

# **Teaching With Learning in Mind**

**Ann Anzalone**

**[ann.anzalone@gmail.com](mailto:ann.anzalone@gmail.com)**

# Making a Good Brain Great

**Dr. Daniel Amen M.D.**

**Prefrontal Cortex:** houses the ability to learn from mistakes, make plans, match our behavior over time to reach our goals; it is the part of the brain that as Jiminy Cricket says “is the still small voice that helps you decide between right and wrong”

**Anterior Cingulate Gyrus:** helps you feel settled, relaxed and flexible; the brain’s gear shifter; is responsible for cognitive flexibility; shifts attention; cooperation; implicated in “future oriented thinking” such as planning and goal-setting

**Deep Limbic System:** sets a person’s emotional tone; less active = positive, more hopeful state of mind; provides the filter through which you interpret the events of the day; stores highly charged emotional memories

**Basal Ganglia:** integrates feelings, thoughts, and movements; sets body’s idle or anxiety level; high basal ganglia is associated with conflict-avoidant behavior; anxiety and physical stress symptoms such as headaches, intestinal problems, and muscle tension

**Temporal Lobes:** involved with language, reading social cues, short-term memory, getting memories into long-term storage, processing music, tone of voice and mood stability; recognizing objects by sight and naming them; spiritual experience and insight

**Cerebellum:** involved with processing speed, thought coordination, how quickly cognitive and emotional adjustments are made; motor coordination, posture, poor handwriting, problems organizing, sensitive to light, noise, touch, clothing, being clumsy or accident prone

**The best sources of stimulation for the brain are:**

**p\_\_\_\_\_e\_\_\_\_\_, m\_\_\_\_\_e\_\_\_\_\_ and  
s\_\_\_\_\_b\_\_\_\_\_.**

**Repeated muscle activity is the single most important element of brain development.**

**The brain's in synch timing mechanism is the foundation of all thinking, movement, behavior, sensory responses, vital functions and digestion.**

**Balance is the core of functioning.**

# Attention

**Dr. David Walsh**

- **Reactive attention:** connected to the emotional system; involuntary, hardwired, automatic, instinctive; responds to movement, sudden change and emotion
- **Focused attention:** connected to the prefrontal cortex; **needs to be developed**, helps to develop critical thinking skills, reflection, synthesis, critical analysis
- prefrontal cortex is responsible for thinking ahead, considering consequences, assessing risks, managing emotional impulses and urges
- focuses on one thing at a time sequentially.

**Attention is the spotlight that picks out and concentrates on a specific stimuli.**

Develop attention by playing cards, board games, concentration games, chess, scrabble, puzzles, reading, spinning, swinging, following routines and setting specific times meals, rest, sleep

**Neurons that wire together; fire together.** Donald Hebb

**Memory is the key to learning.**

**encode  
store  
retrieve  
remember**

Memory scaffolding is built by **conversation**; the more elaborate the scaffolding, the more knowledge the child has.

**The key to language success is conversation.  
Language develops with repetition and practice.**

**Words are the tools of thinking.**

- talk; have conversations
- Word of the Day
- play word games
- look up words
- read Reading reinforces how the brain organizes itself to think.
- retrieve memories by answering questions
- talk about people and events in the here and now
- tell stories; recall experiences

# High Return Achievement Factors

## Eric Jensen

- S \_\_\_\_\_ E \_\_\_\_\_

Every single student needs 3 things entering and leaving the classroom every day...

- Eye contact
- A smile
- A hand shake or friendly, safe physical contact

Scott Ervin Kid Whisperer Love and Logic

- Hope and growth mindset
  - ✓ **Hope mindset** takes risks, confronts challenge, keeps working; develops
    - perseverance and resilience
    - looks for themes and underlying principles, goes over mistakes
  - ✓ **Fixed mindset** throws up hands, risk and effort not factors;
    - reads class notes, memorizes;
    - no recipe for healing the emotional wound, revenge, get even
    - if you have to work at it, it wasn't meant to be;

- F \_\_\_\_\_

- Relationships

- T \_\_\_\_\_ S \_\_\_\_\_

- Vocabulary instruction and test scores are correlated with increased gray matter density. Lee H. Devlin et al. Anatomical traces of vocabulary acquisition in the adolescent brain. J Neurosci, Jan 31:27 (5) 1184-9
- Changing pre-test state with free 10 minute writing activity boosted test scores 5-17% Write how feeling about upcoming test  
Ramirez G and Beilock SL. 2011 Writing about test worries boost exam performance in classroom Science Jan 14: 331 6014 211-3

## The new science of skill building is n \_\_\_\_\_.

The rules are

1. Students must buy in to it. Skills must be coherent to the student.
2. Students' brains need error correction.
3. Students need skill practice 5-10 minutes /day for 8-15 weeks.
4. Skills must be of increasing difficulty. Greater complexity means better transference.
5. Once students get it right, they still need repetition.
6. Skill building needs to be in all subject areas.

# Mind Power

Knowledge and skill are keys to the 21st century.

Jim Kwik

Stop outsourcing your brain to technology. If you don't use it, you lose it. If you live in a knowledge economy, you can't be mentally lazy. Jim Kwik

...as a society we are knowledge rich and wisdom poor.

Mark Grossman [Managing With Wisdom](#)

Reason precedes results. Start with “why?”.

**Learning is remembering.**

Socrates

# Working Memory

## Brain speed

- is how fast the brain processes what is going on, around and within you
- determines attention, alertness, learning, memory, decision making, problem solving, mental clarity
- determines how efficiently the mind works.
- reflects how quickly memories can be recalled, questions answered, problems solved and decisions made.
- the faster your brain processing speed, the more focused you are, the more you take in and learn, the more you remember, the quicker you make sound, split-second decisions and react
- the faster you can mentally recite or rehearse long list of items, the better you remember

Joshua Reynolds, Robert Heller, M.D, and Christine Macgenn Rodgerson.  
[Living Longer Thinking Younger](#). CA: BriteAge Corp. 2005-2007.

**Play games like: Jeopardy, Concentration, Memory, Boggle** [www.wordsplay.net](http://www.wordsplay.net),  
**Scrabble, Set** (set daily puzzle [www.setgame.com](http://www.setgame.com))

**Work puzzles, word searches, Sudoku**

**Answer Questions** [www.freerice.com](http://www.freerice.com)

**Do mental math.**

**Memorize poems.**

**Make ABC lists.**

**Read aloud.**

# Students do not learn based on their learning styles.

## How do they learn?

1. Learning opportunities: ch \_\_\_\_\_, building on p \_\_\_\_\_  
k \_\_\_\_\_, making c \_\_\_\_\_  
and t \_\_\_\_\_ learning
2. Different kinds of instruction: a \_\_\_\_\_ l \_\_\_\_\_,  
g \_\_\_\_\_ w \_\_\_\_\_,  
i \_\_\_\_\_ teaching strategies.
3. Metacognition: activities to help students make  
c \_\_\_\_\_, process c \_\_\_\_\_,  
draw c \_\_\_\_\_.

**Students learn best in social classroom environments, working together to articulate understanding, recognize misconceptions and hone communication.**

## What does work?

The most effective way to learn is based on the nature of the material being taught.  
Teachers teach students to remember meaning, independent of seeing or hearing.

1. Sp \_\_\_\_\_ p \_\_\_\_\_. Review: 10 minutes after,  
1 day after, 1 month after, 3 months after learning
2. Switch. I \_\_\_\_\_ among topics. What's similar? Link ideas
3. A \_\_\_\_\_, ex \_\_\_\_\_, c \_\_\_\_\_ to daily life . How? Why?
4. Use sp \_\_\_\_\_, c \_\_\_\_\_ e \_\_\_\_\_. Human  
memory remembers concrete better than abstract information.
5. D \_\_\_\_\_ c \_\_\_\_\_ auditory: how words describe; visual: how  
images represent information.
6. R \_\_\_\_\_ p \_\_\_\_\_. Recall what you know.  
Writing what you remember reinforces what you learned. Practice answering questions;  
take practice tests. Learning improves with practice.

<https://www.youtube.com/user/memorizeallements>

## 6 Habits of Organized Students

Kyle Buchanan

1. Keep it simple.
2. Develop routines.
3. Place for everything, everything in it's place.
4. To do list, current and detailed; deadlines
5. Do what's important. Prioritize tasks
6. Toss things daily. Purge routinely

<https://ctl.yale.edu/LearningStylesMyth>

<https://ctl.yale.edu/FacultyResources/Student-Learning>

<https://www.scientificamerican.com/article/the-problem-with-learning-styles/>

<https://www.theatlantic.com/science/archive/2018/04/the-myth-of-learning-styles/557687/>

<https://www.theguardian.com/education/2017/mar/12/no-evidence-to-back-idea-of-learning-styles>

<http://vark-learn.com/the-vark-questionnaire/>

<https://www.youtube.com/user/memorizeallements>

[https://www.youtube.com/watch?v=o\\_SQrRa73U0&vl=en](https://www.youtube.com/watch?v=o_SQrRa73U0&vl=en)

[https://www.youtube.com/watch?v=0nFkQ4cQhME&index=4&list=PLguLDsaCk2rN\\_wHawqzdf-bTyDdkmf0nP](https://www.youtube.com/watch?v=0nFkQ4cQhME&index=4&list=PLguLDsaCk2rN_wHawqzdf-bTyDdkmf0nP)

[https://www.youtube.com/watch?v=CPxSzxylRCI&list=PLguLDsaCk2rN\\_wHawqzdf-bTyDdkmf0nP](https://www.youtube.com/watch?v=CPxSzxylRCI&list=PLguLDsaCk2rN_wHawqzdf-bTyDdkmf0nP)

<https://www.wired.com/2015/01/need-know-learning-styles-myth-two-minutes/>

# Memory is the key to learning.

The art of \_\_\_\_\_ is the art of thinking.

William James

As we build up our personal stores of \_\_\_\_\_, our minds become sharper.

Long term memory is the seat of \_\_\_\_\_. Long term memory stores facts and complex concepts or schemas by organizing scattered bits of information into \_\_\_\_\_ of knowledge.

Nicholas Carr The Shallows

## Make It Stick

Mark McDaniel, Henry L. Roediger III and Peter Brown

Learning is deeper and more durable when it requires e\_\_\_\_\_.

Learners are susceptible to the “I \_\_\_\_\_ of K \_\_\_\_\_.” They \_\_\_\_\_ not \_\_\_\_\_ what they \_\_\_\_\_ not \_\_\_\_\_.

Learning requires p\_\_\_\_\_ k\_\_\_\_\_.

When k\_\_\_\_\_ is entrenched in l\_\_\_\_\_ memory, it supports the learner’s ability to make c\_\_\_\_\_.

Provide constructive f\_\_\_\_\_.

Incorporate f\_\_\_\_\_ t\_\_\_\_\_.

R\_\_\_\_\_ what you learned makes learning stronger.

Taking notes by \_\_\_\_\_ provides opportunity for \_\_\_\_\_.

Mark McDaniel, Henry L. Roediger III and Peter Brown. Make It Stick. 2014.



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