Developing Growth Mindsets

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Purpose:
develop motivated & effective learners

✔ Learn and develop any skills
✔ Succeed in college, career & life
✔ Adapt in a fast-changing world
Sometimes students:

- lack aspirations to drive towards
- don’t fully engage in learning tasks
- are unmotivated by tasks with no grades
- get overwhelmed by challenges
- don’t fully develop important competencies
- drop out

Purpose:

develop motivated & effective learners
Sometimes adults:

- don’t fully engage in ongoing development
- disengage when things get hard
- are uncomfortable with soliciting, giving & receiving peer feedback
- give up on finding new strategies to succeed
- shy away from challenge & change
- become complacent

Purpose:

Develop motivated & effective learners
Do you care about inner drive to learn & improve? If so, why? and what challenges you?

Purpose:
develop motivated &
effective learners
"If you manage any people or if you are a parent (which is a form of managing people), drop everything and read Mindset."

—Guy Kawasaki, author of The Art of the Start

mindset
THE NEW PSYCHOLOGY OF SUCCESS

HOW WE CAN LEARN TO FULFILL OUR POTENTIAL

* parenting
* business
* school
* relationships

CAROL S. DWECK, Ph.D.
Fixed Mindset

Intelligence (or an ability) is a fixed trait

Growth Mindset

Intelligence (or an ability) can be developed

Belief (Mindset) → Behaviors → Outcomes
Way to Visualize Malleability of Intelligence
Fixed Mindset
Intelligence (or an ability) is a fixed trait

- Effort is Negative
- Looking Smart is Most Important
- Helpless

Growth Mindset
Intelligence (or an ability) can be developed

- Effort is Positive
- Learning is Most Important
- Resilient
Example Growth Mindset in Action

“It’s not that I’m so smart, it’s just that I stay with the problem longer.”
Growth Mindset Increases Achievement
Mindset Impact on Achievement

- Your intelligence is something you can't change very much.

- You can learn new things, but you can't really change your basic intelligence.

- No matter who you are, you can change intelligence a lot.

Mindset Impact on Achievement is a Human Phenomenon

Academics

Sports

Health

Relationships

The Workplace
Mindset effect on reading tests

- Chilean National Achievement Test
- 10th grade test incorporated Growth Mindset Assessment
  n=147,000

Susana Claro

Claro, Paunesku, & Dweck, in prep.
Mindset effect on reading tests

Growth Mindset students were 3x more likely to score in the top fifth!

Claro, Paunesku, & Dweck, in prep.

www.mindsetworks.com
College Examples

College students’ who believe that math ability can be developed have higher entering math ability and improve faster.

College students who believe that intelligence can be developed complete more credits per term.

Yeager et al, 2013, study of 500 community college developmental math students attending 19 colleges around the country
What a Growth Mindset Looks Like

- “Warren Buffett has become a lot better investor since the day I met him, and so have I. If we had been frozen at any given stage, with the knowledge we had, the record would have been much worse than it is. So the game is to keep learning.”
  - Charlie Munger

- “I just sit in my office and read all day.” … “Read 500 pages like this every day. That's how knowledge builds up, like compound interest.”
  - Warren Buffett
Workplace: Negotiation Skills

Business people who think good negotiators are made (vs. born):

- Persevere in a tough negotiation
- Create more collective value
- Capture more value

Workplace: Management Skills

Research shows that managers who believe that people can develop their abilities:

- Are better at taking and using feedback from their employees, and become better managers
- Notice and appreciate growth in employees, and as a result provide more accurate performance feedback
- Are better at coaching their employees

Workplace: Leadership Skills

People who believe leaders are made (vs. born), experience:

- Higher confidence in their ability to lead
- Lower anxiety and depression-like symptoms
- Higher leadership performance

Looking within
Problem: \( \nabla \phi + \lambda \phi = 0, \phi(0,0), 0 < r < a, 0 < \theta < \frac{\pi}{2} \)

BC \( \phi(r,0) = \phi(r, \pi/2) = 0, 0 < r < a \),
\( \phi(a, \theta) = 0, 0 < \theta < \pi/2 \)

\[ u(x) = \frac{1}{r^2} \frac{\partial}{\partial r} (r^2 \frac{\partial u}{\partial r}) + \frac{1}{r^2} \frac{\partial^2 u}{\partial \theta^2} \]

\[ u = \frac{1}{r^2} \frac{\partial}{\partial r} (r^2 \frac{\partial g}{\partial r}) + \frac{1}{r^2} \frac{\partial^2 g}{\partial \theta^2} = 0 \]

\[ I - \phi = \frac{1}{r} \frac{\partial}{\partial r} (r^2 \frac{\partial \phi}{\partial r}) + \frac{1}{r^2} \frac{\partial^2 \phi}{\partial \theta^2} = \lambda \phi \]

\[ \frac{1}{r} \frac{\partial}{\partial r} (r^2 \frac{\partial g}{\partial r}) + \frac{1}{r^2} \frac{\partial^2 g}{\partial \theta^2} = \lambda g \]

\[ \Rightarrow \begin{cases} \text{BC: } g(0) = g(a) = g(\pi/2) = 0 \\ \text{f(a) finite} \end{cases} \]

Solve BC \( g(0) = g(a) = g(\pi/2) = 0 \) leads to (from earlier)
\[ M = \frac{mL^2}{2t^2} \]

\[ g(r) = \sin \left( \frac{mL}{2t} r \right) \sin \left( \frac{mL}{2t} \theta \right) \]

Solve regular u(x) at \( B \) (f0 finite) as follows (m -> 2m):
\[ f(x) = \sum (2m-1)^2 \]

\[ \lambda = \frac{2m^2 \pi^2}{mL^2} \]

by Colorado State University

by Pedro Ribeiro Simões

by James Abbott McNeill Whistler

by Alan Cleaver

by bovinemagnet

by SGT Antony S. Lee
Reflection

When have you or do you experience a fixed mindset?

Food for thought:
- deeply understanding a subject area (math, physics, history...)
- teaching a student, or helping a fellow teacher
- leading your organization upon a setback
- helping an administrator, or department head
- having difficult conversations
- managing your time, responsibilities, and complexity

What effect did/does it have on you?

View of effort

Goal of looking smart vs. growing

Helpless vs. resilient
Mindset Effect on Motivation

**Fixed Mindset**

- Intelligence (or an ability) is a fixed trait
- Effort is Negative
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**Growth Mindset**

- Intelligence (or an ability) can be developed
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Belief → Behaviors → Outcomes
Zone of Prox. Dev. View of Mindsets

Student w/ Fixed Mindset
- Already known (ZAD)
  - Feels Smart
  - Feels Threatened

Student w/ Growth Mindset
- Is Bored
  - Feels Challenged

Optimal learning (ZPD)
- Reaches Feels Challenged

Too advanced (outside ZPD)
- Disengages
  - Remains Resilient, Tries Changes

Growth Mindset Enhances Relationships

Learning that people, groups & abilities can change leads to:

- Seeing others as sources of learning (rather than as threats)
- Seeing “wrong-doing” as situational (rather due to fixed trait)
- More constructive conflict resolution
- Greater willingness to engage, listen, compromise & share


Clarity

In your own words, what is the growth mindset?

Growth Mindset is **NOT**:  
- Having high expectations  
- Seeing effort as good  
- Challenging oneself  
- Persevering, never giving up

Growth Mindset is **is**: understanding we can develop our abilities  
- about our ability to teach  
- about our students’ abilities

Belief ➔ Behavior ➔ Outcomes (Mindset)
Good news: mindset are malleable!
How to foster a growth mindset

Part 1: Explicit Learning
Developing a Growth Mindset
Blackwell, Trzesniewski, & Dweck (2007), Study 2

- workshop on the brain and study skills
- half of the students also taught that intelligence can be developed

See full article at: http://www.mindsetworks.com/websitemedia/youcangrowyourintelligence.pdf
Impact of Teaching a Growth Mindset

% Identified by Teachers as Increasing in Motivation

“Your workshop has already had an effect. L, who never puts in any extra effort and often doesn’t turn in homework on time, actually stayed up late working for hours to finish an assignment early so I could review it and give him a chance to revise it. He earned a B+ on the assignment (he had been getting C’s and lower).”

**Finding 1:** SRI Scores Before & After Brainology

- Pre-program score
- Post-program score

**Finding 2:** SRI Gains as a Function of Program Completion

- Completed Brainology
- Did not
Equity: Growth Mindset Decreases the Achievement Gap


Yeager D., Dweck C., College intervention, submitted

63% reduction in achievement gap.
Mindset helps close the success gap

EducatorKit Teacher GM Training

Increase in teacher’s growth mindset

- Increase in adaptive (i.e. effective) teaching practices

Decrease in attribution of failure to lack of math intelligence

- Decrease in maladaptive (i.e. ineffective) teaching practices

How to foster a growth mindset

Part 2: Everyday Supports
Praise Upon Finishing Set 1

<table>
<thead>
<tr>
<th>Intelligence Praise</th>
<th>Process Praise</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Wow, that’s a really good score. You must be smart at this.”</td>
<td>“Wow, that’s a really good score. You must have tried really hard.”</td>
</tr>
</tbody>
</table>

Choosing Learning

"problems that I'll learn a lot from, even if I won't look so smart“

vs.

"problems that aren't too hard, so I don't get many wrong"

Struggled in Set 2
Number of puzzles solved by each group after Trial 2 struggle

<table>
<thead>
<tr>
<th>Trial 1 Before Failure</th>
<th>Trial 3 After Failure</th>
</tr>
</thead>
<tbody>
<tr>
<td># of Problems Solved</td>
<td></td>
</tr>
<tr>
<td>Before Failure</td>
<td></td>
</tr>
<tr>
<td>After Failure</td>
<td></td>
</tr>
</tbody>
</table>

- Effort Praise
- Control Praise
- Intelligence Praise
Lying: Students who misrepresented their scores

- Intelligence: 0.4
- Effort: 0.1
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“You must be smart at this”

“You’re a born artist”

“You’re the creative one”
What can we say?

• When they succeed with strong effort
• When they don’t make progress despite strong effort
• When they succeed easily without effort

See *Growth Mindset Framing* and *Growth Mindset Feedback* tools, available at:

http://www.mindsetworks.com/free-resources/
Modeling Lifelong Learning & Making it Visible
Growth Mindset

I can always improve to help students succeed

Observing, Experimenting, Reflecting, Changing

When you’re feeling stuck, remember, “Yet”
In Growth Mindset Organizations:

• Adults model learning.
  • Asking questions, not just having all the answers
  • Having & sharing learning goals
  • Soliciting, receiving, & giving feedback
  • Learning from mistakes, & sharing lessons learned
  • Making learning process visible

• All structures support learning
  • Assessments, feedback, measures of progress, language, routines, feedback, teaching malleability of abilities and learning & self-mgmt. strategies, continuous improvement…

• Results matter. Learning is for real improvement, not theoretical improvement.
Why do this?
We can develop in students:
(among other things)

☑ Basic skills
☑ Higher order competencies
☑ Motivation & efficacy as lifelong learners
by John LeGear
Resources

• Happy to share these slides and to connect & support – ebriceno@mindsetworks.com
• Book: *Mindset*, by Carol Dweck, Ph.D.: http://www.amazon.com/Mindset-Psychology-Success-Carol-Dweck/dp/0345472322/
• Growth Mindset TEDx talk video: http://www.youtube.com/watch?v=pN34FNbOKXc
• Mindset Works teacher training & curricula: http://www.mindsetworks.com/offerings/
• Mindset Works newsletter: http://community.mindsetworks.com/newsletter
• Your colleagues!
Key Takeaways

- Developing motivated & effective lifelong learners is the most important thing we can do.
- There is now a significant body of knowledge showing how to do so rigorously & systematically.
- We can:
  - teach that abilities can be developed
  - teach effective learning strategies
  - model lifelong learning
Heart
Head
Hands
Thank you!

Newsletter:
community.mindsetworks.com/newsletter