Wiring the Brain to Read: Practical Strategies for Increasing Reading Comprehension

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Goals for Session

- And, create one page sheet 😊
- Also check Diane’s reading boy.
- Comprehension 😊
Great News from the National Research Council!

* Learning and reading change the physical structure of the brain.
* The brain can get better with age.
  * A 20% increase in cognitive activity such as reading resulted in a reduction of the risk of Alzheimer’s Disease by 33%.

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Literacy Brain Fact 1:
One Hundred Billion Neurons

* Guide students to make new neuronal connections with...
  * Novelty
  * Challenge
  * Practice
  * Feedback

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Neural connections are sparse at birth (left), but new connections are made at a terrific rate during infancy and by the age of six (middle) they are at maximum density. Thereafter they decrease again as unwanted connections die back. (right.) Adults can increase neural connections throughout their life by learning new things. But if the brain is not used the connections will become further depleted.
Neuroscientist David Eagleman states that there are as many connections in a single cubic centimeter of brain tissue as there are stars in the Milky Way Galaxy.
Ensure students have reading materials that allow them to experience success at 98-100% accuracy so they can learn to enjoy reading independently often.

Allington, R.L. *What Really Matters in Response to Intervention*
Smart Pegs Strategy:
Using the 4 Elements to Remember What You’ve Read

* Featuring 3 Keys to Memory:
  * Location
  * Imagination
  * Celebration

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The BrainSMART formula for increasing student achievement

Process x Content = Results
(How we Teach) x (What we Teach) = (Learning)

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Process: Smart Pegs
Content: 10 Foods For Reducing Real Age

- Blueberries
- Nuts
- Salmon
- Broccoli
- Bananas
- Frozen Yogurt
- Olive Oil
- Brown Bread
- Spinach
- Tomatoes
Retention Probability Index

In BrainSMART: 60 Strategies for Increasing Student Learning
Graduate from ... Brain-Based Teaching: Reading & Literacy

Diane Dahl @ For The Love Of Teaching.net
Vocabulary Strategy: Wordscape

- Teacher selects words that are key to comprehension
- Students act out the definitions in different parts of the room
- Then review
Literacy Brain Fact 2: Two Systems for Reading

*Emotion and Images

“Emotions are the gateway to cognition.”

*Words, Cognition, and Comprehension
When we see someone model something, the same neurons they used are activated in our own brains.
Brain Studies

Seeing a picture of someone showing disgust (top left) automatically triggers activation in the part of the observer’s brain that reacts when they feel disgusted themselves (top right). And the more intense the expression they see (bottom left), the more active their brains (bottom right).
Connect to the Excitement of Reading!

Model a passion for reading so students imitate how you love to read.
Strategy: Launch Smart

- Teacher starts reading print with passion and excitement.
- Students then read silently by themselves.
Approximately 2% of body weight burns roughly 25% of body’s glucose.

Body needs Glucose and Oxygen to think.

Movement and exercise are keys to focus during class.
Incorporating exercise and movement throughout the school day makes students less fidgety and more focused on learning.

Donna Wilson, Ph.D.
www.Edutopia.org
Movement & Stretching Before and/or After Reading Helps Students Focus

- READING Eyes
- SMART Cross
- SKY Cross
- KNEE Cross
- EAGLE Cross

http://www.brainsmart.org/-Brainobics

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Strategy: Improving Focus By Using Movement in Lessons

Have a spelling bee in which teams of students spell vocabulary words by positioning their bodies in the shapes of letters

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Literacy Brain Fact 4: The Brain Creates Meaning through Different Pathways

For example:
- Seeing
- Hearing
- Experiencing (Kinesthetic)
- Tactile

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Comprehension Strategy: Chapterscape

- Act out key elements of a chapter
- Use nonlinguistic learning
- Great way to build elements of a story
- Develop plot, characters, and motivation

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Strategy: Character Smart

Making meaning with visual and kinesthetic experiences

* Student selects a character from a book

* They then prepare and perform a short dialogue
Dressed in a large blue windbreaker supplemented by a couple of pillows, a fourth-grade boy transformed himself into Augustus Gloop from Charlie and the Chocolate Factory. His brief script began, “I am Augustus Gloop...” He then summarized his various dilemmas in a two-minute performance.
Comprehension Strategy: Talk show

- Students pretend to be a character from a book
- They are interviewed on a talk show by another student.
For example...

- Listening
- Predicting
- Comparing
- Inferring
- Summarizing
Teach Students How to Pay Attention

- H.alt
- E.ngage
- A.nticipate
- R.eplay

*BrainSMART: 60 Strategies for Increasing Student Learning*
I help parents and grandparents understand that if they help their children learn to use thinking strategies they’ll be able to transfer that into their school success and their personal lives.

Georgia Kindergarten Teacher, Brooke Bugg
We can help students to become expert at predicting by practicing this skill ...

* when we read aloud to them, and ask what’s going to happen next
* at home with our families during commercials: mute, recall, and predict.
Teachers and students alike enjoy this game of higher order thinking.

* Possible 45% Gain in Achievement

McRel Lab
In *Thinking for Results*
(Wilson & Conyers, 2011)
Comparisons: Fast Food

Subway’s 6-Inch Sub

- 260 Calories
- 5 Grams of Fat
- 1 Gram Saturated Fat

2.6 Miles

Cheese Fries with Ranch Dressing

- 3,010 Calories
- 217 Grams Fat
- 91 Grams Saturated Fat

30 Miles

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When learners use clues to make inferences, they are creators of new knowledge.

Only then are students able to become independent learners.

Explicitly teach students to read between the lines.
Strategy: Summarize

27% Gain in Achievement

McRel Labs
In Thinking for Results
Summarizing What We’ve Learned

- How many neurons does each brain have?
- What 4 strategies help make brain connections?
- What is the BrainSMART formula for teaching & learning? _______ \( \times \) _______ = _______
- What strategy did I teach you for remembering 10 words?
- What are 10 superfoods we learned?
- What other way did I show you for using the SMART Pegs?
- What type of neurons assist with imitation?
- Name 2 to 3 ways to increase passion for reading.
Summarizing . . .

* Let’s practice the 5 stretching and crossing exercises to get more movement/exercise into the school day.
* How you might get movement into a Spelling Bee game?
* How much does the brain weigh and what percentage of glucose does it burn?
* What 2 things does the brain need for fuel and focus?
* Name 3 of of the 4 sensory pathways for learning?
* Name the strategy we learned for teaching students to pay attention.
* What is the name of our visualization strategy for reading?
* How much academic gain might we see using comparisons strategy?
Staying Connected

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Use open questions to help students think about their book report.

Use a graphic organizer to put their ideas together.
Bonus if Time! Organizational Strategy: Bookweb

- Map out key aspects of a book
  - Characters
  - Place
  - Plot
- Encourage students to create bookwebs