15th Annual

Hawker Brownlow Thinking & Learning Conference

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DONNA WILSON

FRIDAY 18 MAY
Session 3

Making Lessons Stick

MELBOURNE

DR DONNA WILSON

Donna Wilson, PhD, is an educational and school psychologist whose work in cognitive education focuses on areas including cognition in the classroom, metacognition, attention, memory, motivation, and improving teaching and learning. She is an adjunct professor and lead developer of graduate programs with majors in brain-based teaching with Nova Southeastern University and head of academic affairs for the Center for Innovative Education and Prevention.

A message from Hawker Brownlow Education

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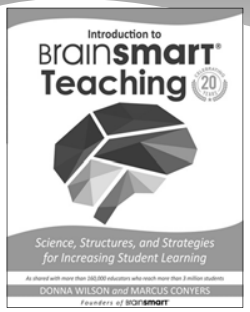
Making Lessons Stick

Have you ever found that even though you taught, taught and taught some more, many students did not retain important elements of the curriculum when it was assessment time? In this workshop, participants will discover how memory occurs in the brain and will learn about two practical frameworks for understanding how to enhance student retention. The presenter will model our popular tools such as "Memory Scape" and "Smart Pegs", and participants will leave with 10 practical strategies that can be used immediately. This toolbox of memory strategies both supports memorable engaging instruction with tools to assist teachers to guide students to become more independent learners.

Objectives and Outcomes:

- **How the brain remembers**
- **Two practical frameworks for helping students recall key information**
- **Ten memory strategies**

Making Lessons Stick



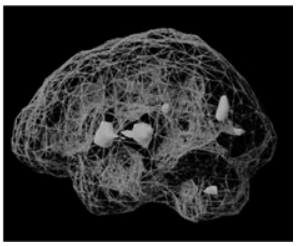
Donna Wilson, Ph.D.
Presentation adapted from her book, *Introduction to BrainSMART® Teaching.*

R.etention

Objectives and Outcomes

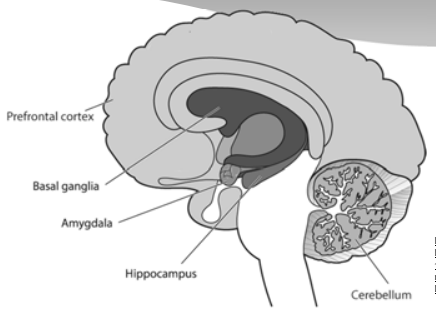
* How the brain remembers
* 2 practical frameworks for helping students recall key information
* 10 memory strategies

Some Great News!



* The brain can get better with age.
* Learning changes the physical structure of the brain.
* Learning memory strategies can help increase memory.
* And sometimes forgetting is OK. It allows us to prioritize easier.☺

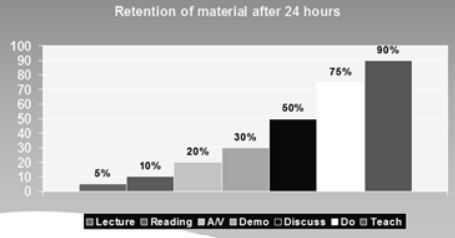
Memory in the Brain's Limbic System and Neocortex



http://donnawilsonphd.blogspot.com/2017/08/put-working-memory-to-work-in-learning.html

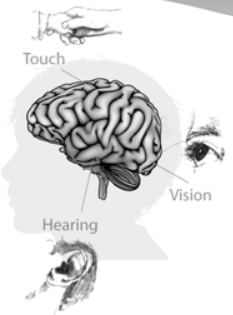
Strategy 1: The Memory Power of Tunes: A Personal Story

#1 Framework for Memory: Retention Probability Index



Adapted from King, A. (1993). "From sage on the stage to guide on the side." *Questia, 41*,1.

Teach so students use multisensory learning pathways.



- Lots of strategies we teach pair visual, kinesthetic, and tactile pathways with words and concepts to increase memory.

BrainSMART® Formula for Increasing Student Achievement

Process x Content = Results

Strategy 2: SMART Pegs [process]

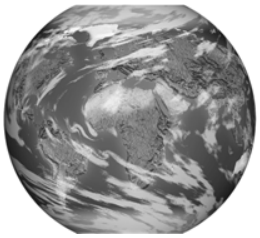
- Forehead
- Shoulders
- Chest
- Belly
- Hips
- Backside
- Thighs
- Knees
- Calves
- Toes

Strategy 3: Teach someone what you have learned.

Remember 90%

Facilitation

Based on the "Retention Chart," which of these learning/teaching strategies did we use in the "pegs" example?



A list of examples for uses for the **SMART Pegs** is endless. For example, memorizing the …

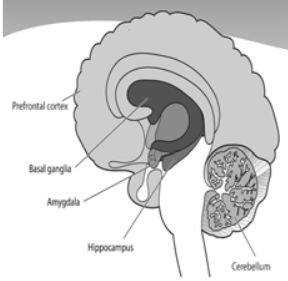
- Continents of the world—Ms. Carr
- Parts of speech—Mrs. Gelenas
- Business example—Dr. Conyers

Strategy 4: Take students on a real or virtual field trip.

This strategy is especially helpful for students who have had *limited experiences* that prepare them for school. The larger the experience base, the larger the cognitive schema or memory file on a topic.

* Think of a time when you had an experience such as a field trip? How much do you remember? Now think about a time when you were in a *boring* lecture [not all lectures are boring]. How much do you remember?

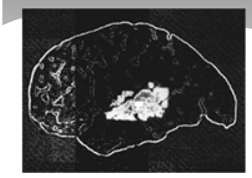
Short-term storage



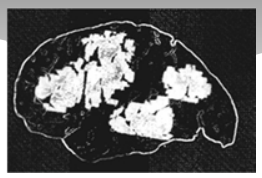
* When we take a weekend trip to visit friends or go to the beach, our brain stores a short-term memory of the experience the hippocampus. The memories are later "consolidated" in another part of the brain for longer-term storage.

www.sciencedaily.com/releases/2017/04/170406143936.htm

Strategy 5: Get them thinking so they'll remember!



The auditory cortex is activated during *listening*.



Activation occurs across the brain during *thinking about words* and *speaking*.

Student Choice, Thinking, and Memory

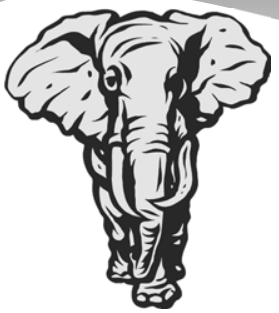
Allow student choice about topics, materials, and so on. Doing so goes a long way toward creating a classroom of motivated learners who enjoy thinking about the material and discussing what they are learning.

A helpful strategy can be to partner with a librarian to assist students to locate selections that include stories of people students feel kinship toward and who have overcome challenges to succeed.

Increasing Student Memory: Two Sides of the Memory Coin

* Teaching in ways that activate effective memory systems [songs & field trips]
* Equipping students with memory tools they need to retain key information [SMART Pegs & teaching another]

#2 Framework for Memory



- M.otor
- E.pisodic
- T.axon

Strategy 6: The Power of Location

Linking ideas to a location in the learning environment helps increase retention of important information.

- Math: Multiplication tables around the room walls in 9 stations.
- History: Map major WWII battles in various locations.
- Reading: Meet a story's main character in each corner of the room.

Bonus Strategy: Wordscape

- An example using location in the context of literacy...
- Teacher selects words that are key to learning academic content.
- Students act out the definition in a different part of the room.
- Then review.

Strategy 7: Eye Positions

- Memory strategy for all
- Spelling
- Diagnostic tool

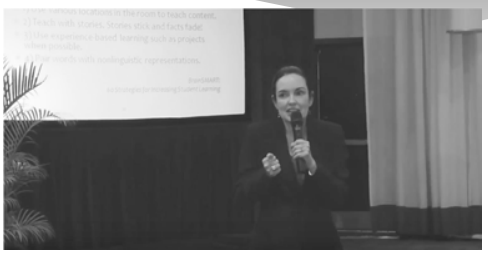
Practice: Eyes Up and Spell

In pairs, think of a word you have had trouble spelling over time.

Use the "eyes-up" strategy, and write your word in the air.

Imagine blue for the letters you know easily and orange for the difficult letters.

Strategy 8: Memory Scape



https://youtu.be/lgg_j7re7qE

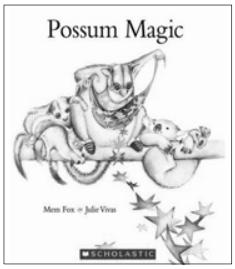
Bonus Strategy

Teacher Movement = Student Focus

When you move, it is easier for the students to focus on what you are communicating.

Strategy 9: Use Emotion as a Tool for Aiding Student Learning & Memory

A good story elicits emotion.



* Stories stick, and facts fade.
* Share your stories that help students learn and remember!

Games produce positive emotions.

* **Make a game of it.**

Children and youth love to play games. Card games like Concentration, Crazy Eights, and Uno can help to build working memory.

Learning with others can be a positive experience.

Strategy 10: Provide students with repeated opportunities to learn information over time.

Remember to repeat. Repetition over time helps to consolidate memory. Instead of covering a topic only once, revisit key ideas throughout the school year. Students perform better academically when given multiple opportunities to review important material each day and over time.

Use Year End Mapping [Learn more on Donna's blog]

* Teachers can incorporate a brief review of what was covered several weeks earlier into ongoing lessons, or do something more extensive such as what we call Year End Mapping.

Royal Roundup

Making Lessons Stick

Memory has long been viewed as a key part of learning. If students are to reap the benefits of effective teaching on tests and in other contexts of their lives, they must be able to use memory strategies when necessary. The toolbox of BrainSMART® memory strategies that I teach in our workshop are intended to increase both working memory and long-term memory.

Pragmatic and Scientific Basis

Most every teacher we have met knows the importance of long-term retention of key information they have taught. Thus, our innovative list of BrainSMART® strategies that utilize the brain's multiple pathways for encoding knowledge tends to be popular amongst educators. Furthermore, with the emphasis in educational standards shifting away from primarily rote memorization and toward the knowledge and skills needed to process new information, working memory has become more important than ever before.

"Some of my kids from last year who are in high school now came back to tell me that they got really high scores on their science test with the state of California. I told them, 'Just remember these [BrainSMART®] strategies, and you'll do well your whole life.'

It was really fascinating to hear and so great that they'd make the effort to come back and tell me the strategies I taught made the difference."

~ Edna Gibson,
Middle School Teacher,
California

Working memory involves the conscious processing and managing of information required to carry out complex cognitive tasks such as learning, reasoning, and comprehension. The home base of working memory is in the prefrontal cortex. Researchers have detected increased activation in this area at the front of the brain when people are involved in thinking and problem solving that engages working memory. Other areas of the brain that support working memory are the hippocampus, which is involved in long-term memory storage and spatial orientation, and Broca's area, located on the left side of the frontal lobes and involved in language processing and verbal fluency.

BrainSMART® Original Strategies

from Dr. Donna Wilson's Workshop

Making Lessons Stick

- **Strategy: The Memory Power of Tunes**
- **Strategy: SMART Pegs [Memory Pegs]**
- **Strategy: Teach someone what you've learned.**
- **Strategy: Take students on a real or virtual field trip.**
- **Strategy: Get them thinking so they'll remember.**
- **Strategy: The Power of Location**
- **Strategy: Eye Positions**
- **Strategy: Memory Scape**
- **Strategy: Use emotion as a tool for aiding learning and memory.**
- **Strategy: Provide students with repeated opportunities to learn information over time.**

Sample BrainSMART® strategies from Dr. Wilson's Workshop

Con't next page

STRATEGY

Help Students Understand the Power of Emotion for Increasing Memory

Purpose: To boost student retention of important information while creating a greater understanding of the role of emotion in attention and memory.

Step 1: Explain to students that today you will be exploring the power of emotion to help them remember important information.

Step 2: Ask students to think about what they remember about last year.

Step 3: Ask students to discuss with the person next to them what they remember.

Step 4: Write on the board or flip chart some of the key things that people remember from the last year.

Step 5: Ask the students what they notice is similar about all these things.

Step 6: After exploring this as relative to emotions, explain the value of emotion in making things memorable. A useful metaphor is that emotions are like files. You may wish to write on files names of some positive emotions like fun, joy, satisfaction, optimism, and then another file for sadness.

Step 7: Ask students in which emotions they would like to store their memories.

Step 8: Encourage students to use skills for optimistic state management to help them build good files of positive emotions and useful learning. For example, periodically guide students to recall something positive that has happened. Assist some students who may have difficulty with this at first.

Note: When educators help students to understand the power of emotions for boosting attention and memory, learners can become more adept at channeling this powerful resource in a positive way. In your teaching, remember to ensure you create emotional "hot spots" around the key information you would like your students to learn.

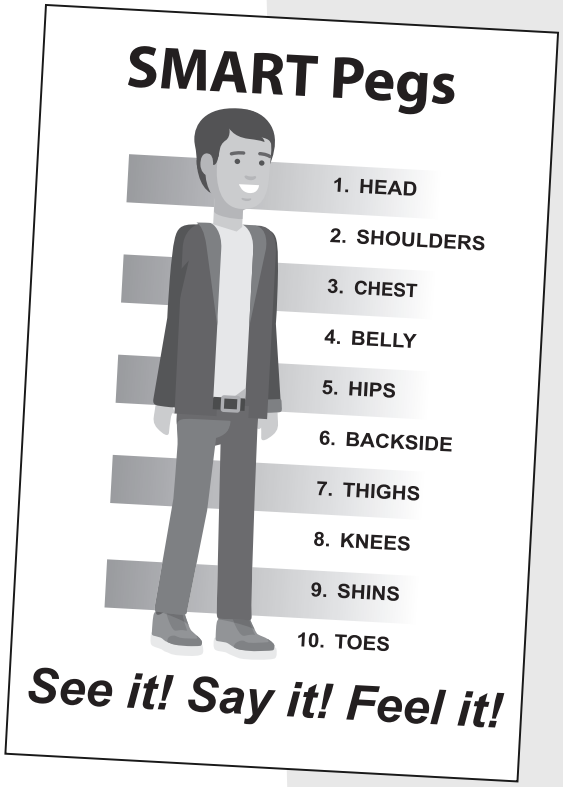
The Power of Emotion strategy is in Dr. Wilson's book, *Introduction to BrainSMART® Teaching* (page 307).

Sample BrainSMART® strategies from Dr. Wilson's Workshop

STRATEGY

SMART Pegs

Purpose: To give all students a practical, portable system that utilizes a number of high-yield ways for retaining and recalling information.



Step 1: Ask students to stand up.

Step 2: Ask students, without the use of pen or paper, to listen to a list of 10 words and to try to remember them all.

Step 3: Give them a list of vocabulary words they need to learn.

Step 4: Then ask the students to turn to the person next to them and give them the list in order.

Step 5: Ask who remembers all 10 in order, 9 in order, 8 in order, 7 in order, and so on, and make a note of how many people remember how many in order.

Step 6: Ask students if they would like to learn a way in which they could easily remember all 10.

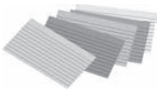
Step 7: Get students to mirror you as you move down the body pegs: 1. head, 2. shoulders, 3. chest, 4. belly, 5. hips, 6. backside, 7. thighs, 8. knees, 9. shins, and 10. toes.

Step 8: Ask students to visualize, in a vivid way, each of the 10 items from the content list.

Step 9: Ask the students to now remember each of the 10 items. Ask if anyone remembered more this time than the previous time and celebrate.

NOTE: The power of the SMART Pegs strategy is that virtually all students can succeed with it. This has particular significance for those who do not think they are effective learners. You can use this system to remember information across different content areas. This is a highly motivating exercise that can change the way students think about themselves and their ability to learn and remember.

Use powerful location memory strategies that Dr. Wilson models in our workshop, such as "Memory Scape" and the "SMART Pegs" to help students realize their memory power!



STRATEGY

The Power of Index Cards

Purpose: To equip students with a portable system for reviewing, retaining, and recalling important information, as well as for assessing their learning.

Step 1: Ensure you have a good quantity of index cards. Many students enjoy using cards of different colors.

Step 2: Write on one side of the index cards a piece of information you'd like the students to remember and on the other side write a question that relates to it. For example, on one side of the card you might write, "Australia's six states became a nation under a single constitution on 1 January 1901." On the other side of the card you might write, "In what year did Australia become a nation?"

Step 3: Get students to begin to create their own index cards of information you would like them to learn.

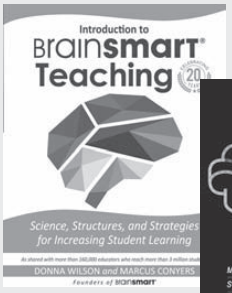
Step 4: Explain to students that they can carry the index cards with them and whenever they have the opportunity on the bus or some other time of the day they can just go through their index cards.

Step 5: Help students understand the benefit of this system. As soon as they know the information, they delete that index card from their deck. For example, once they know Australia became a nation on 1 January 1901, they no longer keep it in their deck.

Step 6: On an ongoing basis, help students create learning decks for the key information you would like them to learn.

Note: This simple and powerful learning system puts students in the driver's seat in terms of how quickly they learn information. The act of writing the cards does a great deal to load them into their memory bank.

The Power of Index Cards strategy is in Dr. Wilson's book, *Introduction to BrainSMART® Teaching* (page 323).



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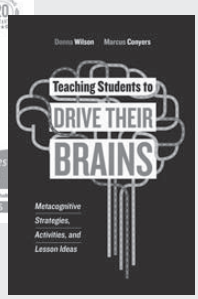

117002

Selected books by Dr. Wilson:

Wilson, D.L., & Conyers, M.A. (2018). *Introduction to BrainSMART® Teaching: Science, Structures, and Strategies for Increasing Student Learning.* This practical selection includes an introduction to the SMART model and more than 60 easy to use teaching strategies that have been found to engage virtually all students in learning and the enhancement of memory.

Wilson, D.L., & Conyers, M.A. (2016). *Teaching Students to Drive Their Brains: Metacognitive Strategies, Activities, and Lesson Ideas.* This book provides teachers with the most practical approach we have seen for guiding students to become more metacognitive and includes a chapter on increasing selective attention and working memory.

RELATED RESOURCES

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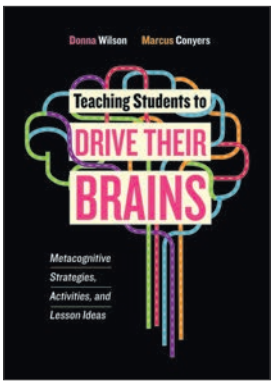
	TCP4179	Smarter Teacher Leadership: Neuroscience and the Power of Purposeful Collaboration	$35.95
	HB6623	Introduction to BrainSMART Teaching: Science, Structures and Strategies for Increasing Student Learning	$49.95
		Total (plus freight) $	



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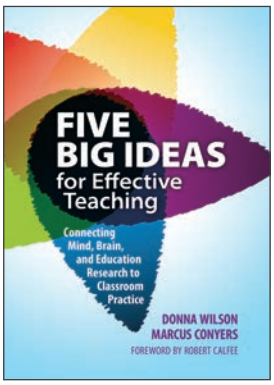

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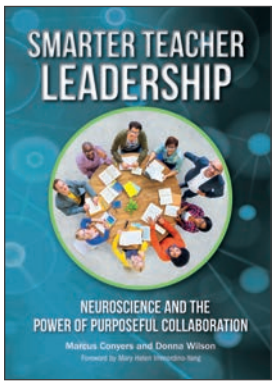

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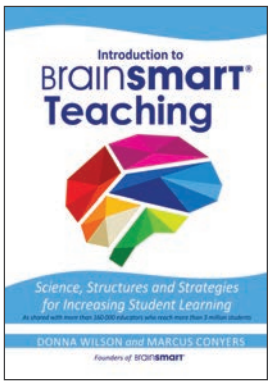

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