Neuroscience:
Implications for Retention

Miami 2010
Dr. Karen Morell & Dr. Ben McCune

Session Overview

1. New research on the brain
2. Results give techniques for students & staff
3. Concept of "Fixed" and "Growth" Mindset and the Brainology program
4. Applications for Retention

Resources Handout

- This version and updates available for download from our website
- http://uwtrio.org/mindset

Research Leads to Change

Learn how more TRIO students can:

- Be retained
- Graduate
- Have high academic expectations
- Become like today's TRIO Achievers

Broad Conclusion from Research

- Teach ourselves and our students:

To know we can change. (Physical brain and neural pathways have "plasticity" and grow with use.)

A Conclusion

- This means we confront the assumption

that traits AND our life are FIXED

If We Do Not

- Individuals stuck with limited view of what we can be and achieve.
- We let others define us.

Example of "stereotype threat" and impact on test scores

Leads TRIO To

Impact student Retention by teaching the effectiveness of

1) You can

- Change your thoughts

about others,
about the world, and
even yourself.

2) You can

- Learn how you learn
and how you retain and use information.

This empowers
development of skills and
knowing you can become more effective
than you are today.

BUT you must do the work.

Research Basics

Staff and students must:

- GET ENOUGH SLEEP

Research Basics

Need to reduce stress
- In the classroom

- Alter students' beliefs and perception of other stress

See Gary W Evan and Michelle A Schamberg's article in the Washington Post

Stress

Major inhibitor of good performance

Why?

Portion of brain that supports survival is active and inhibits higher order functions

Challenging Results

- Use of Sound
  - Background music can move one towards or even into the Alpha state to reduce stress around learning
  - Trying for the Alpha state—The Zone—for optimal learning
  - Sound can prepare your entire being for optimal learning

Challenging Results

- Use of Movement
  - Example of *Smart Moves*
  - Movement helps integrate learning
- Movement + Sound together stimulate the cerebellum and turn on the brain

Simple Powerful Insight

- Carol Dweck's decades of research led to this book for the general public:

  Mindset

  A book that carries change to education, business, and sports, and to each of our personal lives.

- Our partnership with Carol Dweck & Team

Dweck October 2009 Interview

- Defining Mindset (View again at http://uwtrio.org/mindset/)

Mindsets Defined

Fixed Mindset	Growth Mindset
or Entity Theory of Intelligence *"You have a certain amount of intelligence, and you can't really do much to change it."*	or Incremental Theory of Intelligence *"You can always change how intelligent you are."*

Giving Proper Praise

A cost free

significant step

For all TRIO Programs

Each student worked on a non-verbal IQ test & was given one kind of praise

Intelligence Praise	Effort Praise
"Wow, that's a really good score. You must be smart at this."	"Wow, that's a really good score. You must have tried really hard."

Control Group	"Wow, that's a really good score."

Significant Differences

- Praise of Effort
  - Immediate and long term improvement
  - More likely to become a hard worker
- Praise of Intelligence
  - Less improvement and in the future a need to save face and to not work as hard

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Major Dweck Research Published in Child Development

"Implicit Theories of Intelligence Predict Achievement Across an Adolescent Transition: A Longitudinal Study and an Intervention",

Lisa S. Blackwell (Columbia University), Kali Trzesniewski and Carol S. Dweck (Stanford University)

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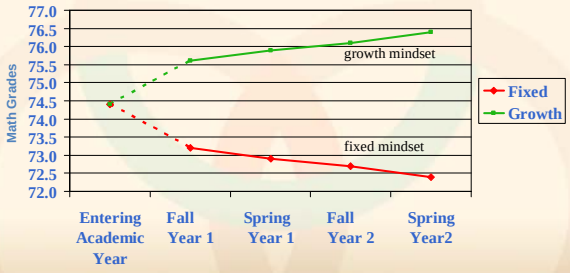
Math Achievement in Junior HS



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Research conclusion

- Predictable drop in math scores offset by teaching "incremental intelligence"
- Increased the motivation of students
- "*Within a single semester, the incremental theory intervention appears to have succeeded in halting the decline in mathematics achievement.*"

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Neuroscience: Applications for Retention

Neuroscience: Applications for Retention

- Once we are aware of the research results, how can we incorporate this information into our student activities?
  - Examples
  - Practice
  - Sharing

Applications for TRIO

- Mindset: "If we could do just one thing"
- Recommended:
  - Brainology -Pre-college & young adults
  - Mindset CL -College and Adult

Brainology

- Carol Dweck, author of Mindset and associates developed Brainology as an online workshop for students.

TRIO Special Opportunity

- New Partnership with Brainology
- TRIO programs can purchase at special rate of $10 per student (50% of regular cost.)
- Special shorter/ demonstration version available
- See Handout: Brainology Flyer

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Brainology Short Version

- The 45-minute abridged version of Brainology is meant to: - introduce educators to the growth mindset and to the key concepts students learn in Brainology®, and - give educators a sense of how the program works and how students use the program.

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The Brainology® Program

- interactive, online program focused on helping students cultivate a growth mindset

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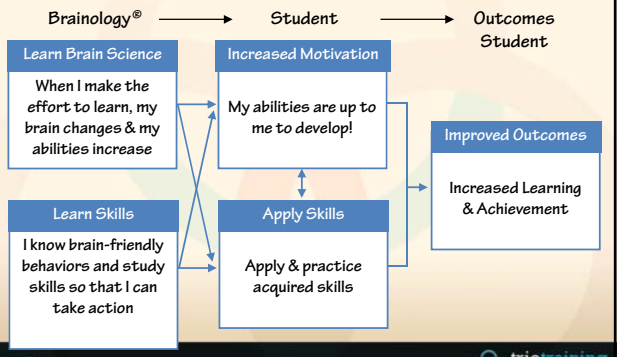
From Brainology® to Outcomes



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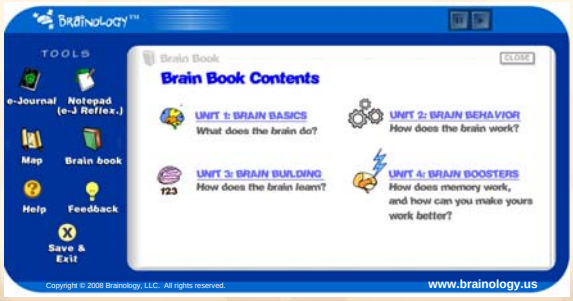
growth mindset → program → discussion

Brainology® Structure

- Students follow animated characters as they tackle issues in their most difficult subjects
- Brief introduction + 4 units
- Content made relevant and placed in context of school and student challenges
- Relevant content + interactivity + humor = high level of engagement

Screenshots



Brainology Addresses 4 Aspects of Brain Function:

- Attention and Concentration
- Emotion
- Learning
- Memory & Recall

- ALSO:
  - Addresses common challenges students face to these, and
  - Strategies students can use to help their brains work better

growth mindset → program → discussion

Brainology® Tools

- e-Journal: students are prompted for reflections throughout the program, and have access to the e-journal at any time
- Brain Book: reference guide about the brain. Summary of key lessons learned
- Formative challenges at the end of each unit to review material
- Map: navigate to any section of the program

Growth Mindset Video Gallery

- YouTube Videos for teachers and students
  - Carol Dweck
  - Kelly Corrigan
  - J.K. Rowling (writer of the Harry Potter series)
  - Michael Jordan

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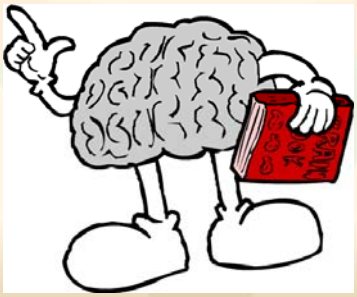
Student/Staff Testimonials Online



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Mindset CL – College Level & Adults

- A suggested curriculum (freshman class)
- Time needed: 4 to 5, 30 minutes session
  - Unit 1-Intro & Brain Basics: fixed vs growth & survey
  - Unit 2 -Brain Behavior
  - Unit 3- Brain Builder
  - Unit 4- Brain Boosters
- Resources: Brainology demo and downloadable materials.

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Great Downloadable Resources

- Brainology® Program and Growth Mindset Guides for Parents & Teachers
- Offline Adult/Child Resources for Working Between Sessions
- Offline Adult/Child Resources for Developing a Study Plan Upon Completion of the Brainology® Program

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Related Resources - uwtrio.org/mindset

- Links to the free Brainology site and a wealth of online videos and downloadable materials
- This session's Powerpoint
- This session's resource list
- Brainology CL curriclum materials
- Shared practicum letters/emails

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SESSION RECAP

- Theories and Concepts:
  1. Brain changes based on use
  2. Each person can change their mindset
  3. Focus on "Effort" not on intelligence
- Neuroscience Applications
  1. Mindset
  2. Brainology

Activity: Emails/letters & Sharing

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Brainology/Mindset Practicum

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Which Mindset Do You Have?

- 1. Your intelligence is something very basic about you that you can't change very much.
- 2. You can learn new things, but you can't really change how intelligent you are.
- 3. No matter how much intelligence you have, you can always change it quite a bit.
- 4. You can always substantially change how intelligent you are.
- REFLECT: 1 & 2 are Fixed; 3 & 4 are Growth

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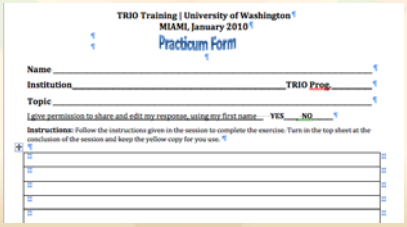
Topic: EMAIL to a TRIO Student

- Draft an email to your student(s) that conveys the value of "Mindset."



TRIO Training | University of Washington
MIAMI, January 2010

Practicum Form

Name _____

Institution _____ TRIO Prog. _____

Topic _____

I give permission to share and edit my response, using my first name. YES ___ NO ___

Instructions: Follow the instructions given in the session to complete the exercise. Turn in the top sheet at the conclusion of the session and keep the yellow copy for you use.

SHARING OF EMAILS

Conclusion

- Q & A
- Evaluation & New Skill: Cards
- Reminders:

"Neuroscience Resources" on the web:
uwtrio.org/mindset

Brainology limited-time opportunity

Thank you!