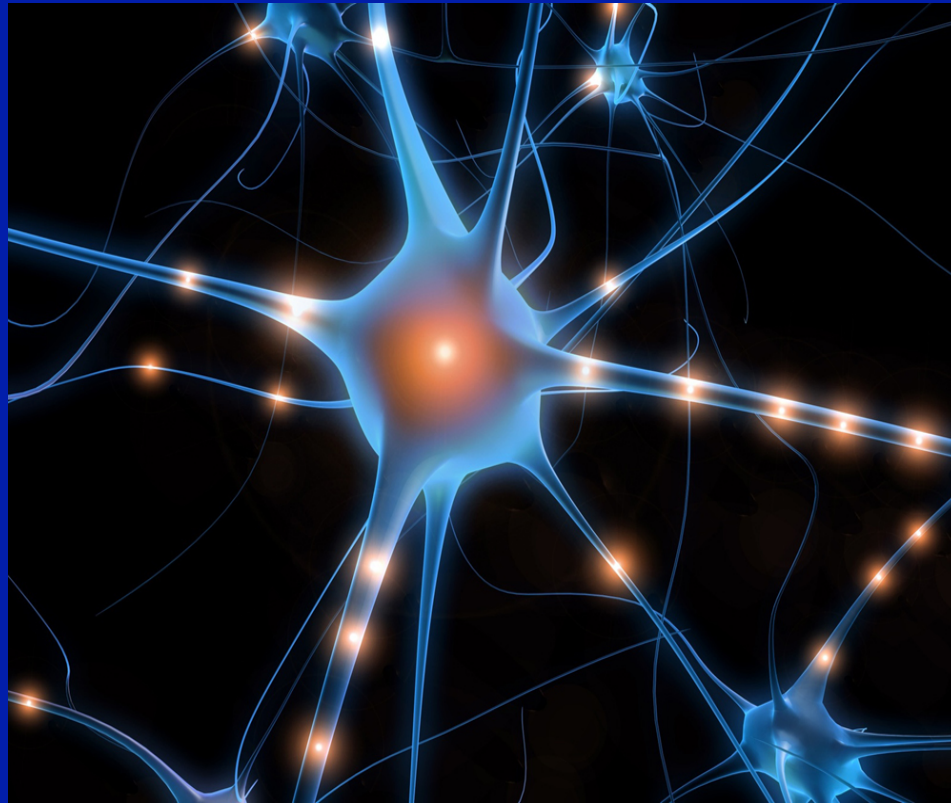
But most people don't know that when they practice and learn new things, parts of their brain change and get larger a lot like muscles do when they exercise.



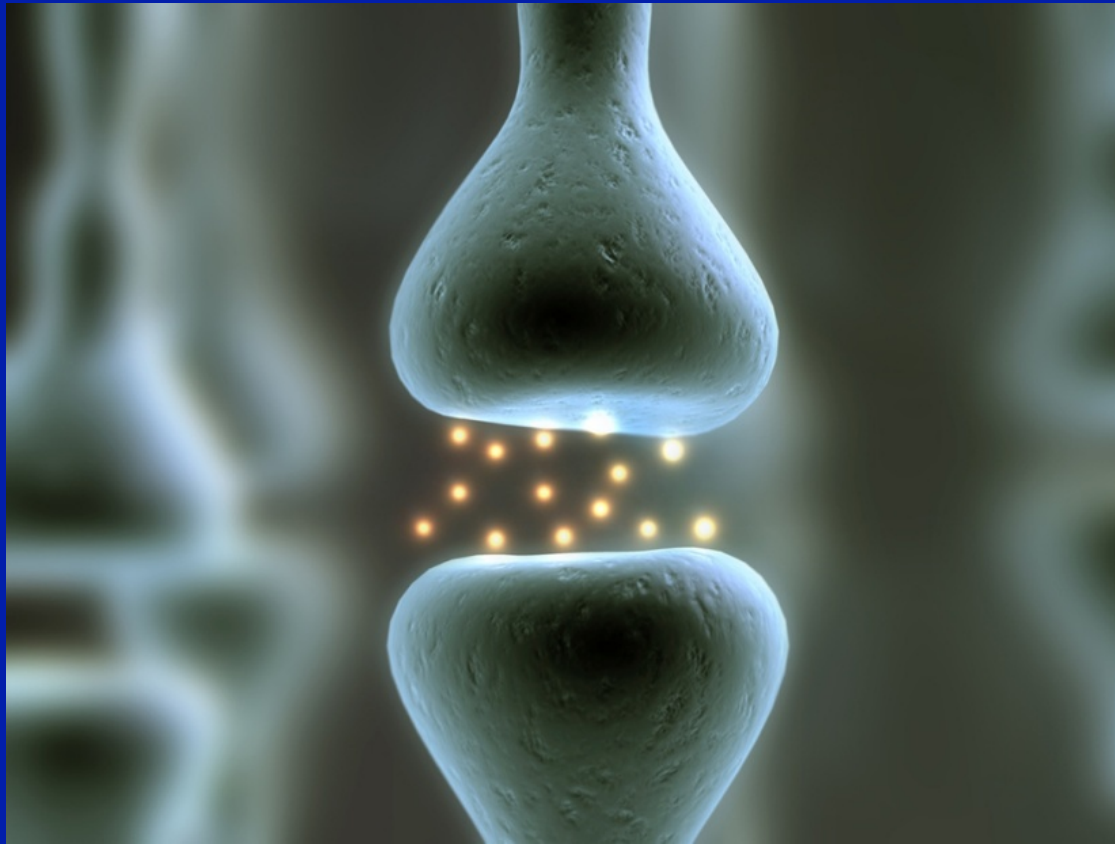
Inside the cortex of the brain are billions of tiny nerve cells, called neurons. The nerve cells have branches connecting them to other cells in a complicated network. Communication between these brain cells is what allows us to think and solve problems.

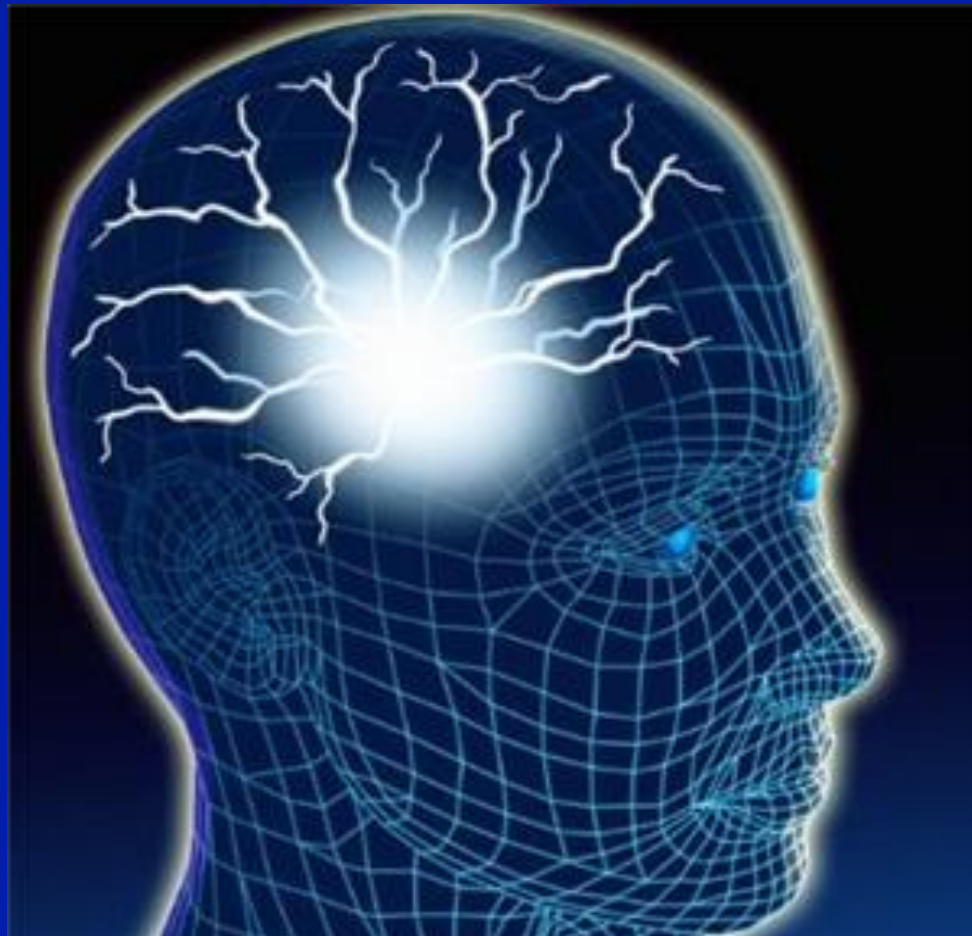


The brain is a network of cells
(neurons)



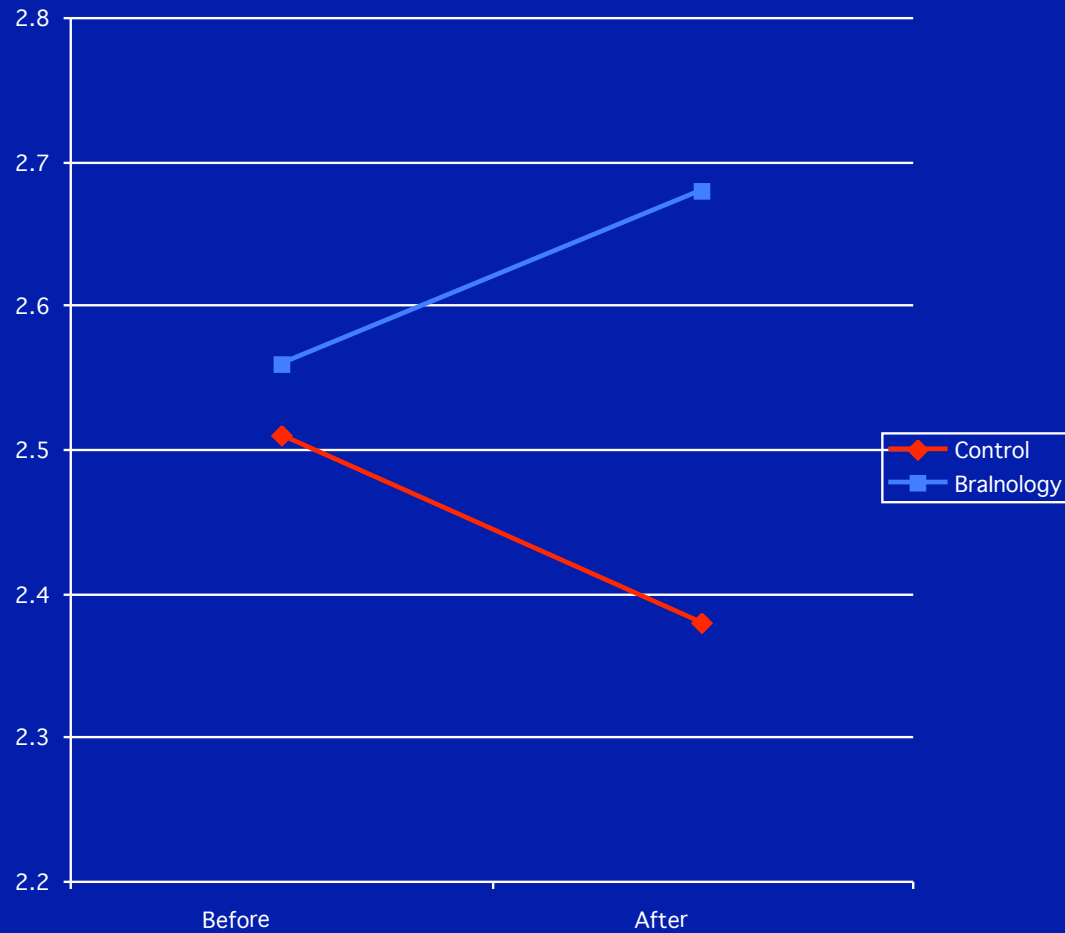
The cells communicate through chemical messages





Math Grades

(Blackwell, Trzesniewski, & Dweck)



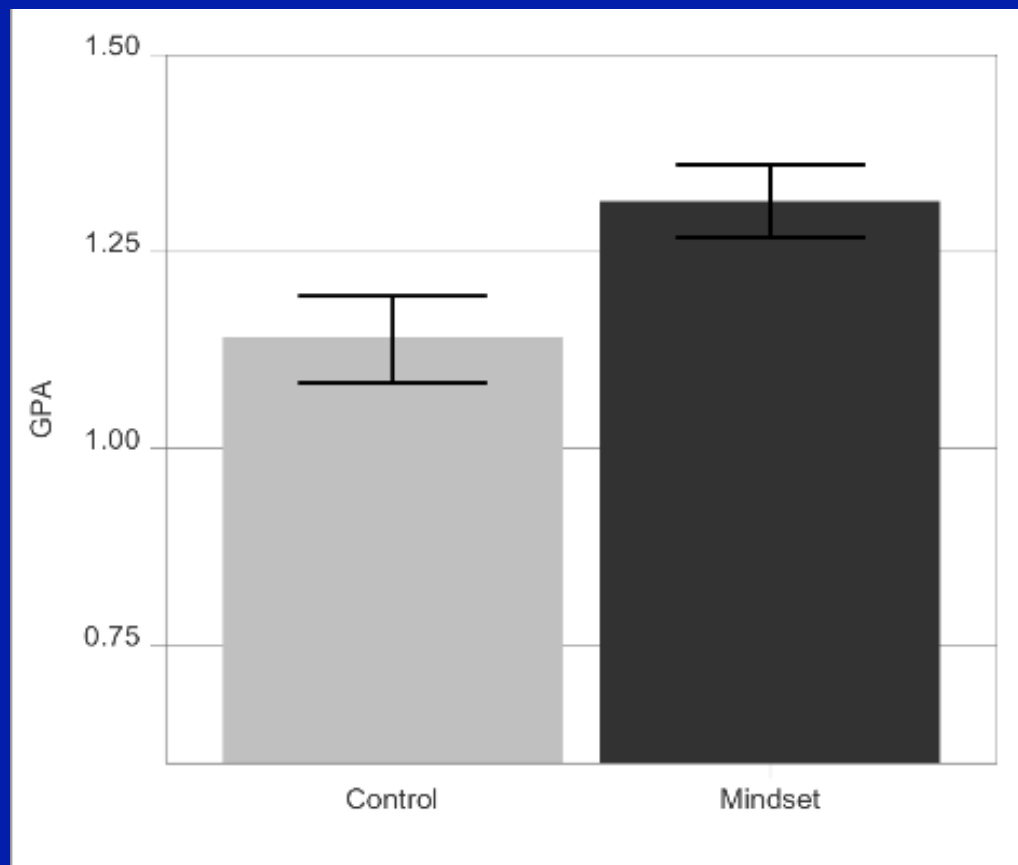
Transforming the Meaning of Effort and Difficulty



- “Probability, I was just like, ‘I don’t get this at all.’ But I was just like, okay, I’m going to do this . . . I want to do this *because it’s so hard.*”

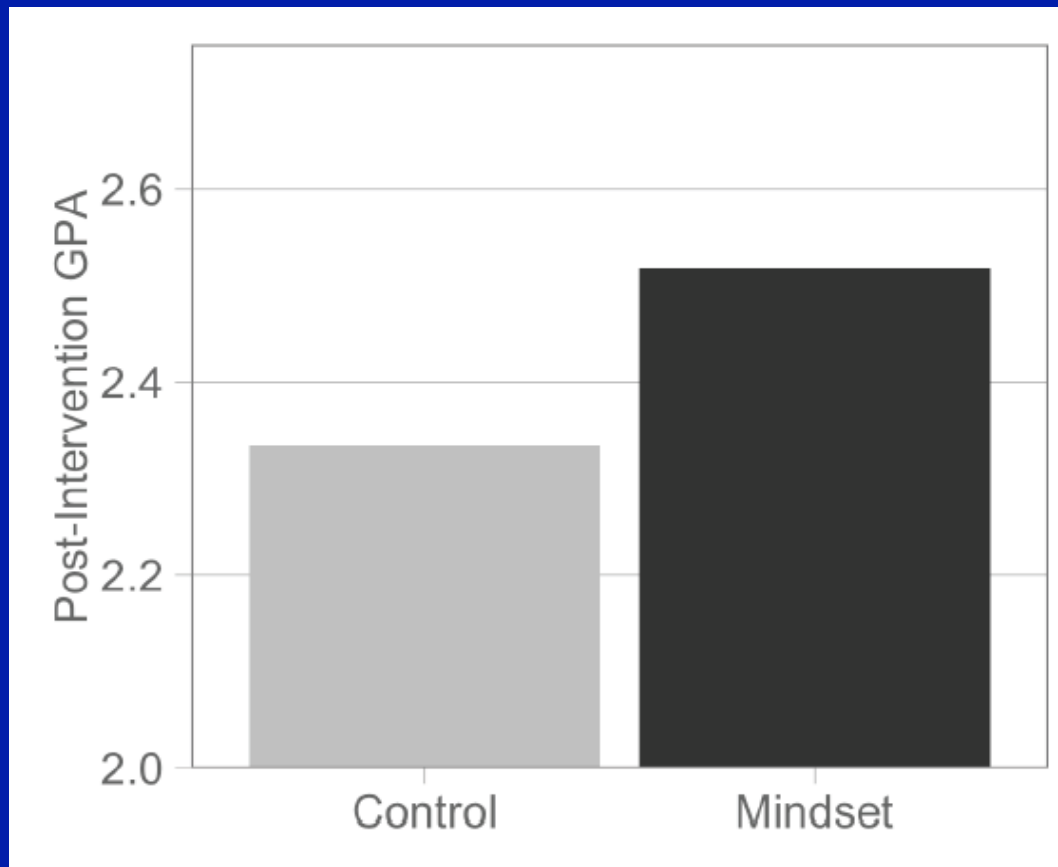
Is it ever too late?

High School Intervention Effect on GPA Students in Bottom Tercile



N=531

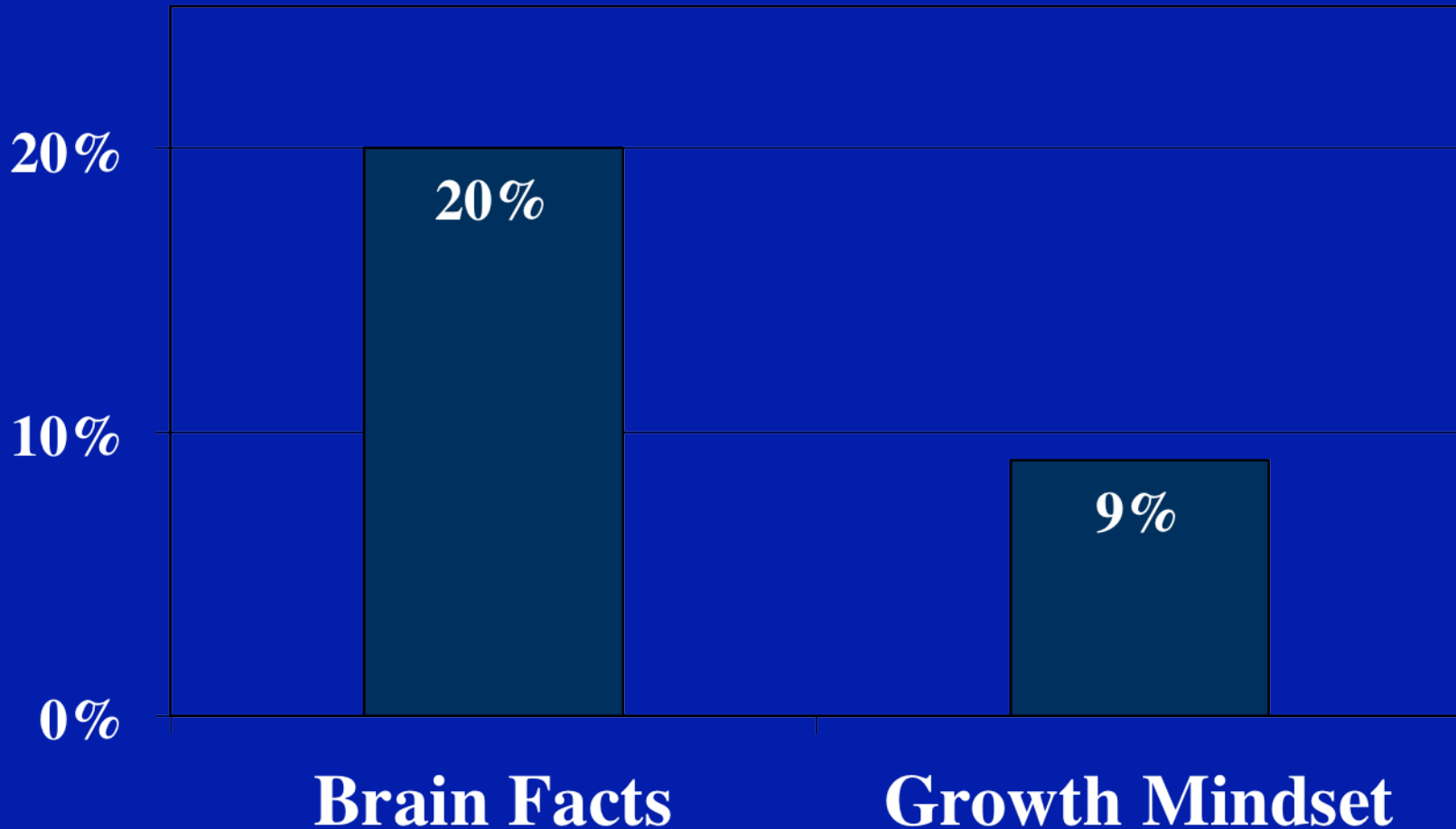
Community College: Effect of Intervention on GPA



All students, N=715

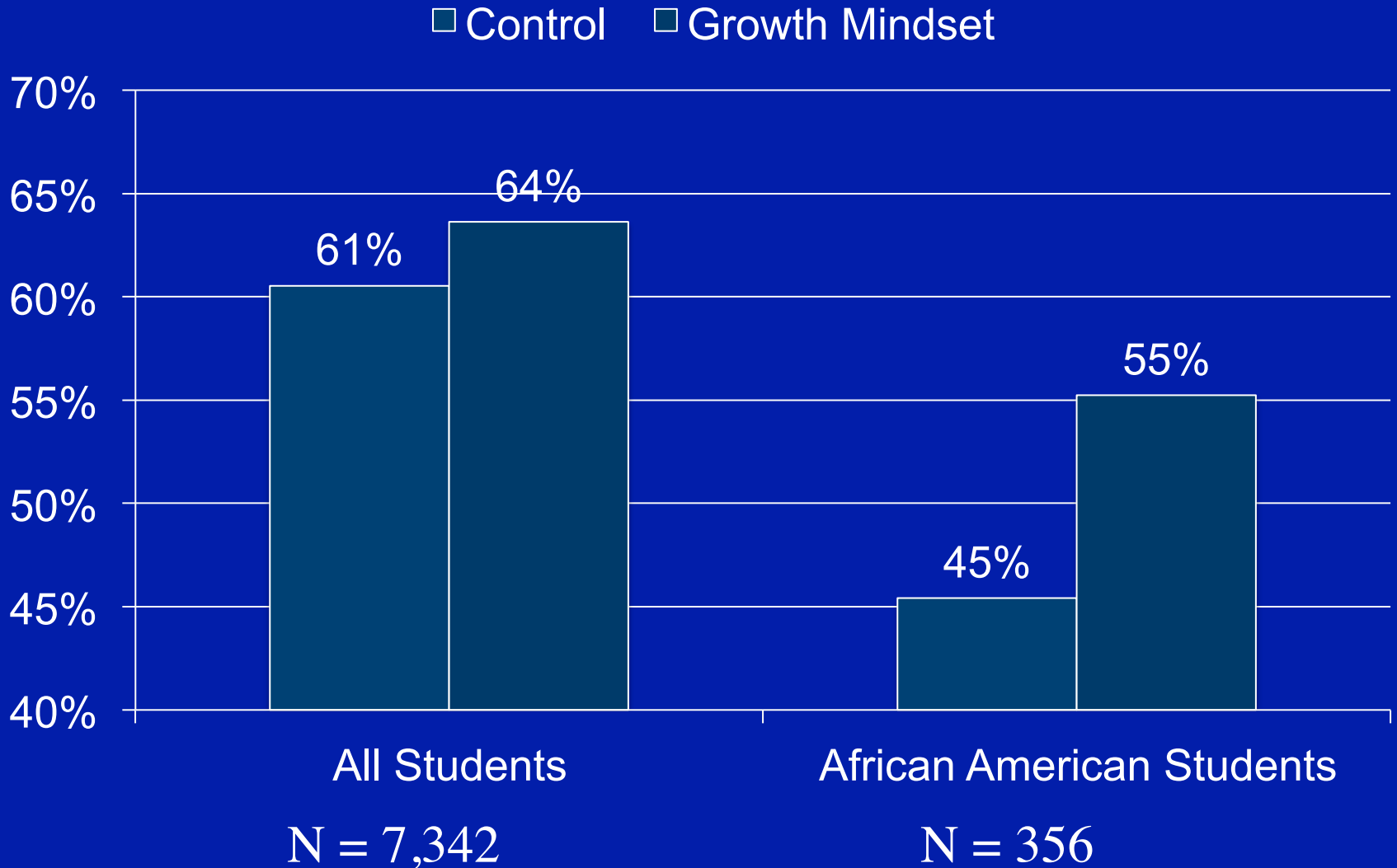
Course Dropout

Students Who Withdrew From Developmental Math



N = 288

High-Quality Public 4-yr. University: Maintaining 12+ Credits



A word about stereotype threat...

School/Community-Based Intervention

Native American Students

Stephanie Fryberg

- Quil Ceda and Tulalip Elementary School on Tulalip Reservation
- 90% Minority
- School was in bottom 5% of the state

After 1-1.5 Years

- Kindergarten and 1st graders: Lead the district in oral reading fluency: 95% of Kindergarten and 80% of first graders are proficient or above in reading.
- 3rd grade Literacy: On state literacy test, 68% of 3rd grade students met or were within 10 points of standard. Most had been more than 100 points below standard in the Fall (on a 600 point test).
- 3rd -5th Grade Literacy and Math: 60% of all students are showing more than one year of growth; and many are showing 1.5 to 2 years of growth (Measure of Academic Progress tests) .

Mindset Lessons

- Students need a growth mindset to:
 - Choose learning over looking smart
 - Prefer high effort over low effort
 - Be resilient: Profit from mistakes & setbacks

Mindset Lessons

- Adults need a growth mindset to:
 - Help students fulfill their potential
 - Fulfill their own potential as educators

HUMAN RIGHTS



Thank you!