

A decorative graphic on the left side of the slide featuring several green leaves of different sizes and shades of green, along with solid green circles. The leaves have visible veins, and the circles are in various sizes and positions, creating a stylized, organic composition.

Developing an Implicit Measure of Intelligence Mindset

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April 18, 2018 BRITE Ideas



UPDATED EDITION

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mindset

THE NEW PSYCHOLOGY OF SUCCESS

HOW WE CAN
LEARN TO FULFILL
OUR POTENTIAL

1.8
MILLION
COPIES
IN PRINT

*parenting
*business
*school
*relationships

“Through clever research studies and engaging writing, Dweck illuminates how our beliefs about our capabilities exert tremendous influence on how we learn and which paths we take in life.”

—BILL GATES, *GatesNotes*

mindsets matter



fixed

- Avoid **challenges**
- **Give up** easily
- See effort as **fruitless or worse**
- Ignore useful **negative feedback**
- **Feel threatened** by the success of others

Intelligence is **static**.



growth

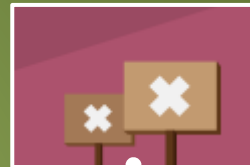
- Embrace **challenges**
- **Persist** in the face of setbacks
- See effort as **the path to mastery**
- Learn from **criticism**
- **Find lessons & inspiration** in the success of others

Intelligence **can be developed**.



Explicitly
teach

Celebrate
Mistakes



How can we promote growth mindsets in the classroom?



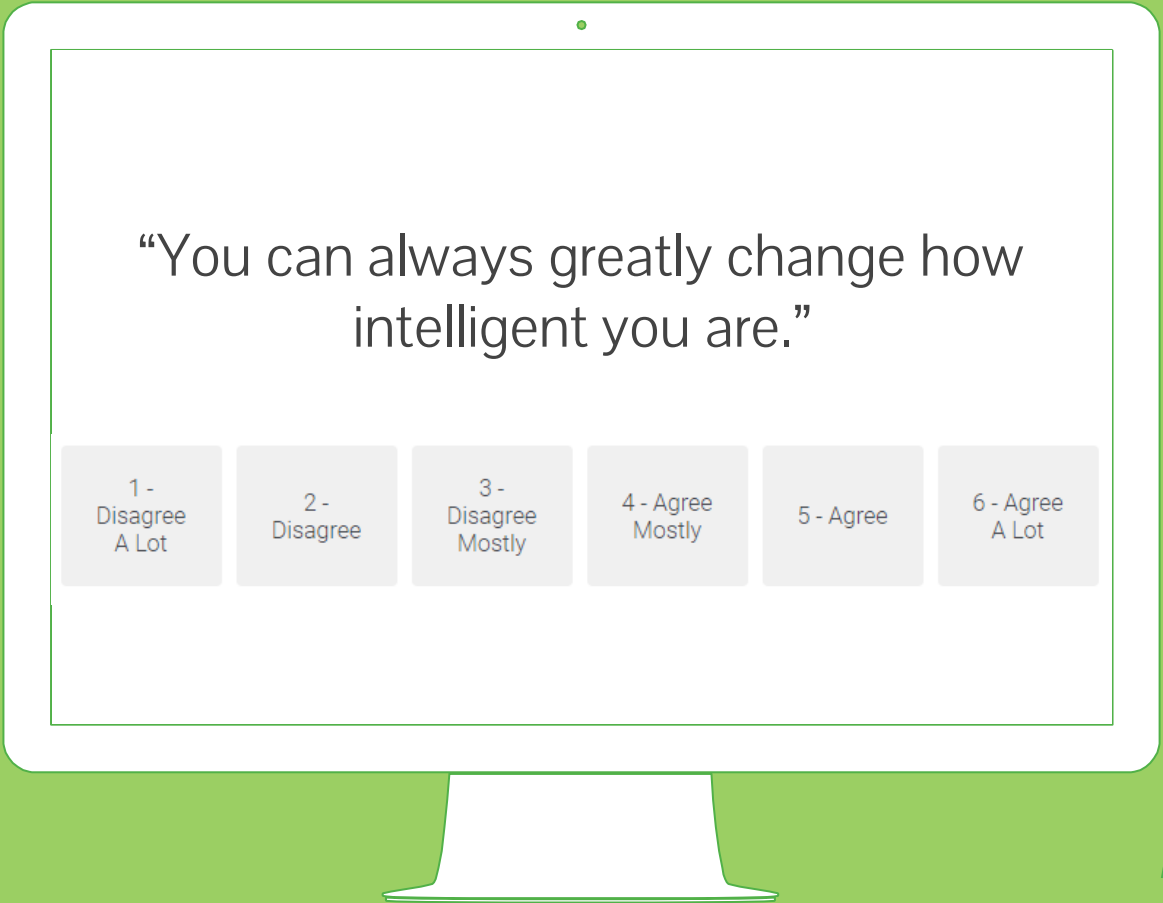
Praise the
Process, Not
the Person

Tasks that
Promote
Struggle &
Growth





But, people
can have
**false growth
mindsets.**



“You can always greatly change how
intelligent you are.”

1 -
Disagree
A Lot

2 -
Disagree

3 -
Disagree
Mostly

4 - Agree
Mostly

5 - Agree

6 - Agree
A Lot

Can intelligence
mindsets be
measured without
the use of an
obvious scale?





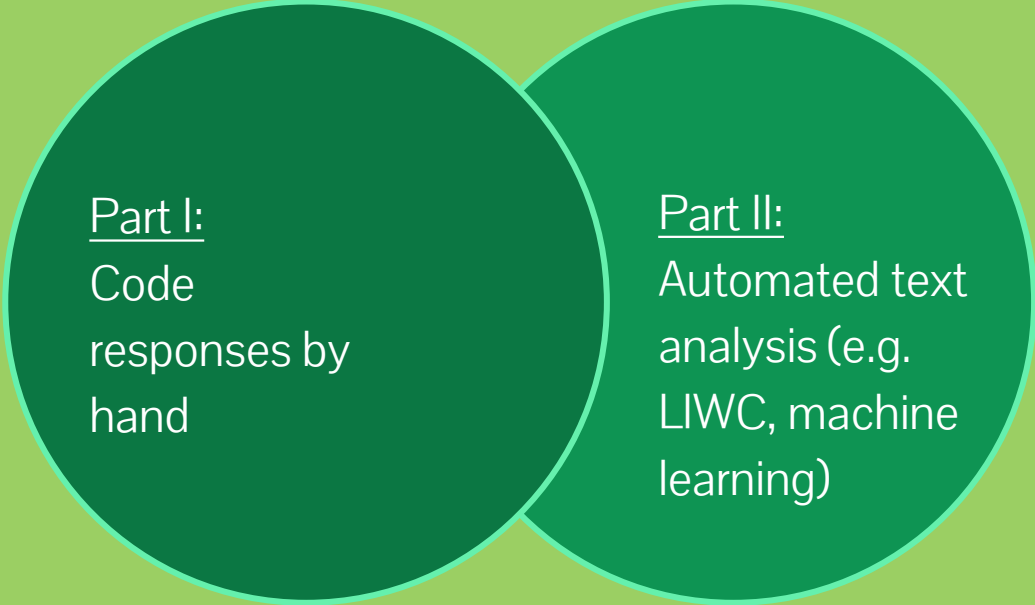

Study Goals

- Test the feasibility of open writing responses and judgment questions to detect intelligence mindset
- Identify false growth mindsets with our alternative measures
- Validate our measures as better predictors of academic outcomes




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Part I:
Code
responses by
hand

Part II:
Automated text
analysis (e.g.
LIWC, machine
learning)



Think of someone intelligent. Explain why
you would describe them that way.



“A Pratt Star who
rarely studies,
frequently STINFs
but gets As.”



“They are extremely
hard-working and
committed to
putting in the time
and **effort** that it
takes to learn.”





growth

traditional mindset scale

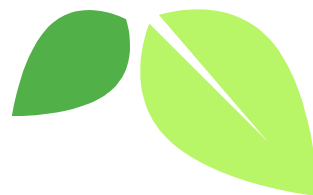
6
5
4
3
2
1

fixed

fixed

growth

hand-coded mindset





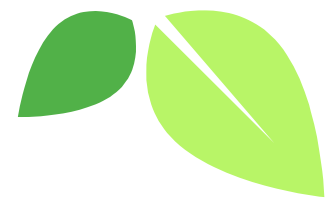
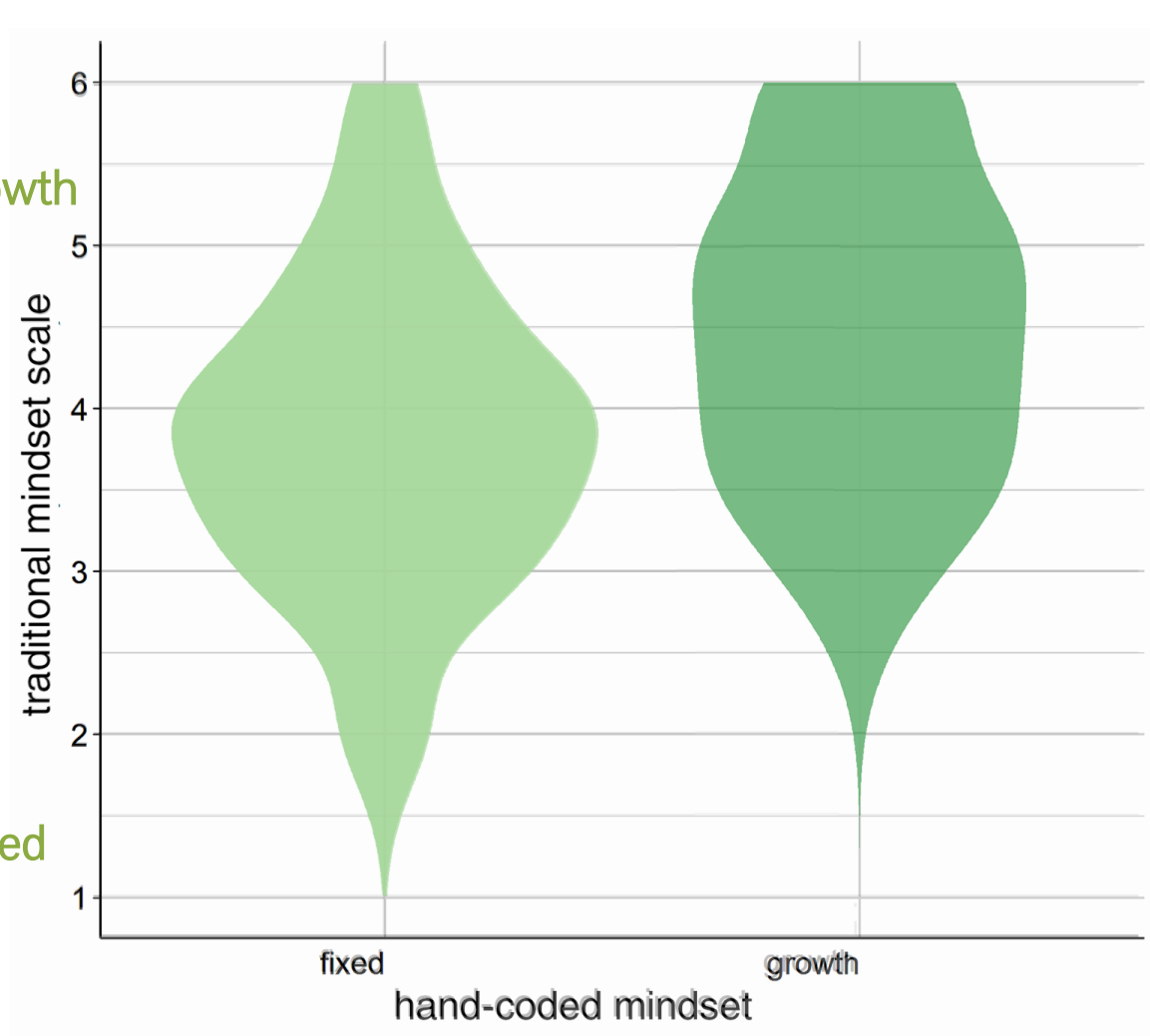
growth

fixed

fixed

growth

hand-coded mindset





growth

fixed

fixed

growth

hand-coded mindset

$n = 171, p < .0001, d = [.35, 1.03]$

What do you think CAUSED the person
you described to be so intelligent?



“My wife fits this description. In part due to her **genetics** (her family as a whole is artistically gifted)...”



“I think that the person **studies a lot** which caused him to be so intelligent. The things that he reads and watches makes him who he is.”

Consider someone who...

always puts in a lot of effort to do well in school.

Best guess about their intelligence? Why?

1 = not
very
intelligent

2

3 =
average
intelligence

4

5 = very
intelligent



1

“This person isn't very intelligent because for them to have to put a lot of effort to do well in school, it means they lack the **innate mental ability** and have to work hard to get good grades”



5

“I think that this person is very intelligent because **you can always make yourself smarter.** If you put in more effort, you'll do better.”



Study Goals

- *Test the feasibility of open writing responses and judgment questions to detect intelligence mindset*
- Identify false growth mindsets with our alternative measures
- Validate our measures as better predictors of academic outcomes

A photograph of a paved road with double yellow lines, winding through a dense forest of tall evergreen trees. Sunlight filters through the canopy, creating a bright path ahead. The text "future directions" is overlaid in white.

future directions

take-aways

Mindset shapes life and academic outcomes.

Intelligence mindsets are detectable in open writing responses and judgment questions.



Thanks!

Dr. Hard

Our fellow BRITE presentees

Carol Dweck

Template from Slide Carnival

Stock photos from Unsplash

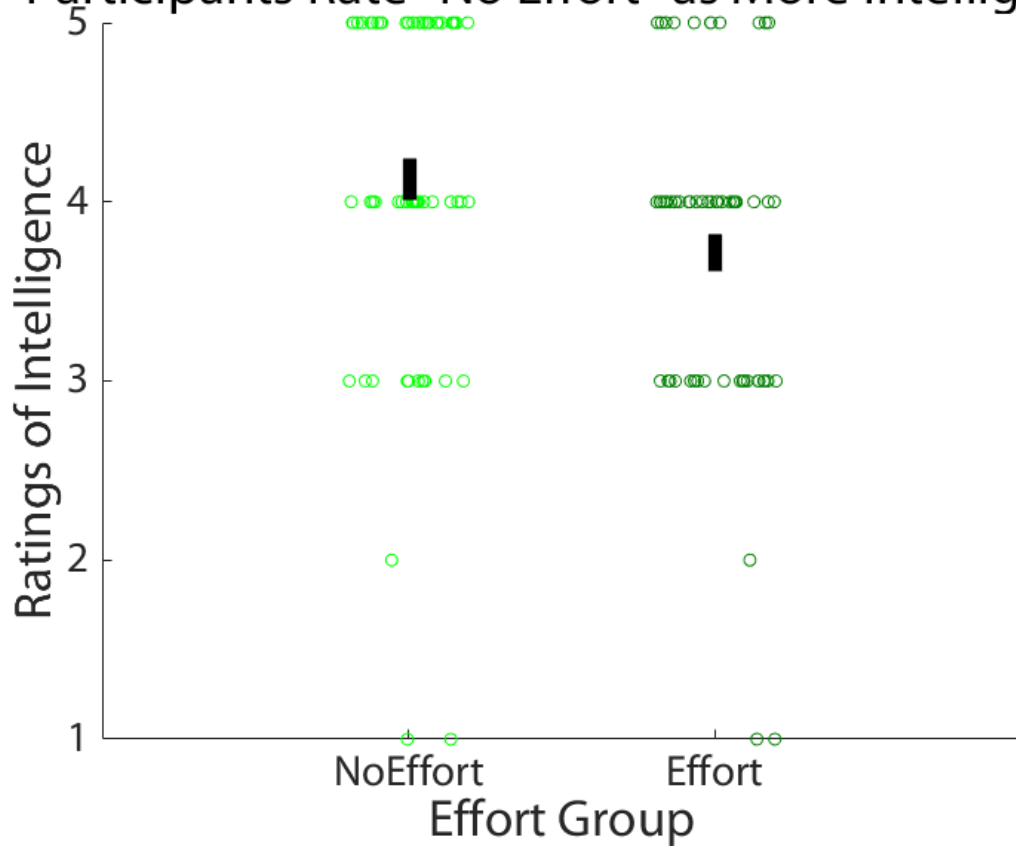




Bonus slides



Participants Rate "No Effort" as More Intelligent





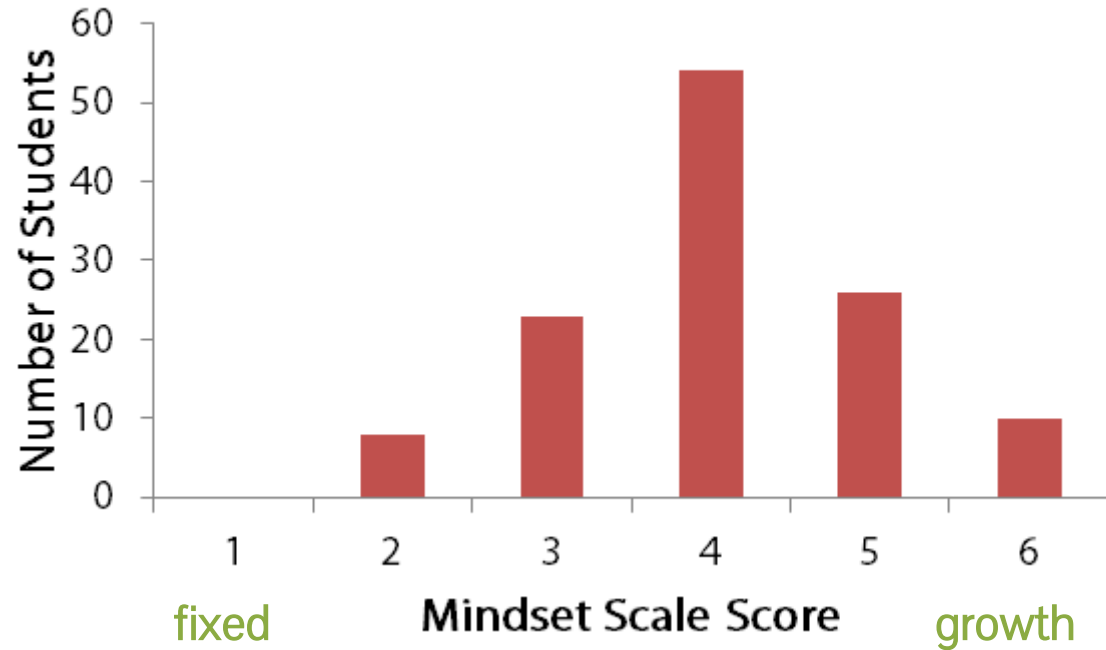
Examples of False Growth Mindsets

“They can take a test and **not study more than an hour**. They have **straight As**.” Yet a score of 5.75 (growth) on scale.

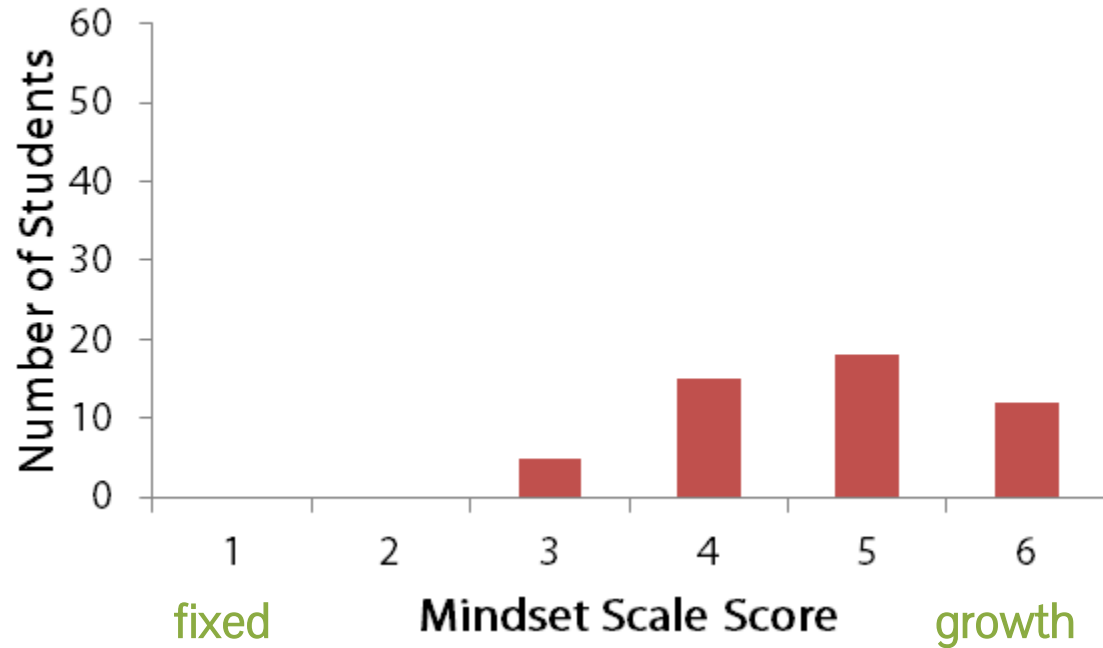
“A Pratt Star who **rarely studies, frequently STINFs but gets As**.” Yet a score of 5 (growth) on scale.

“They understand concepts **without having to study as much**.” Yet a score of 5 (growth) on scale.

Hand-Coded "Fixed" Mindset



Hand-Coded "Growth" Mindset





pilot dataset

multiple semesters

fall 2016, fall 2017,
winter 2017, spring
2018

prompt

“Think of someone
you know who you'd
describe as
'intelligent.' In just a
sentence or two, say
WHY you would
describe that person
as intelligent.”

large sample

$N = 703$
undergraduates

mindset measure

Contains 4 items of
traditional theory of
intelligence scale

Spring 2018

multiple campuses

Stanford and Duke

very related measures

beliefs
effort
mistakes
perseverance (hard)

Other semesters