Teachers Are Brain Changers

a collaboration between

THE CENTER *for* TRANSFORMATIVE TEACHING & LEARNING
AT ST. ANDREW'S EPISCOPAL SCHOOL

ACIS
ASSOCIATION *of* COLORADO INDEPENDENT SCHOOLS

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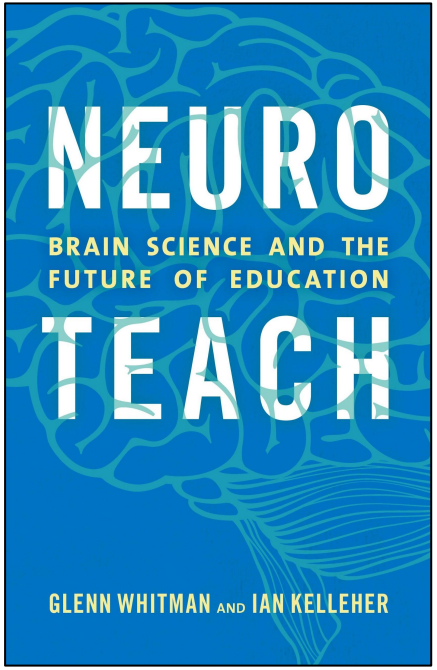
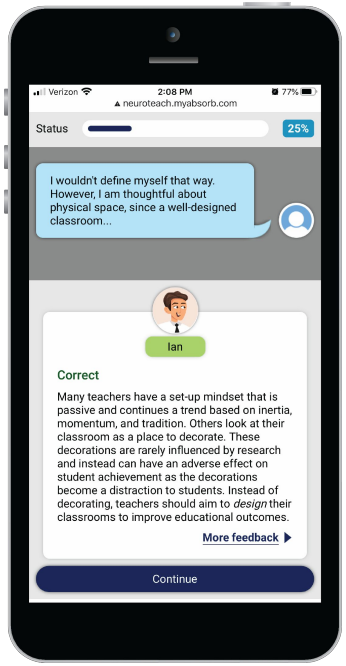





Dickinson College
DARTMOUTH
VOX CLAMANTIS IN DESERTO
1769
BLAIR ACADEMY
FOUNDED 1848
ST. ANDREW'S
EPISCOPAL SCHOOL
THE CENTER for TRANSFORMATIVE TEACHING & LEARNING
AT ST. ANDREW'S EPISCOPAL SCHOOL

To what extent do you agree or disagree with the statement: “Teachers are brain changers?”

a. Strongly agree

b. Agree more than disagree

c. Disagree more than agree

d. Strong disagree

e. Never thought about it (until now)

2007

What is the next frontier
for teacher training,
to take good teachers
(and their schools &
districts) and
make them great,
and great teachers (and
their schools & districts)
and make them expert?

THE CENTER *for* TRANSFORMATIVE TEACHING & LEARNING™
AT ST. ANDREW'S EPISCOPAL SCHOOL

The CTTL's vision is a world where every teacher understands how every student's brain learns

The CTTL's mission is to create and innovate in the field of Mind, Brain and Education Science research.

The CTTL Around the World

Since its founding in 2011, the CTTL has collaborated with teachers and school leaders from 6 continents and 43 states. Additionally, we have presented at more than 200 conferences, schools, and districts around the world.

CONFERENCE PRESENTATIONS

- Association for Supervision and Curriculum Development (ASCD)
- ASU+GSV Summit
- Challenge Success
- Council of International Schools
- EdSurge
- Educators Rising
- Edutopia
- European League for Middle Level Education (ELMLE)
- IMBES
- International Society for Technology in Education (ISTE)
- Learning and the Brain
- Learning Forward
- National Association of Episcopal Schools
- NAIS Annual Conference
- NAIS People of Color Conference
- National Network of Schools in Partnership
- New Teacher Center Symposium
- Outstanding Schools (Asia and Europe)
- researchED (U.S. and U.K.)
- SXSW EDU
- U.K. Festival of Education

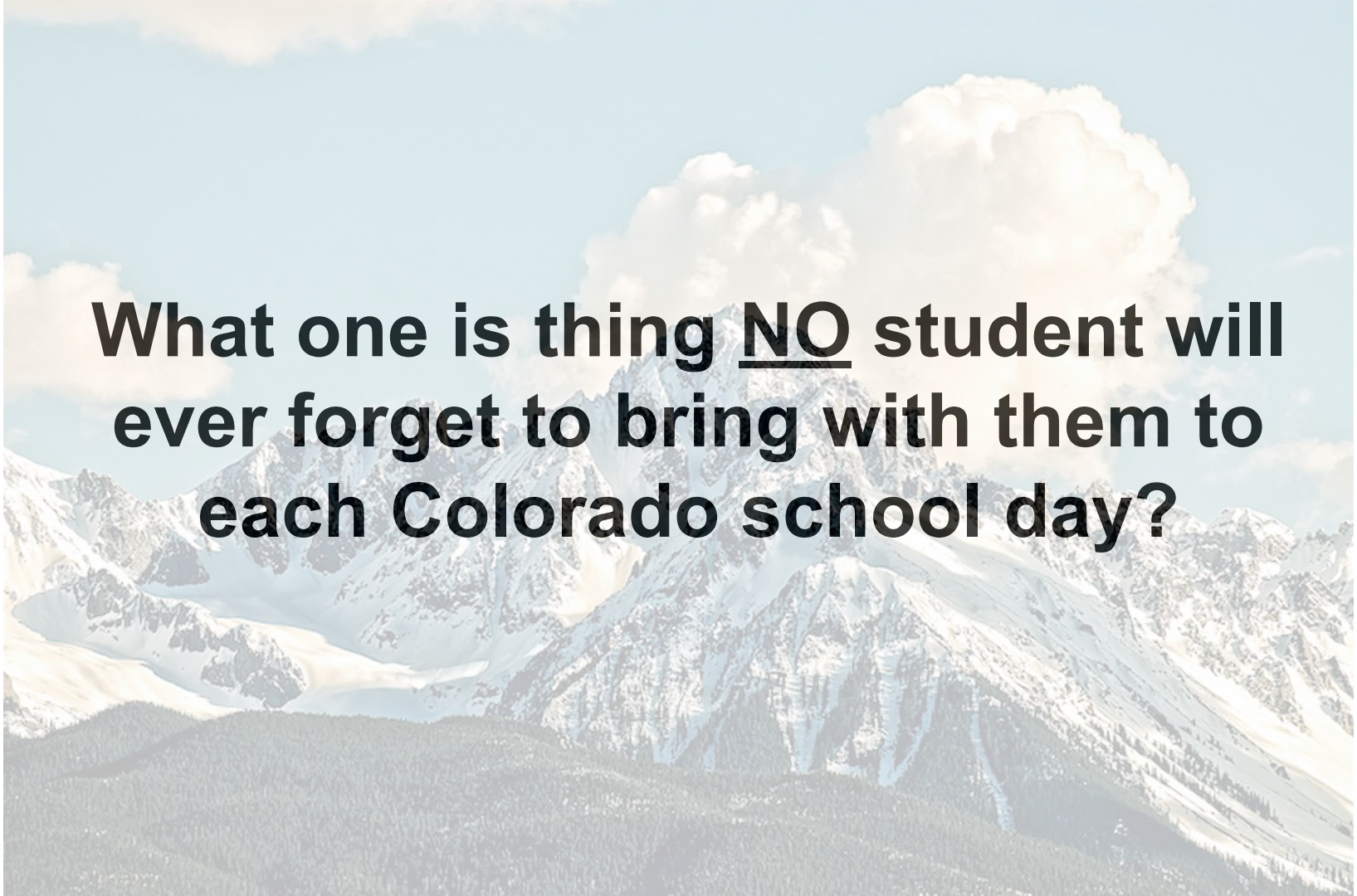
Which one of these questions is **least** likely to be asked during a teaching candidate interview?

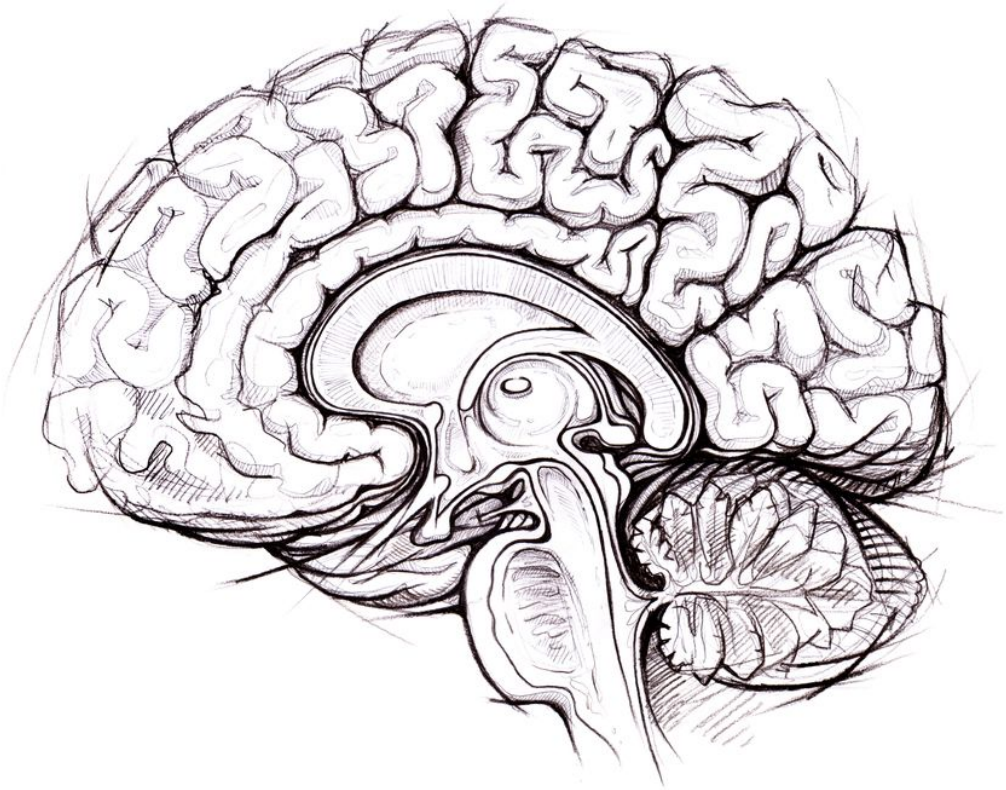
A. Do you know and can you teach the subject and age group you will be working with?

B. How much do you know about how the brain learns?

C. Do you like kids?

D. Can you coach (what else can you contribute to the school)?


What one is thing NO student will ever forget to bring with them to each Colorado school day?



“The organ of learning”

What percentage of 12,000 teachers surveyed reported that they have had foundational training in how the brain learns best?

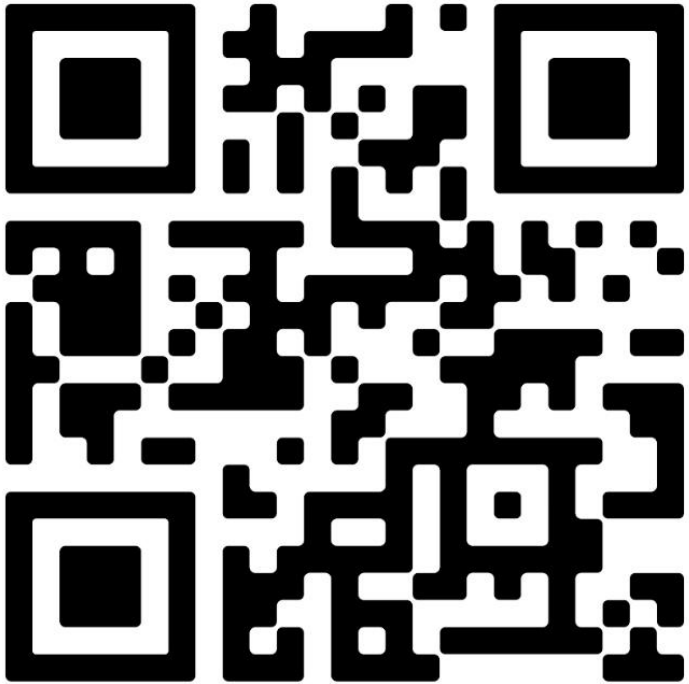
20%

40%

60%

80%

100%



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ABOUT EDUCATORS ADMINISTRATORS RESEARCH WINTER WEBINAR SERIES

What's Your MBE-IQ?

TAKE THE DIAGNOSTIC

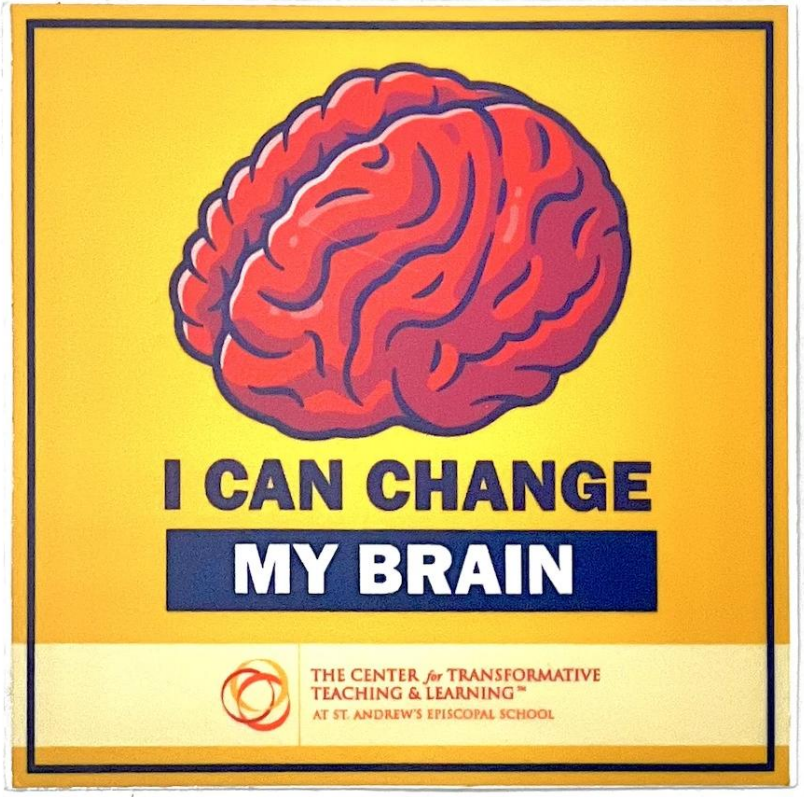
SEE SAMPLE RESULTS

The **NeuroEducation Confidence Diagnostic** (NECD for short) is a free diagnostic tool for helping schools and districts gauge key elements related to teacher efficacy. Developed by the team at The Center for Transformative Teaching & Learning, the NECD measures an educator's influence, knowledge, and confidence around the science of teaching and learning. It's for **teachers** who want to identify gaps in their knowledge and confidence, as well as **school and district administrators** who want to get an overall picture of the organizational strengths and gaps in learning science knowledge and confidence in classroom practices. **The NECD measures the following areas:**

- How much change can teachers affect within the school
- Teacher's self reported knowledge of learning science and their confidence to apply it in the classroom
- Evaluation of learning science scientific concepts and their application

What does your school or district get from the CTTL when they complete the NECD? Take a look at this fictional example from Springsteen Academy.

www.thecttl.org/necd


I CAN CHANGE
MY BRAIN
THE CENTER for TRANSFORMATIVE
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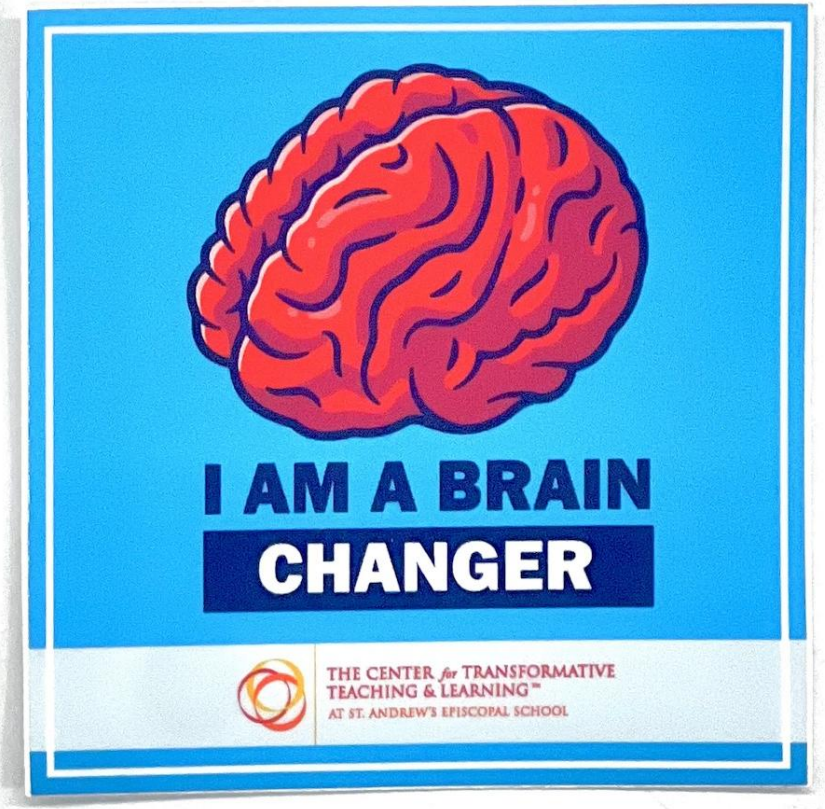
I AM A BRAIN
CHANGER
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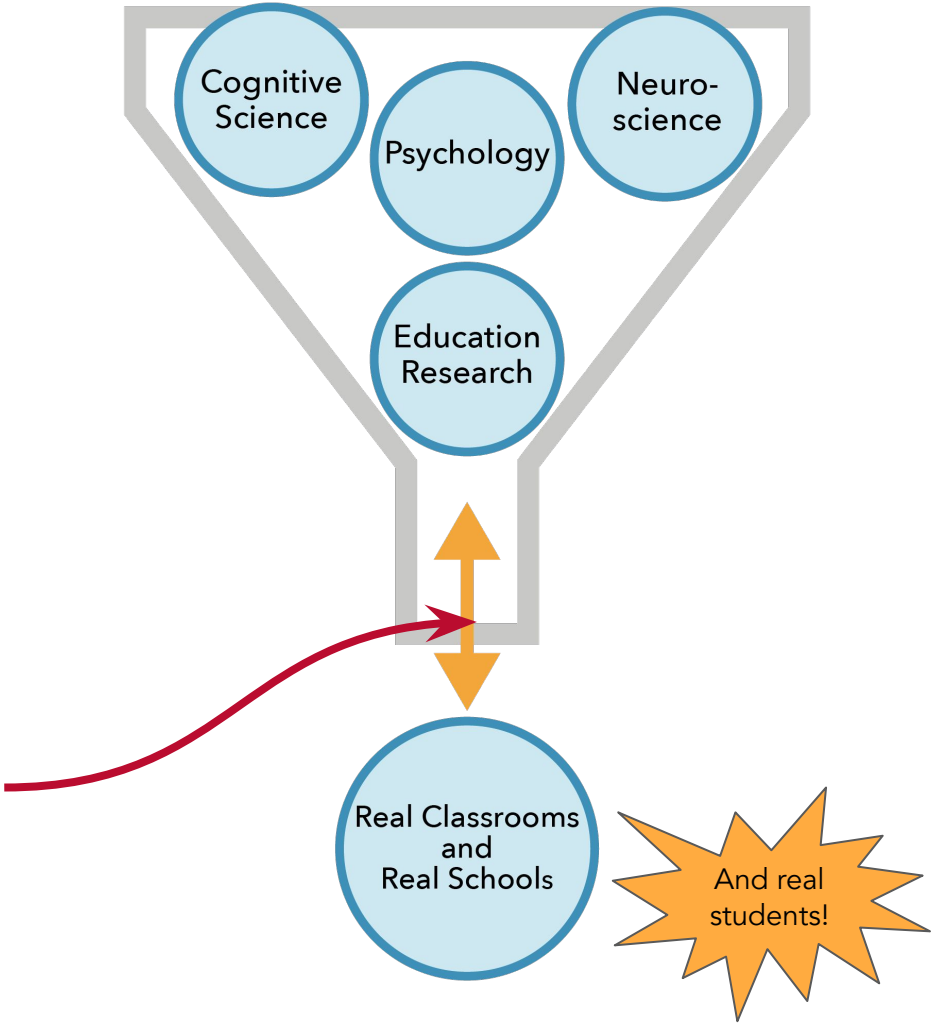
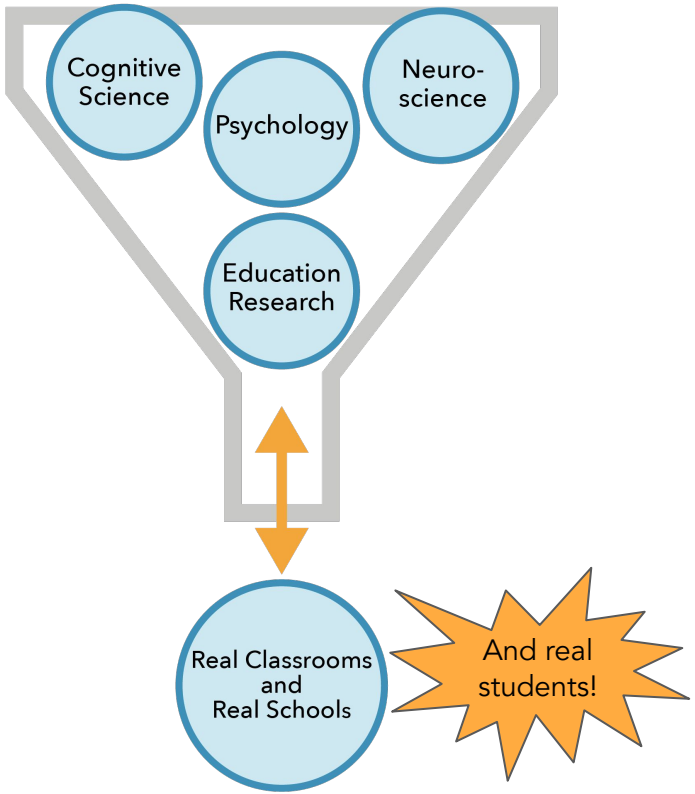
What is Mind Brain Education?



Transformation lies in the *translation.*

How can MBE inform, validate, and transform your instructional design and student learning?

Arts Integration
Assessment
Attention
Belonging
Constrained Choice
Cognitive Load
Daily Schedule
Disciplinary Literacy
Dual Coding
Emotion and Cognition
Engagement
Executive Functions
Feedback
Formative assessment
Homework
Knowledge Richness & Transfer
Literacy/Science of Reading
Memory
Metacognition
Mindsets
Motivation
Multiple modalities
Multitasking
Neuromyths (eliminate!)
Neuroplasticity
Novelty
Play
Project Based Learning
Self regulation
Sleep
Spaces where learning happens
Stress
Technology Use
Transfer
Well-being and Joy



brain sciences

MDPI

Editorial

Neuroscience in Education: A Bridge Too Far or One That Has Yet to Be Built: Introduction to the "Brain Goes to School"

Gerry Leisman [1,2]

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[2] Department of Neurology, University of the Medical Sciences of Havana, Havana 11600, Cuba

Abstract: There have been numerous detractors and supporters relating to attempts to merge the neurosciences and the knowledge base of related contributing disciplines with the field of education. Some have argued that this is a "bridge too far". The predominant view is that the relationship between neuroscience and the classroom has been neither significantly examined, nor applied. What is needed is a specially trained class of professionals whose role it would be to guide the introduction of cognitive neuroscience into educational practice in a sensible and ethical manner. Neuroeducators would play a pivotal role in assessing the quality of evidence purporting to be relevant to education, assessing who is best placed to employ newly developed knowledge, as well as with what safeguards, in addition to investigating how to deal with unexpected consequences of implemented research findings. This special issue of the "The Brain Goes to School" aims to provide support for the development of training programs that truly integrate curriculum design and classroom instruction with the developmental cognitive neurosciences.

Keywords: developmental cognitive neuroscience; educational neuroscience; neuroeducation

check for updates

Citation: Leisman, G. Neuroscience in Education: A Bridge Too Far or One That Has Yet to Be Built: Introduction to the "Brain Goes to School". *Brain Sci.* **2023**, *13*, 40. https://doi.org/10.3390/brainsci13010040

Received: 14 December 2022
Accepted: 21 December 2022
Published: 24 December 2022

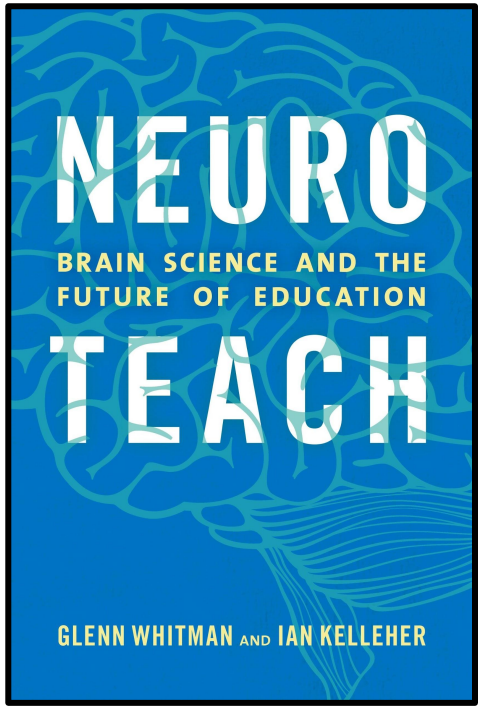
Educational neuroscience is a promising area of study, which can collectively integrate the knowledge base found in developmental cognitive neuroscience, [1,2] cognitive science and cognitive neuroscience, [3], psychology, [4] educational theory, [5] human factors, [6] production management, [7,8] educational technology, [9] curriculum design, [10] and even architecture [11,12]. The penultimate aim is to develop basic and applied research that can support the development of practical applications for more effective instruction and learning.

There have been numerous detractors and supporters of attempts to merge the neurosciences with the knowledge base of the contributing disciplines. In a 2004 paper, Davis [13] noted that "medical models" of cognition, "...have only a very limited role in the broader field of education and learning mainly because learning-related intentional states are not internal to individuals in a way which can be examined by brain activity." On the other hand, Pettito and Dunbar [14,15] have indicated that educational neuroscience "Provides the most relevant level of analysis for resolving today's core problems in education.

Several educational researchers have held that merging the knowledge base of developmental cognitive neuroscience with education is a "bridge too far" [16,17], and others have argued against such a view [18–21]. Nevertheless, a bridging discipline, such as educational or cognitive psychology [22,23], can provide a neuroscientific basis for educational practice. The predominant view, however, seems to be that the relationship between neuroscience and the classroom has neither been significantly examined nor applied [24–26].

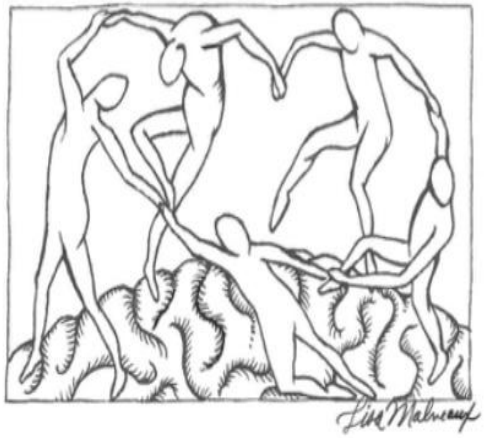
In some way or another, the brain sciences ought to be able offer much for the learner, given the vast literature on the psychology of learning [27], neuroscience of learning [28], human factors and information processing [29], and developmental cognitive neuroscience [30]. Educational neuroscience has been "birthed" from the necessity to

1997



A neuroteacher is one who intentionally applies research from the field of Mind, Brain, and Education (MBE) science to inform, affirm, and transform their instructional design and work with each individual student.

A



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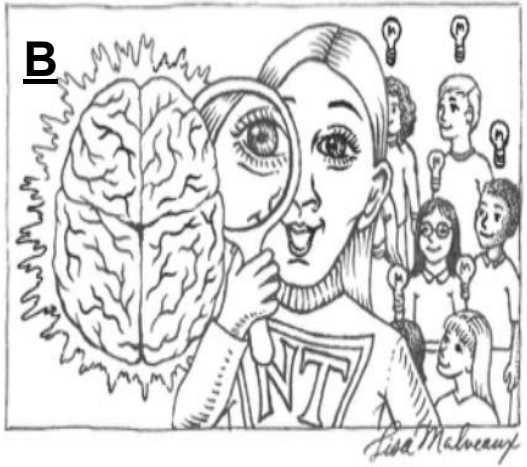
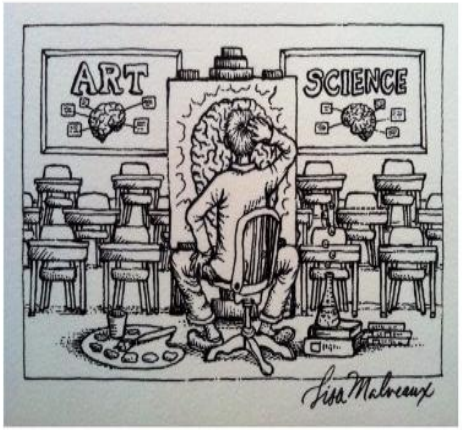


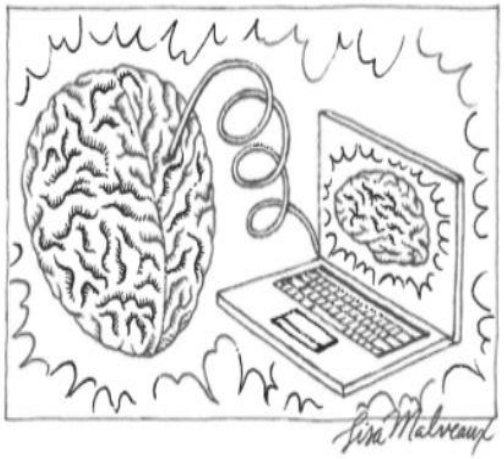


C

D

E

F



A Pathway to Becoming a Brain Changing Teacher or School Leader

Brain Changing Deeper Dive

Develop your personal and school's "brain changing" word wall

“Having words about important concepts enables community members to talk about them, think together and agree on their meaning, interrogate them for deeper understanding and gain collective clarity around related action and impact.”

-Language for learning leadership
Stoll (2020)

Amygdala

Cognitive load

Corpus Callosum

Hippocampus

Limbic System

Myelination

Neuroplasticity

Neurotransmitters

Prefrontal cortex

Pruning

How many of these terms do you *currently* know, understand, and use to inform, your teaching and leadership?

1. The brain's communication bridge, connecting the left and right hemispheres to help with coordination, thinking, and problem-solving. _____
2. Relates to the amount of information that working memory can hold at one time. _____
3. The process that enables nerve cells to transmit information faster and allows for more complex brain processes. _____
4. The ability of the brain throughout life to form and reorganize synaptic connections, especially in response to learning and experiences. _____
5. The brain's emotional and motivation center, influencing feelings, memory, and decision-making in students. _____
6. The brain's chemical messengers, helping send signals between brain cells to regulate mood, attention, and learning. _____
7. Forms part of the limbic system and plays a key role in the processing of emotions. _____
8. A process by which the brain eliminates extra synapses, structures that allows the neurons to transmit an electrical or chemical signal to another neuron, because of lack of use or need. _____
9. The brain's memory hub; it helps students store and retrieve information, making it crucial for learning. _____
10. The brain's control center for focus, problem-solving, and self-regulation, still developing in students, which affects decision-making and impulse control. _____

Amygdala
Cognitive load
Corpus Callosum
Hippocampus
Limbic System
Myelination
Neuroplasticity
Neurotransmitters
Prefrontal cortex
Pruning

1. The brain's communication bridge, connecting the left and right hemispheres to help with coordination, thinking, and problem-solving. **Corpus Callosum**

2. Relates to the amount of information that working memory can hold at one time. **Cognitive Load**

3. The process that enables nerve cells to transmit information faster and allows for more complex brain processes. **Myelination**

4. The ability of the brain throughout life to form and reorganize synaptic connections, especially in response to learning and experiences. **Neuroplasticity**

5. The brain's emotional and motivation center, influencing feelings, memory, and decision-making in students. **Limbic System**

6. The brain's chemical messengers, helping send signals between brain cells to regulate mood, attention, and learning. **Neurotransmitters**

7. Forms part of the limbic system and plays a key role in the processing of emotions. **Amygdala**

8. A process by which the brain eliminates extra synapses, structures that allows the neurons to transmit an electrical or chemical signal to another neuron, because of lack of use or need. **Pruning**

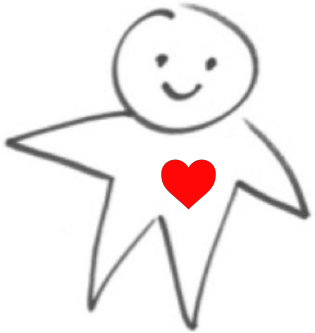
9. The brain's memory hub; it helps students store and retrieve information, making it crucial for learning. **Hippocampus**

10. The brain's control center for focus, problem-solving, and self-regulation, still developing in students, which affects decision-making and

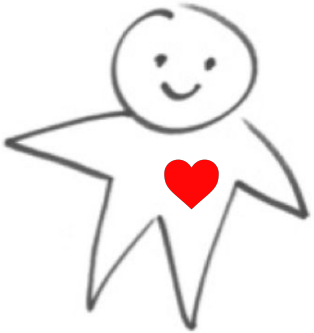
Neuroscience Vocabulary Applied

	I can apply this term to my thinking about teaching, learning and instructional design.
Neuroplasticity	I believe all students can and want to learn - and some might need different temporary scaffolds (and maybe extra opportunities) to meet the high bar I set for all students.

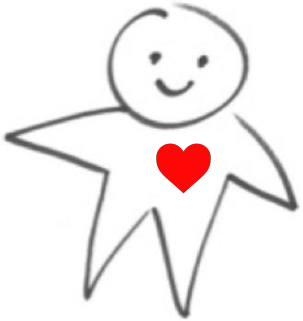
	I can apply this term to my thinking about teaching, learning and instructional design.
Myelination	Increasing my integration of retrieval practice into my instructional design can promote myelination allowing students to access information more quickly and with greater accuracy in the future.



Currently
surviving



Currently
“just fine”
and
“doing school”



Currently
thriving

All students and employees can learn

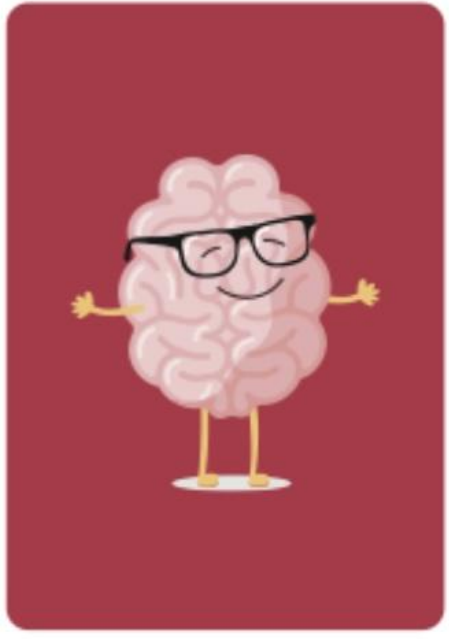
All students and employees want to learn

Evidence-informed practices can help everyone meet their full potential

Brain Changing Deeper Dive

Teach teachers, students, and parents about neuroplasticity

The human brain is "set" at an early age.



TRUE

FALSE

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The human brain is "set" at an early age.

FALSE

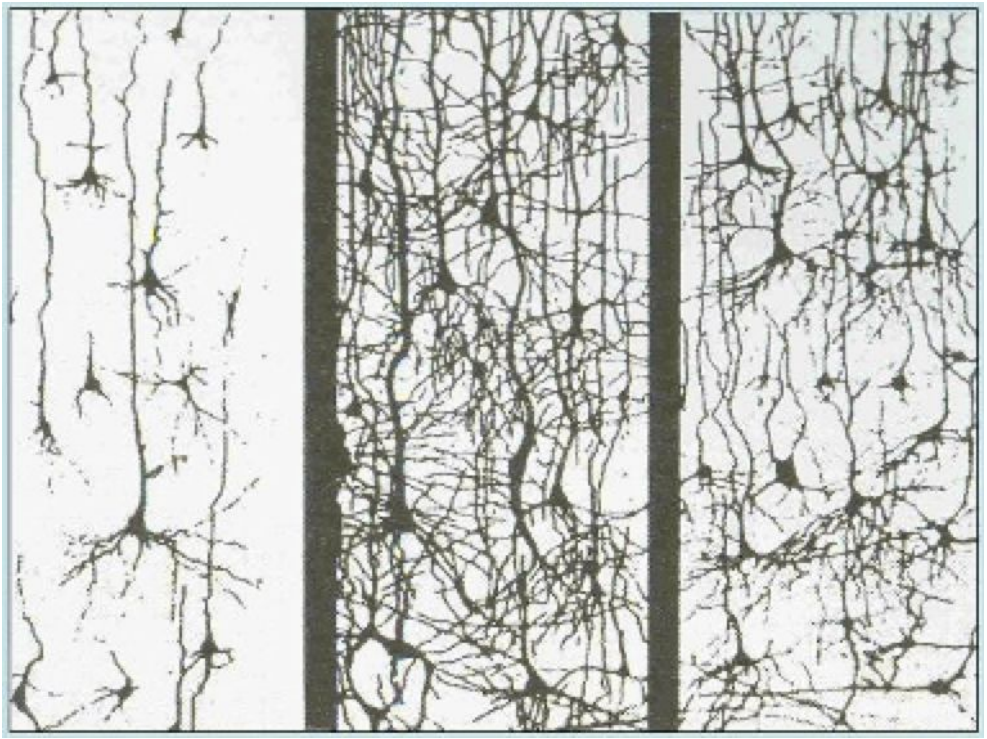
Neuroplasticity exists throughout our life – our brain alters over time in reaction to our environment and experiences. It is never "set" as neurons are being formed, connected, and pruned, and thus our brain is able to learn all through our life.

Citation: F

Neuroplasticity:
The lifelong ability of the brain to change its organization as a result of experiences.

Greg Dunn

Synapse Density - see, think, wonder



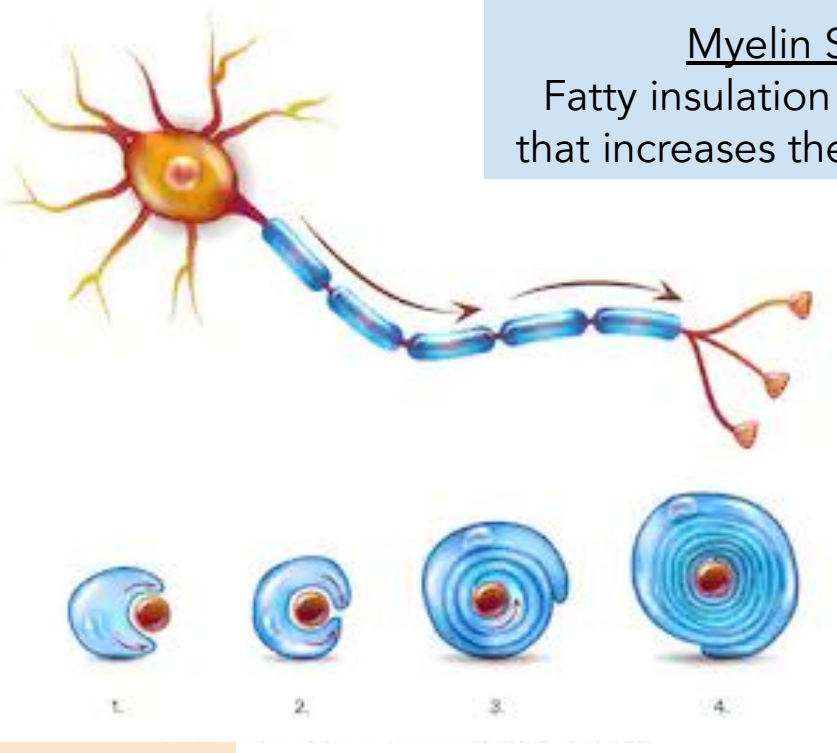
at birth at 6 years at 14 years

Synaptic growth

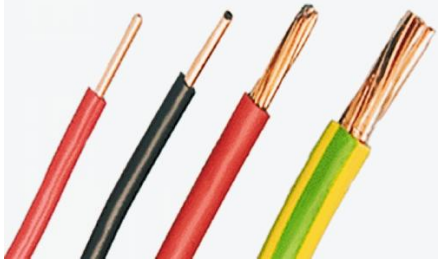
Pruning

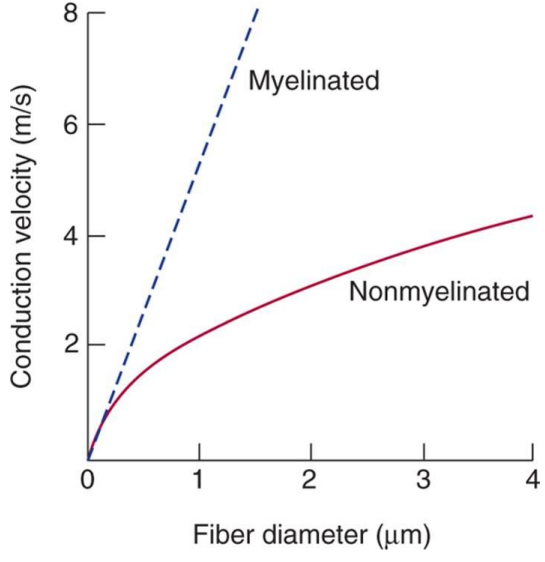
Demystify learning with neuroplasticity vs. growth mindset

Myelination insulates axons, making electrical signals

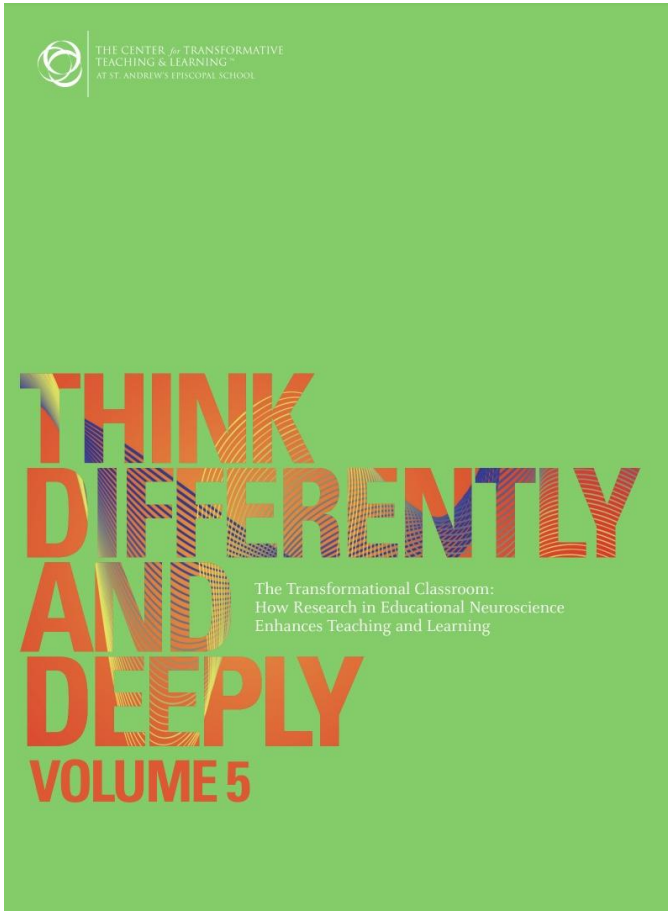


Myelin Sheath
Fatty insulation around axons that increases their signal speed





Graph source:
Doctorlib.info



The Power of Plasticity, the Impacts of Stress, and the Awesome Responsibility of Educators

DR. GREG DUNN AND EVA SHULTIS

As a Biology teacher and Mind, Brain & Education research translator, discovering Dr. Greg Dunn's neuroscience artwork felt like finding a Rosetta Stone of scientific communication. In a single blast of perception, his images convey a level of complexity that takes more than a thousand words to approximate. The opportunity to collaborate with him through The Center for Transformative Teaching and Learning (CTTL) and share his art with the students and educators we work with is an honor and a delight. He actually created the first piece in this article, Myelination II, with educators in mind: we had a conversation about the foundational concept of neuroplasticity, in which I bemoaned the lack of images that do it justice. The next time we spoke, he had created one. The second image, Winding Paths to the Self, achieves his self-proclaimed goal of "hitting the viewer in the limbic system" (the emotional processing center of the brain) and is even more powerful if you understand the biological story it's telling. This article is inspired by and in conversation with Dr. Dunn's two images and my attempt to tell the story they evoke for me, as well as the sense of purpose and self-authorship I draw from them as an educator and a human with a brain.

The Most Important Concept To Understand About Your Brain

The power of our brain lies in its neuroplasticity: its ability to change in response to experience. The brain is a living structure that continuously modifies itself, and any learning we do involves a physical change in its synaptic connections: the approximately 30-nanometer sized gaps between one neuron and the next, where neurotransmitter molecules such as serotonin, dopamine, or adrenaline carry the signal forward. Researchers estimate there are 86 billion neurons in the human brain, and each neuron can form a synaptic connection with 1,000 to 10,000 others, generating a level of complexity that's hard to wrap your mind around. This network of connections holds our memories, thought processes, and patterns of behavior. A single neuron is not intelligent on its own — rather, our intelligence emerges from the concerted action of circuits of billions of neurons, just as waves emerge from the movement of countless water molecules. Similarly, our personality and sense of identity emerge from the lifelong strengthening, weakening, and reconfiguring of the connections that make up our most-traveled neural pathways. In this way, the whole is greater than the sum of its parts. And just as you can't step in the same river twice, our

https://www.thecttl.org/think-differently-deeply/

Empty Vessel Instruction

Why is this not learning and effective for brain changing?

What can make it better?

Memory is the residue of thought

Prof. Dan Willingham, UVA

Learning happens when you think hard

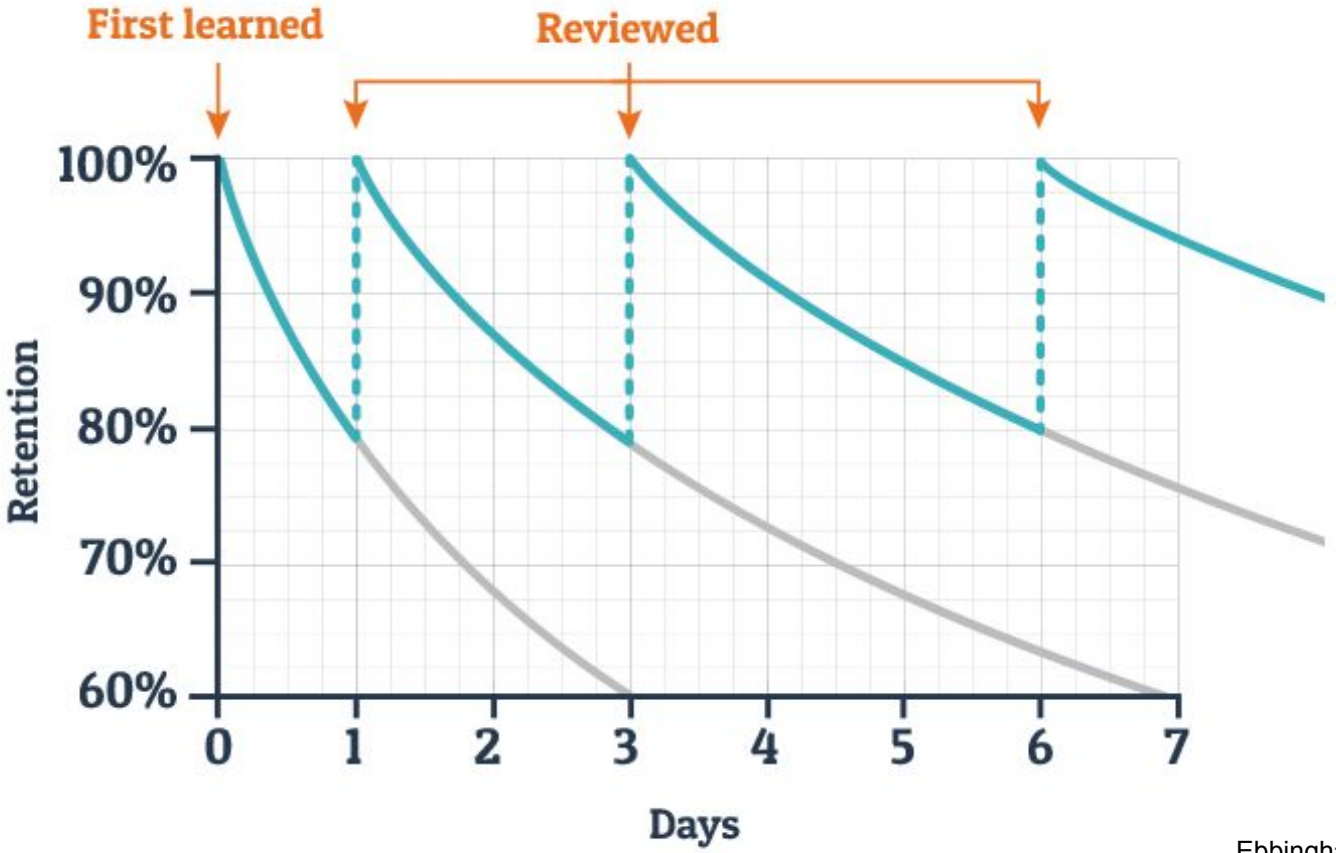
Prof. Rob Coe, Durham University (UK)

Neuroplasticity aligned and myelinating promoting teaching and learning strategies

(which do you already use?)

- Retrieval practice
- Metacognition and Visible Thinking Routines (Check out Project Zero)
- Using teacher “wise feedback” to improve as a learner
- Spaced and interleaved practice
- Elaboration and concept mapping
- Feeling a sense of academic and social belonging

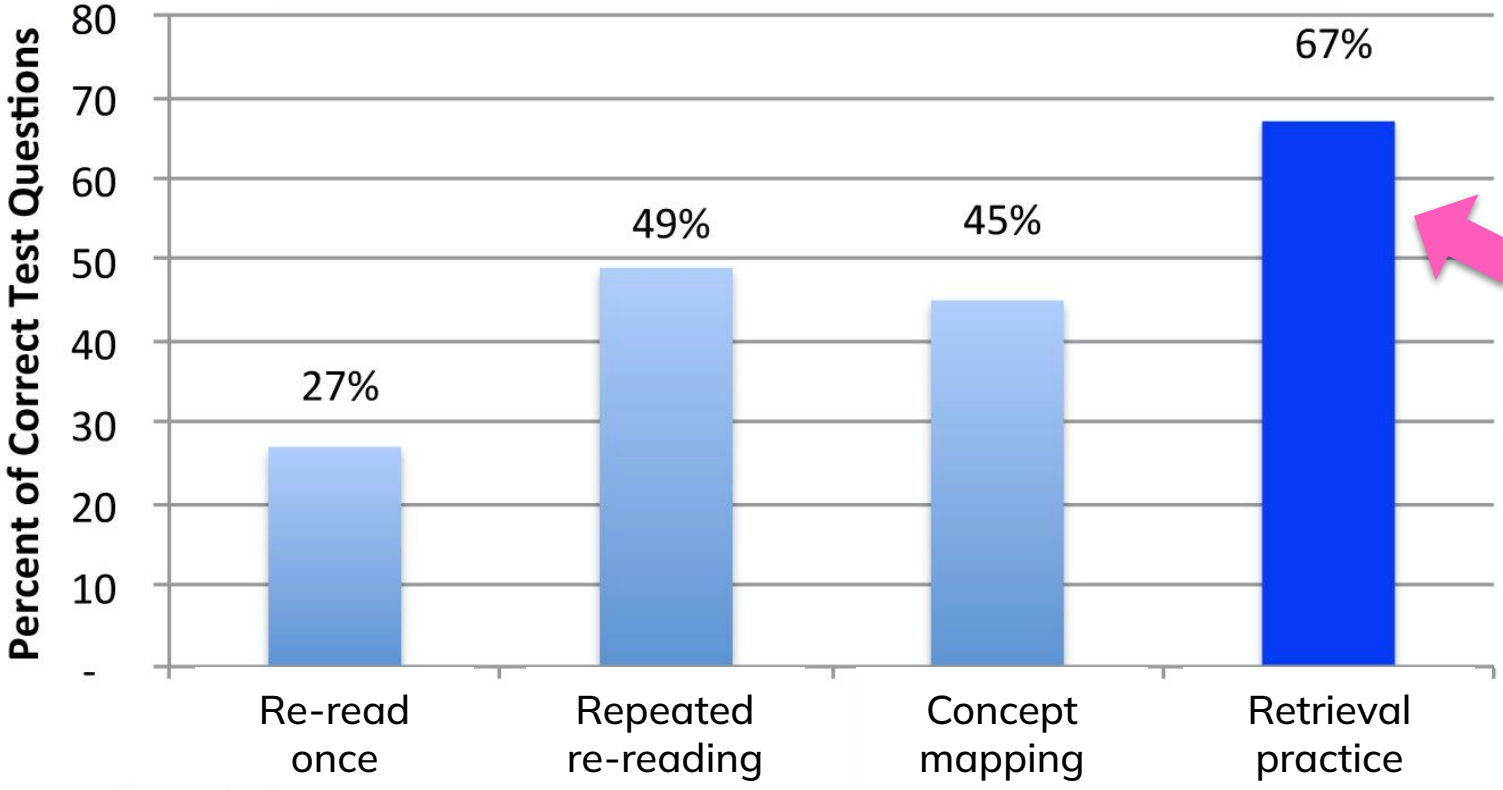
Typical Forgetting Curve for Newly Learned Information



What do you see and wonder about when looking at this graphic?

Ebbinghaus “Forgetting Curve”

Comparison of studying for the **same time** with different methods



~40% higher for the same amount of time!

Karpicke and Blunt, 2011

Let forgetting be your friend

A

B

C

A

C L

C C

H

L S

M

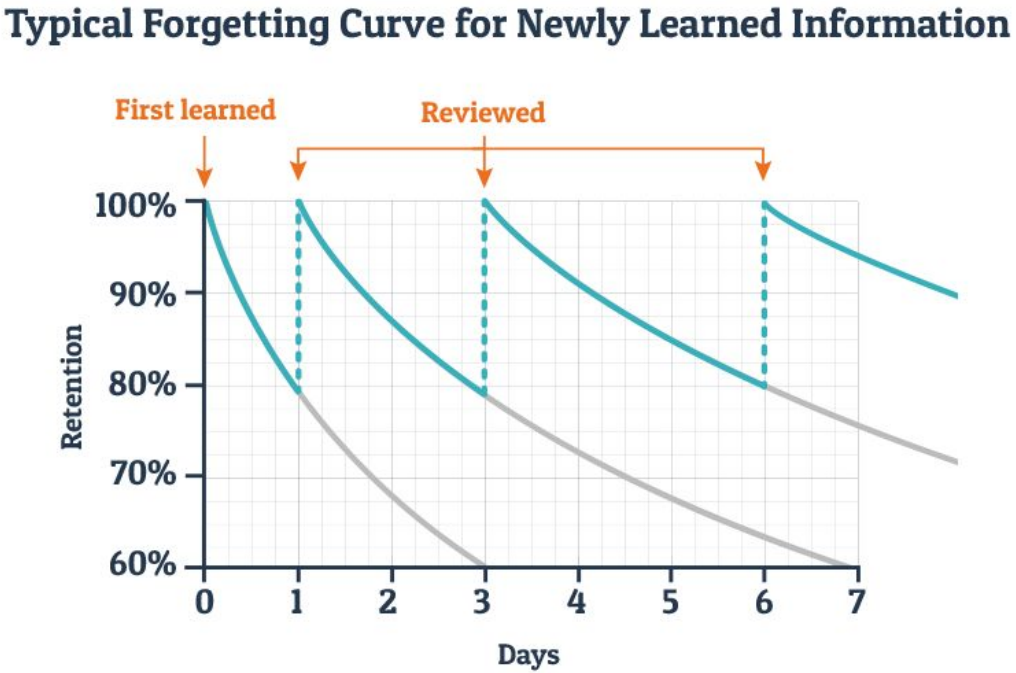
N

N

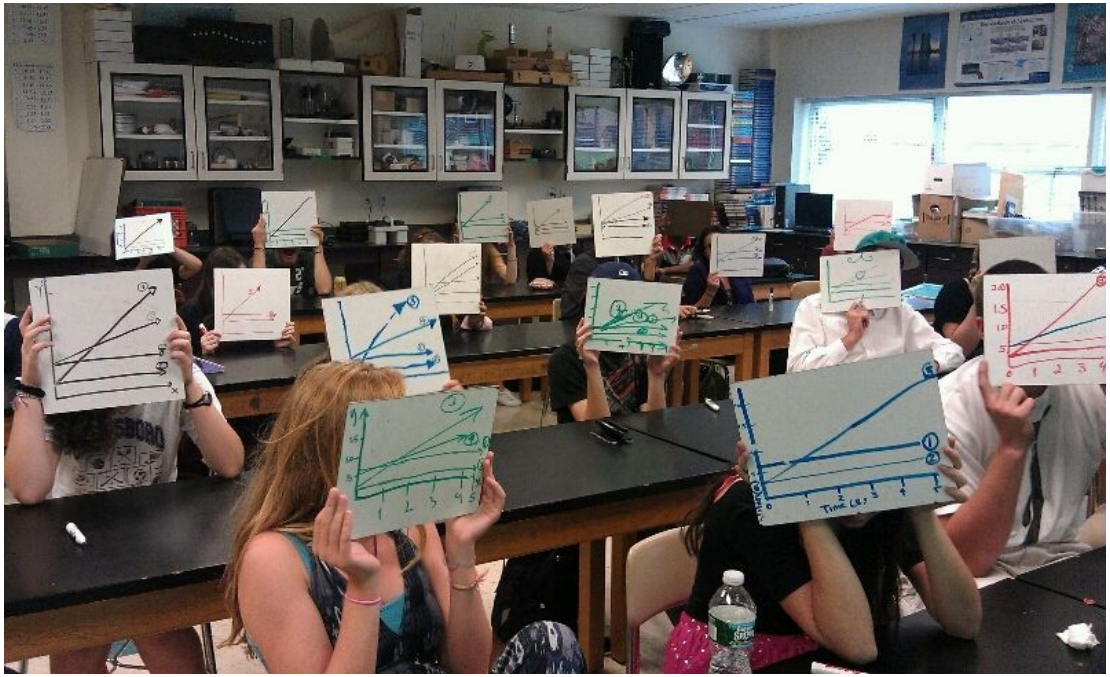
P Cor

Pr

Amygdala
Cognitive load
Corpus Callosum
Hippocampus
Limbic System
Myelination
Neuroplasticity
Neurotransmitters
Prefrontal cortex
Pruning



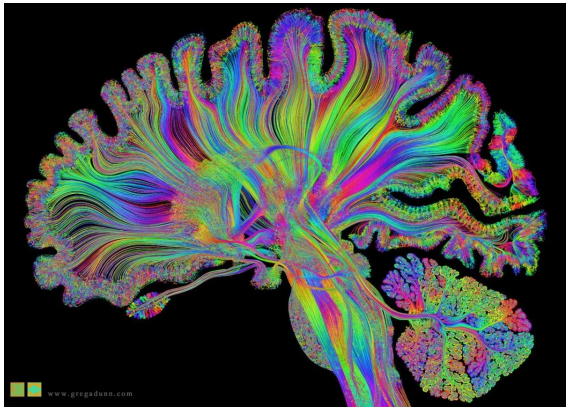
“All in”
Low technology
CFUs



Multiple modality and multiple sensory Instructional Design: Engages More Neural Pathways

The brain processes information through **multiple channels** (visual, auditory, kinesthetic, tactile).

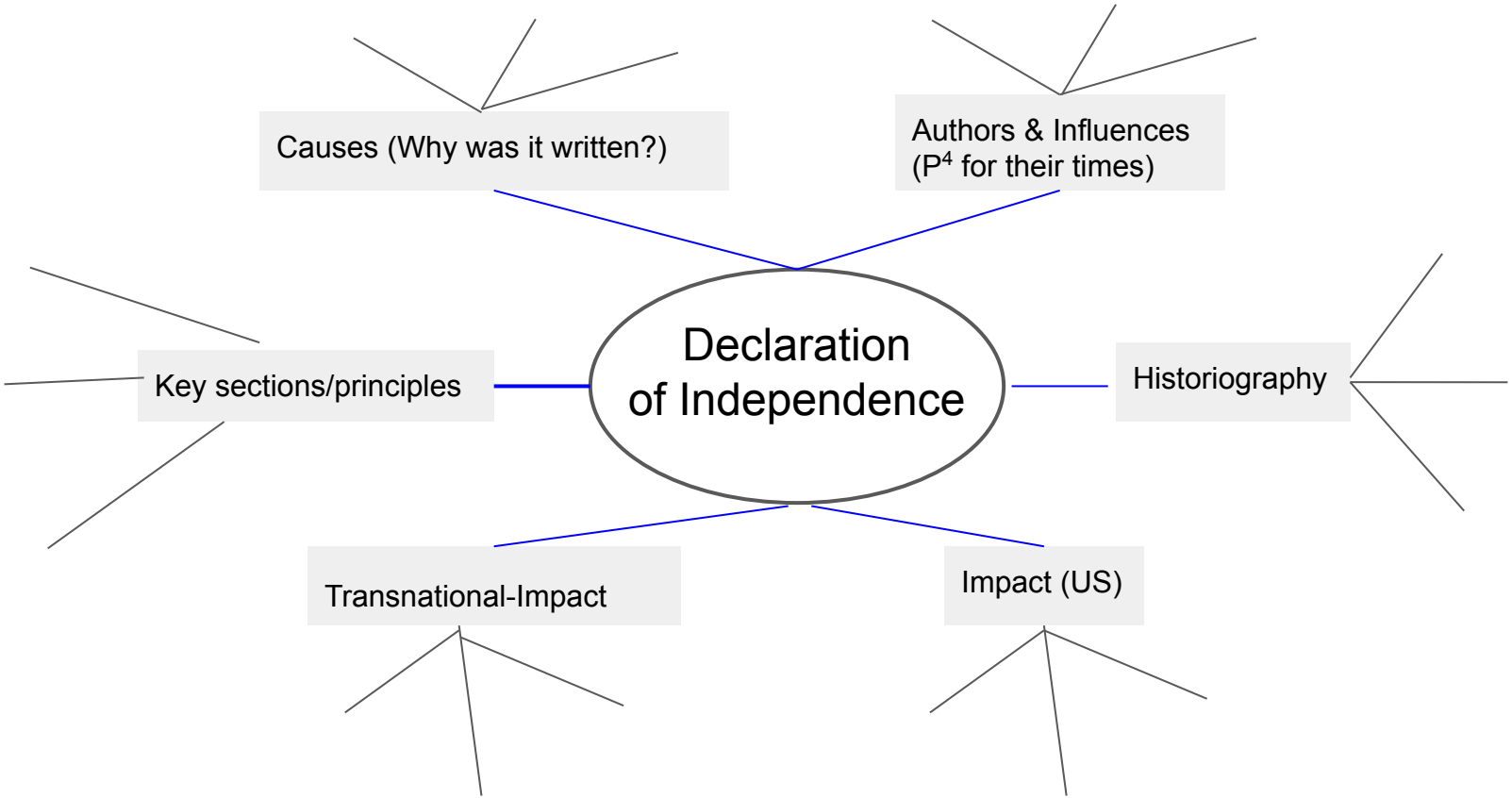
When students engage in learning using more than one modality, they **activate more neural connections**, strengthening memory and comprehension (Mayer, 2009; Sousa, 2017).

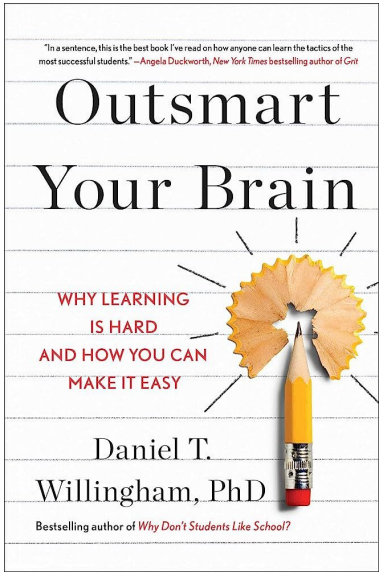


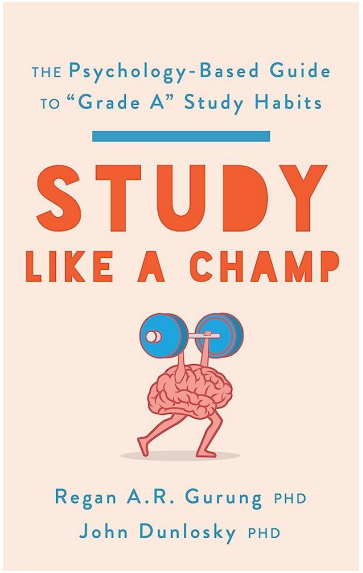
MULTIPLE MODALITY NOTE TAKING

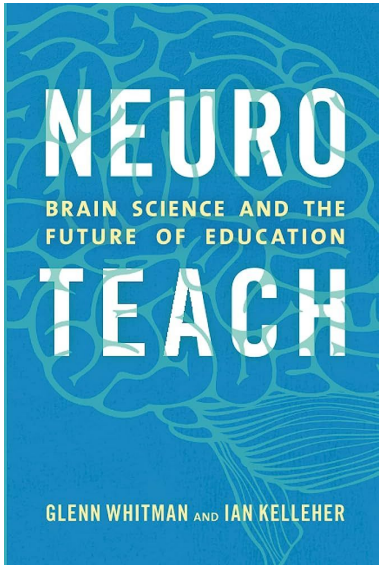
"One day into dual coding"

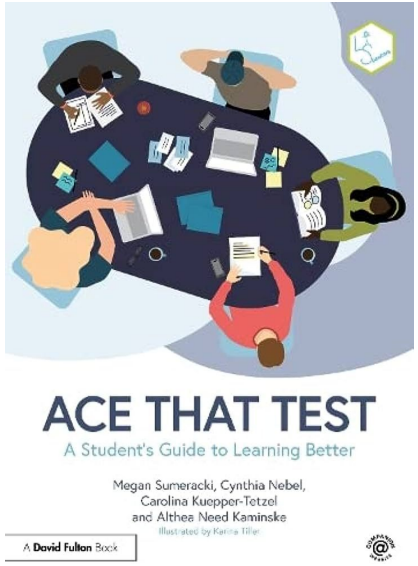
From the blog, *The Effortful Educator: Applying Cognitive Psychology to the Classroom*


Causes (Why was it written?)
Authors & Influences
(P4 for their times)
Key sections/principles
Declaration
of Independence
Historiography
Transnational-Impact
Impact (US)

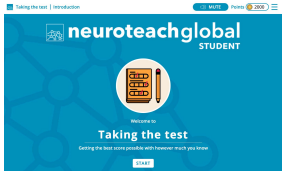


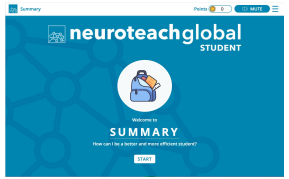






Neuroteach Global Student from the CTTL:
https://www.thecttl.org/neuroteach-global-access-program/





Brain Changing Deeper Dive

Belonging as a Condition for Learning, Growth, Development and Achievement

The emotion and cognitive areas of the brain are highly interlinked, so emotional factors, like stress, anxiety, happiness, and belonging need to be considered when thinking about ways to improve learning.

TRUE

FALSE

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The emotion and cognitive areas of the brain are highly interlinked, so emotional factors, like stress, anxiety, happiness, and belonging need to be considered when thinking about ways to improve learning.

TRUE

Emotion uses many of the same areas of the brain that learning uses. When a student is learning, emotion and cognition are operating seamlessly in the brain. Learning is improved when teachers consider each student's emotional needs.

Citation: G

What is Belonging?

Belonging defined

"A universal human need that is fundamentally linked to learning and well-being. It describes an individual's experience of feeling that they are, or are likely to be, accepted and respected as a valued contributor in a specific environment. When students experience a sense of belonging in a learning environment, there are both immediate and long-term positive consequences for their academic performance and well-being."

Healey & Stroman, 2021

This should not surprise us

We used to believe that we were thinking beings who feel. We now know that **we are feeling beings who think**.

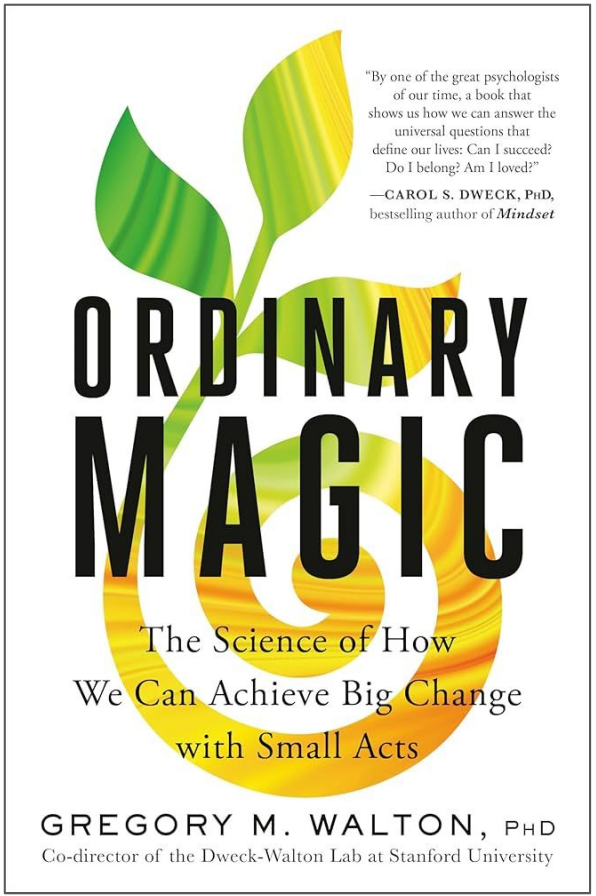
paraphrasing celebrated USC neuroscientist, António Damásio

Every child needs at least one teacher who has an **irrational** belief in them.

Paraphrasing Urie Bronfenbrenner,
psychologist and co-founder of Head Start

Gregory Walton Ph.D.

Michael Forman University Fellow and
Professor of Psychology at Stanford University

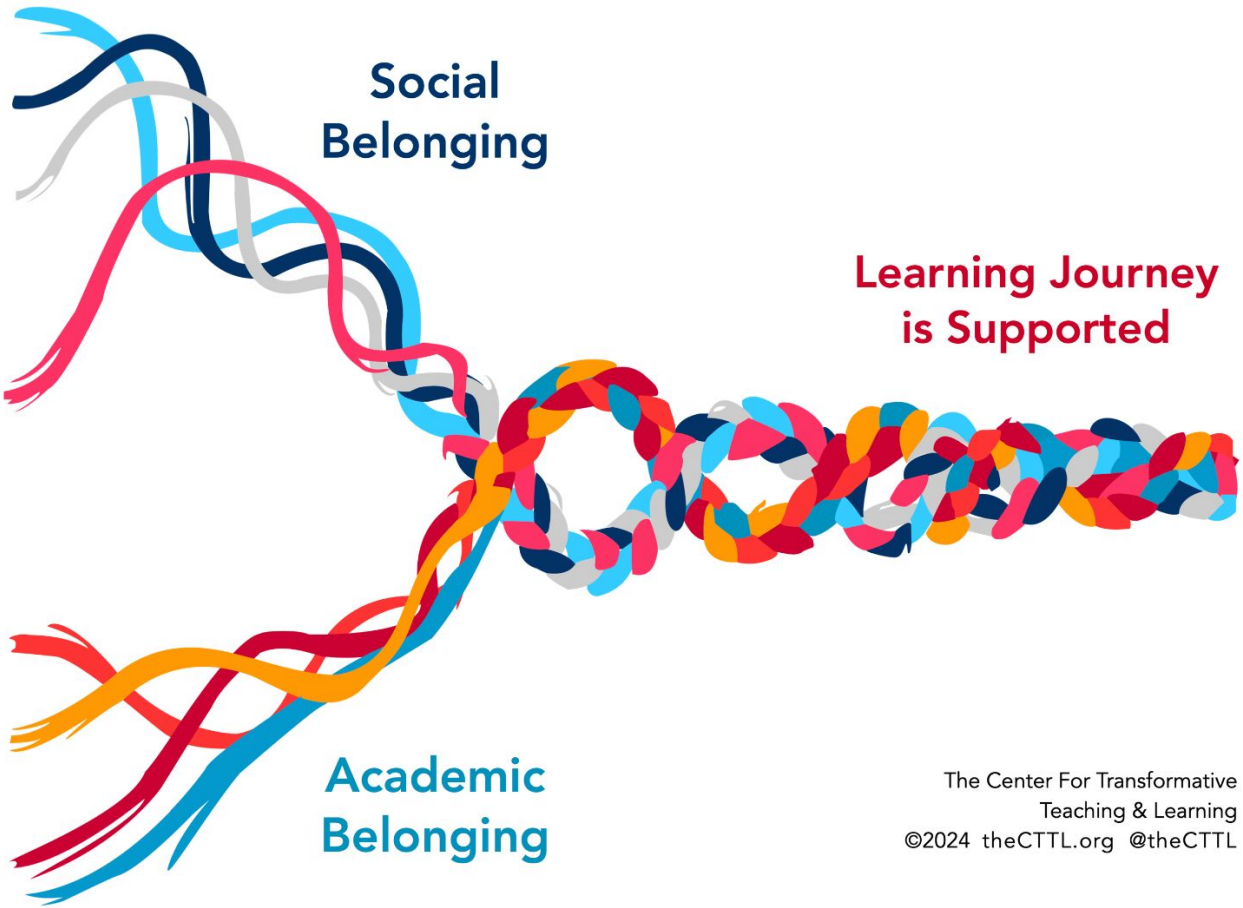


All Learning is Emotional, Social, and Cognitive

The Belonging Braid: Social Belonging & Academic Belonging are Interwoven

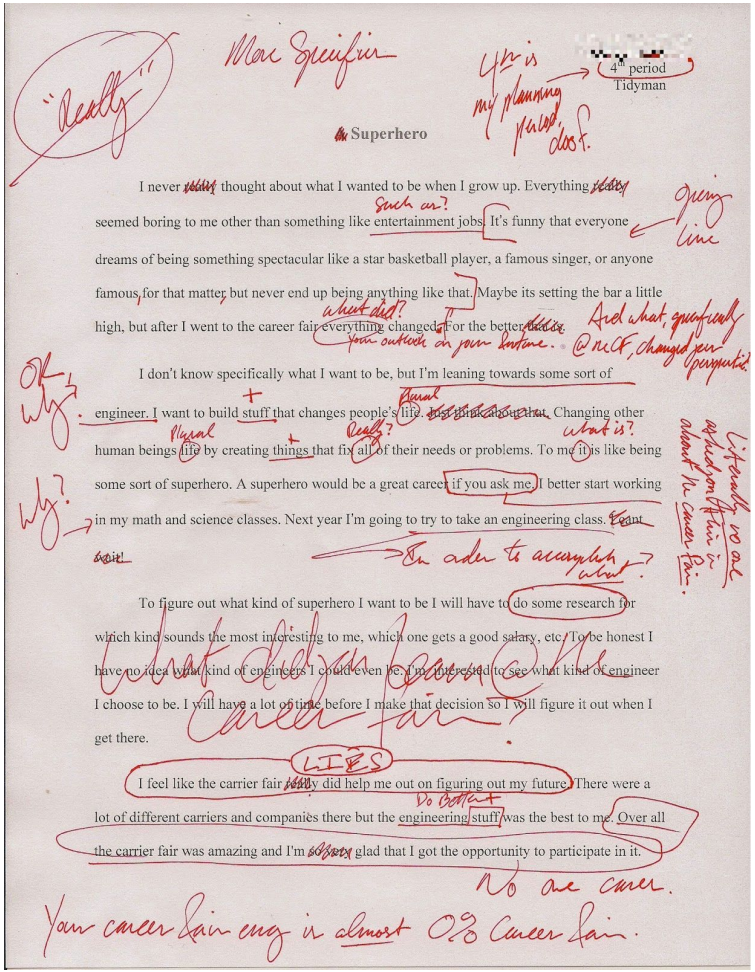
Social Identity
includes:
Race & Ethnicity
Gender
Age
Sexuality
Language
Socioeconomic Status
Religion
Family Structure
Ability
Neurodiversity
Curriculum & Pedagogy

Academic Identity
includes:
Neurodiversity
Effective Learning Strategies
Self Efficacy
Sense of Purpose & Relevance
Motivation
Feedback (receiver & giver)
Creativity
Voice
Curriculum & Pedagogy



The Center For Transformative Teaching & Learning

What do you think of this?



[redacted] 4th period
Tidyman

Superhero

I never really thought about what I wanted to be when I grow up. Everything really seemed boring to me other than something like entertainment jobs. It's funny that everyone dreams of being something spectacular like a star basketball player, a famous singer, or anyone famous, for that matter, but never end up being anything like that. Maybe its setting the bar a little high, but after I went to the career fair everything changed. For the better, but it

I don't know specifically what I want to be, but I'm leaning towards some sort of engineer. I want to build stuff that changes people's life. Just think about that. Changing other human beings life by creating things that fix all of their needs or problems. To me it is like being some sort of superhero. A superhero would be a great career if you ask me. I better start working in my math and science classes. Next year I'm going to try to take an engineering class. I can't wait!

To figure out what kind of superhero I want to be I will have to do some research for which kind sounds the most interesting to me, which one gets a good salary, etc. To be honest I have no idea what kind of engineers I could even be. I'm interested to see what kind of engineer I choose to be. I will have a lot of time before I make that decision so I will figure it out when I get there.

I feel like the carrier fair really did help me out on figuring out my future. There were a lot of different carriers and companies there but the engineering stuff was the best to me. Over all the carrier fair was amazing and I'm so very glad that I got the opportunity to participate in it.

What do students need to make feedback useful?

- Emotionally, I take the feedback well
- The feedback is timely
- It's the right amount – not too much
- I can understand the feedback
- I know what my next step is
- I have a chance to use the feedback
- My teacher believes I can improve as a learner

"You made a strong effort explaining the causes of the Civil War! Let's build on that by making your argument even clearer with more specific evidence. Keep going—you're on the right track!"

"This is confusing and doesn't make sense. You need to redo it."

Students receive the feedback well, emotionally

You mention 'taxes' as a cause of the American Revolution. Try naming a specific tax, like the Stamp Act, to make your point stronger."

"Your argument lacks coherence and is insufficiently supported by primary sources."

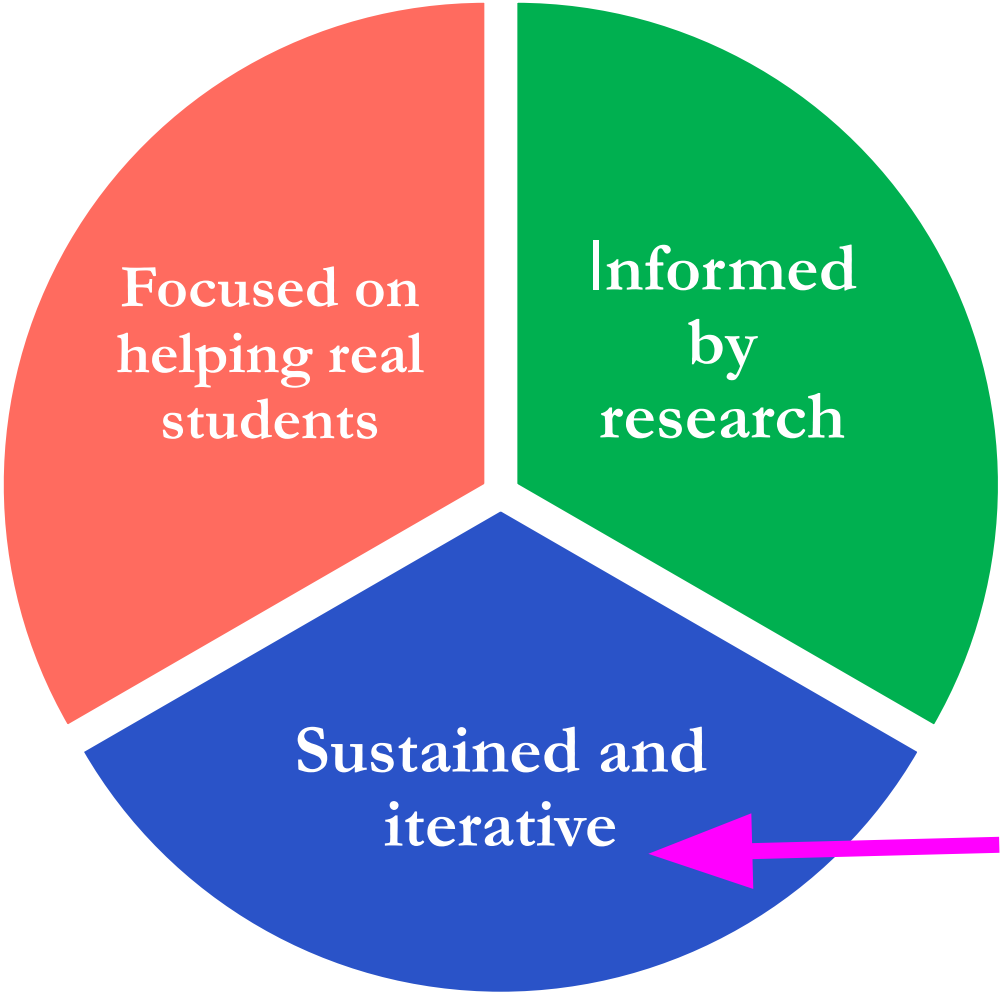
Students can understand the feedback

Before this session I used to think

_____

but now, after this session, I am thinking

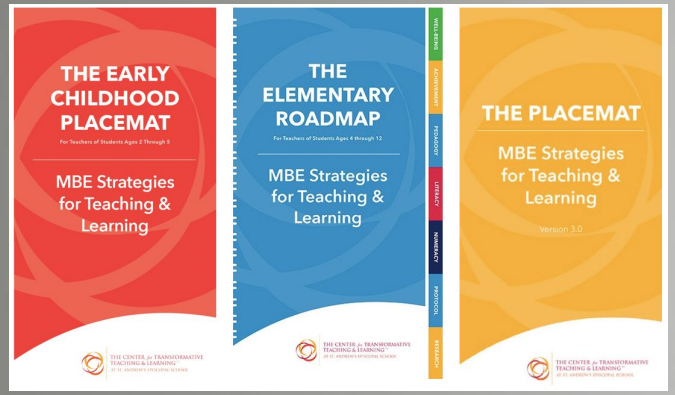
_____.

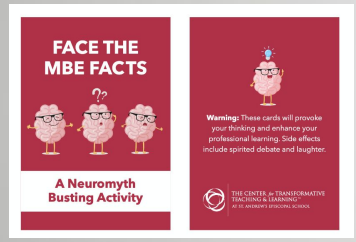


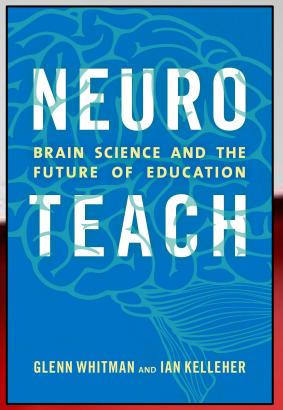
WHAT MAKES GREAT PD?

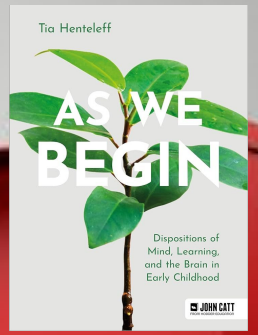
Leads to you thinking and doing differently

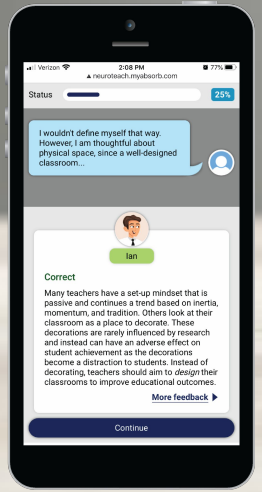
Teacher Development Trust (2015)

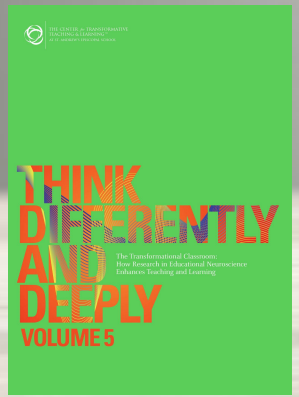


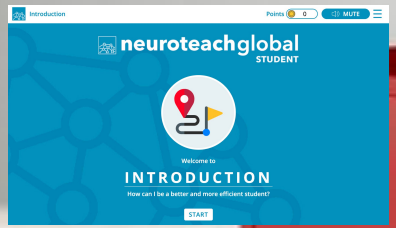


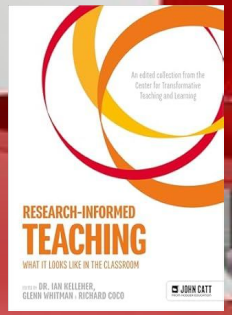




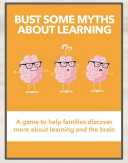


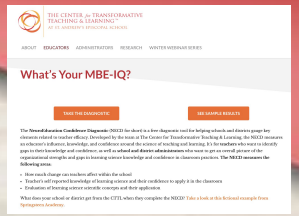




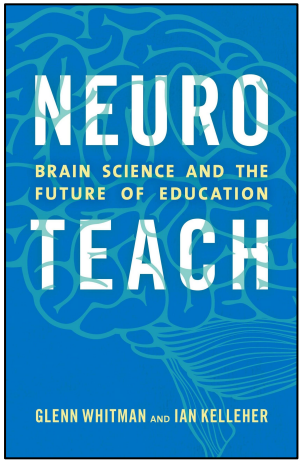


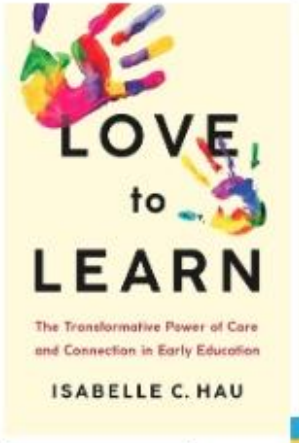
Research Base

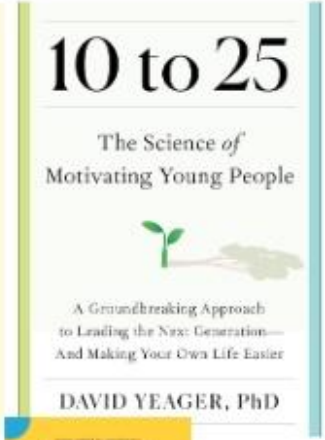


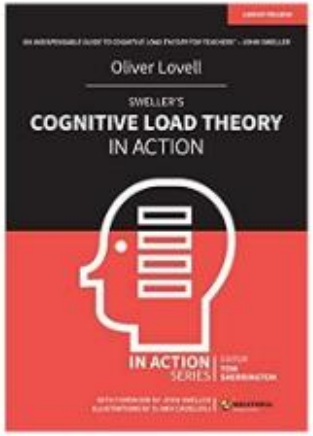


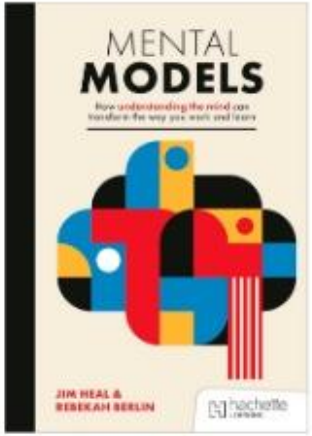
Available at www.thecttl.org

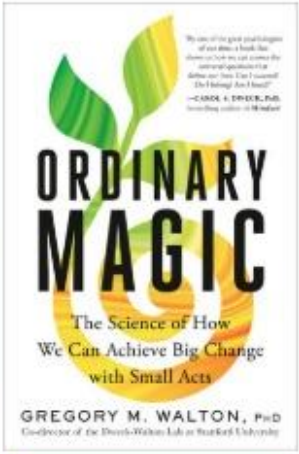

NEURO
BRAIN SCIENCE AND THE FUTURE OF EDUCATION
TEACH
GLENN WHITMAN AND IAN KELLEHER

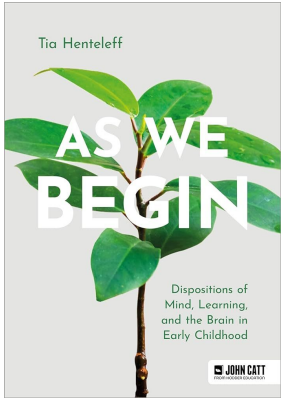

LOVE to LEARN
The Transformative Power of Care and Connection in Early Education
ISABELLE C. HAU


10 to 25
The Science of Motivating Young People
A Groundbreaking Approach to Leading the Next Generation—And Making Your Own Life Easier
DAVID YEAGER, PhD

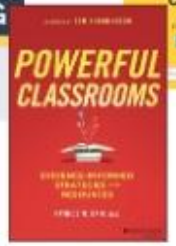

Oliver Lovell
SWELLER'S
COGNITIVE LOAD THEORY IN ACTION
IN ACTION SERIES


MENTAL MODELS
JIM HEAL & REBEKAH BERLIN
hachette


ORDINARY MAGIC
The Science of How We Can Achieve Big Change with Small Acts
GREGORY M. WALTON, PhD


Tia Henteleff
AS WE BEGIN
Dispositions of Mind, Learning, and the Brain in Early Childhood
JOHN CATT

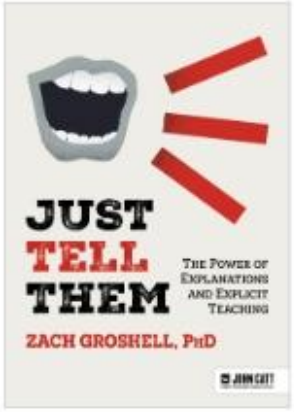

DEVELOPING EXPERT TEACHING
Peps Mccrea

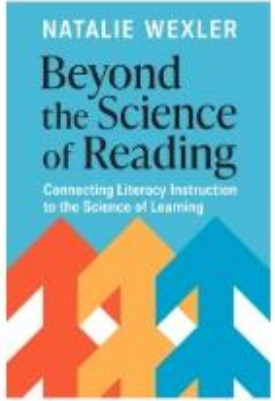

POWERFUL CLASSROOMS


The Homework Conundrum


Do I Have Your Attention?


TEACH FAST
FOCUSED ADAPTABLE STRUCTURED TEACHING
Gene Tavernetti, Ed. D.


JUST TELL THEM
THE POWER OF EXPLANATIONS AND EXPLICIT TEACHING
ZACH GROSKELL, PhD
JOHN CATT


NATALIE WEXLER
Beyond the Science of Reading
Connecting Literacy Instruction to the Science of Learning

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SCIENCE OF TEACHING AND SCHOOL LEADERSHIP ACADEMY | JULY 15-18, 2024
The Academy is the Center for Transformative Teaching & Learning's flagship Mind, Brain, and Education (MBE) conference for pedagogical, leadership, and professional development. The Academy is an opportunity to invest in understanding how the brain learns and how to create learning experiences that help all students of all ages flourish.

USA FESTIVAL OF EDUCATION | SEPTEMBER 28, 2024
The Festival of Education, a renowned event created by Wellington College in the UK, is set to take place for a second time in the USA in 2024. Aimed at educators, this Festival provides an unparalleled platform for teachers to learn, grow and connect with other like-minded individuals in the field of education. Learn more at https://educationfestusa.com/.

3 SECRETS TO ELEVATING YOUR TEACHING | OCTOBER 24, 2024
Glenn Whitman, CTTL Director, will share key strategies - based on the science of how the brain learns - that enhance teacher effectiveness and create more opportunities for students to find success. Email us at info@thecttl.org to request the recording of this webinar.

WINTER WEBINAR SERIES | JANUARY 30, FEBRUARY 6, AND FEBRUARY 13, 2025
The Winter Webinar Series is a space we dedicate to sharing our research connecting Mind, Brain, and Education science (MBE) with Belonging (DEB). This year's theme is Belonging and the Brain: Creating Conditions for Student Achievement. Learn more at https://thecttl.org/winter-webinar-series-2025 .

CTTL SPRING MBE WEBINAR | APRIL/MAY 2025
Join members of our research team and guest collaborators to review the fundamentals of MBE or deep dive into a particular topic within the discipline. This is a free learning event.

SCIENCE OF TEACHING AND SCHOOL LEADERSHIP ACADEMY | JULY 14-17, 2025
Gain insights from a curated group of leading researchers, seasoned educators, and thought leaders while engaging with hundreds of fellow teachers and school leaders from diverse educational settings worldwide. This is the only place to get the CTTL's MBE Strategies tools. Learn more at thecttl.org/2025-academy .

Learn more about these events and other CTTL resources at https://thecttl.org.
Email us at info@thecttl.org for support.

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SCIENCE OF TEACHING AND SCHOOL LEADERSHIP ACADEMY

July 14-17, 2025 | 9-4 p.m. ET

St. Andrew's Episcopal School (MD),
Frederick County Public Schools (MD), and Virtual

Exciting news!
The CTTL's flagship annual learning event returns to the St. Andrew's campus and Frederick County Public Schools in July. Join hundreds of K-12 teachers and school leaders to learn how to apply research on topics like metacognition, feedback, executive functioning, and belonging to your teaching practice. Engage in daily translation group sessions to create plans for how you can take your students' learning to the next level. This is a professional learning experience created by teachers for teachers, and the Academy is the only place you can get our exclusive research-to-practice tools. Early registration will be open from February 14 - April 26. Visit our website for registration rates.

www.thecttl.org Email **info@thecttl.org** for more information.

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Thank You!

Stay in touch

Glenn Whitman
gwhitman@saes.org
https://www.linkedin.com/in/gwhitman/