General Strategies to Improve Engagement and Learning

JPNFP Presentation by Sandra Frechette

November 2018

Introduction

My learning target

My aim today is…

By the end of this session, attendees will be able to implement one key idea in their lessons regularly to improve learning and engagement.

Key Ideas

- You will be shown key ideas today!

Quick Task

- Memorize these words in 15 seconds

Tomato

Birdcage

Chair

Pencil

Donkey

Soap

Telephone

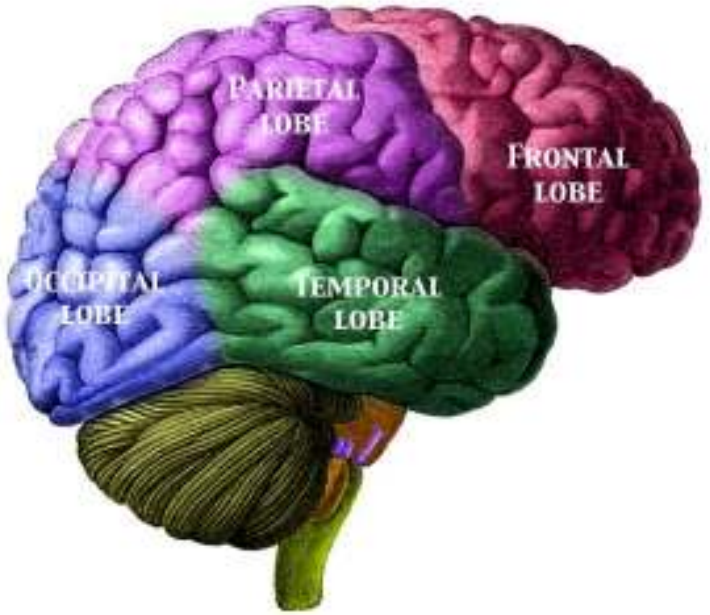
Path

Bed

Doughnut

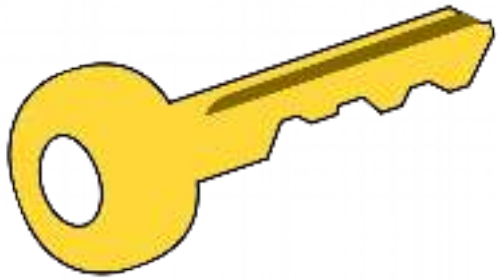
The Brain

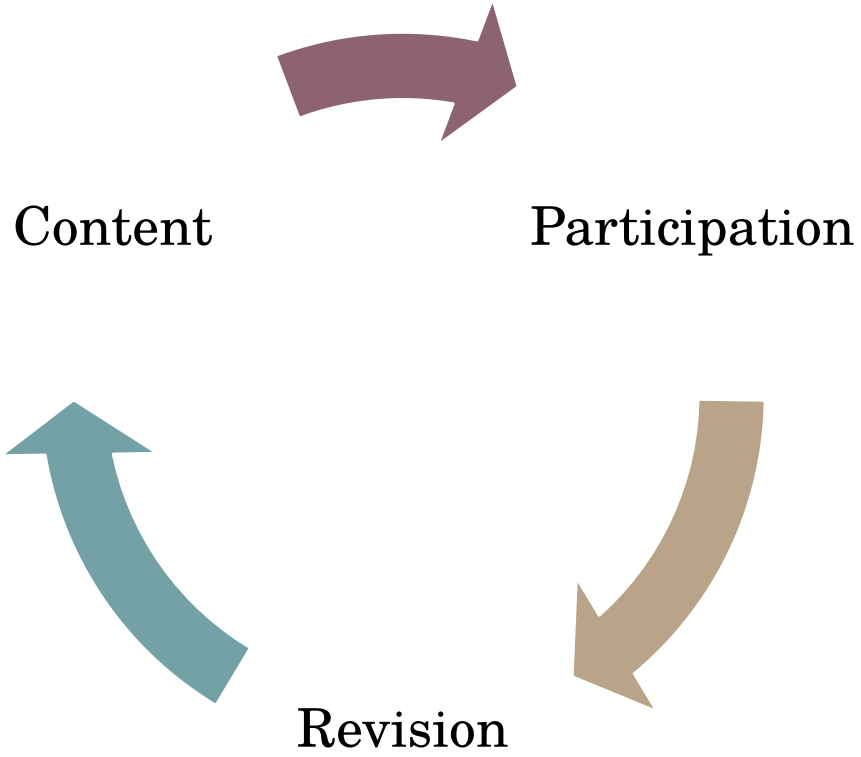
- Has plasticity
- Learning is about making new neural connections (pathways)
- Mistakes grow the brain
- Neurons also change physically
- A brain is only ready to learn when basic human needs are met
- Most of learning is subconscious
- Working memory (short term) in the frontal lobe
- Long term memory involves mulitple parts of the brain



CPR

Content-Participation-Revision





What is CPR?

Content

Teach a concept

15 minutes max!

Partipation

Students are actively engaged

5-15 minutes

Revision

Review and reinforce

5-10 minutes

The Challenging Lesson

CASE: Auto mechanics

Topic: Battery safety and usage

Automotive lead-acid batteries contain sulfuric acid in the electrolyte. The acid inside the battery is highly corrosive and can burn your skin if it leaks out of the battery and gets on your skin.

Concern: There is a lot to teach about anatomy, chemistry and safety before allowing students to manipulate batteries (conduct tests on or manipulate). This topic takes close to an hour to teach before students can manipulate batteries safely. So, no hands-on before an hour of teaching. The total lesson time cannot go beyond 90 minutes.

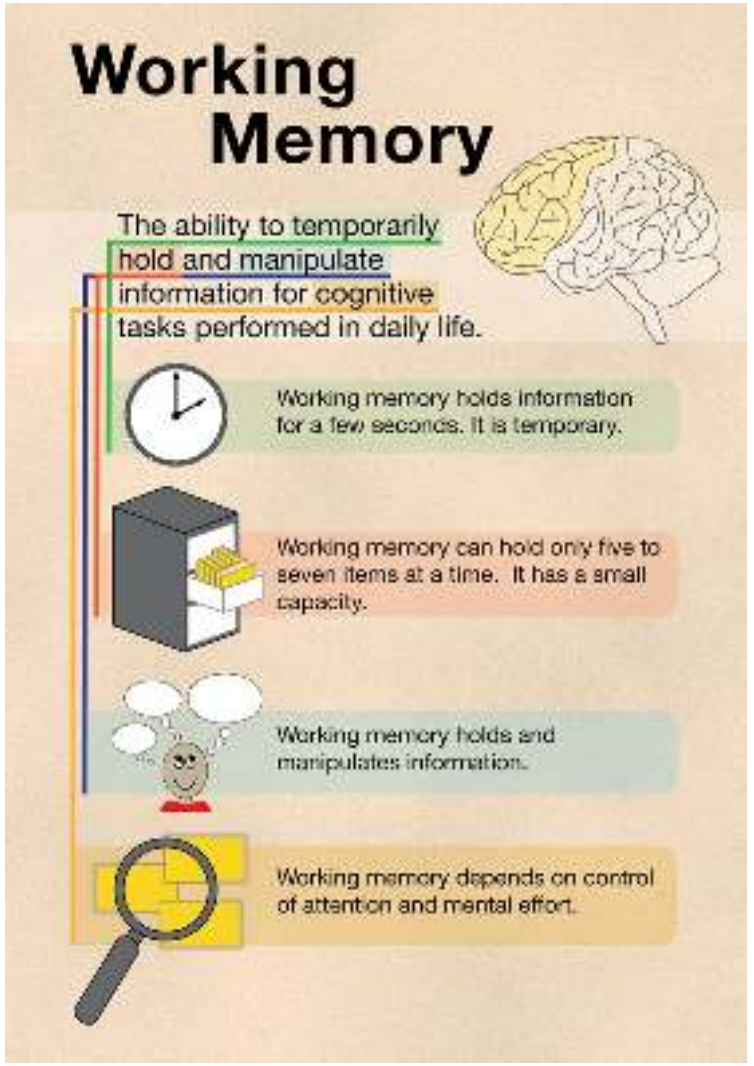
Question: What can be done?

Share a Challenging Lesson

Participation

Processing activities:

- Talking
- Journaling
- Games
- Creating
- Problem solving



Taken from Thomas [*http://www.mtsu.edu/cala/jensen.pdf*](http://www.mtsu.edu/cala/jensen.pdf)

Design your CPR

- **C:** How much content can you teach in 15 minutes?

- **P: What processing activity will you design?**

Elaborate fully with a partner- be creative yet be realistic.

- **R:** How will you revise?

My CPR

- **C** ***(elaborate)***_____
  _____

- **P** ***(elaborate)***_

- **R** ***(elaborate)***_

Physical Break 1

- **Order yourselves in chronological order of birth dates (month and day)**

How much can I teach in 1 lesson?

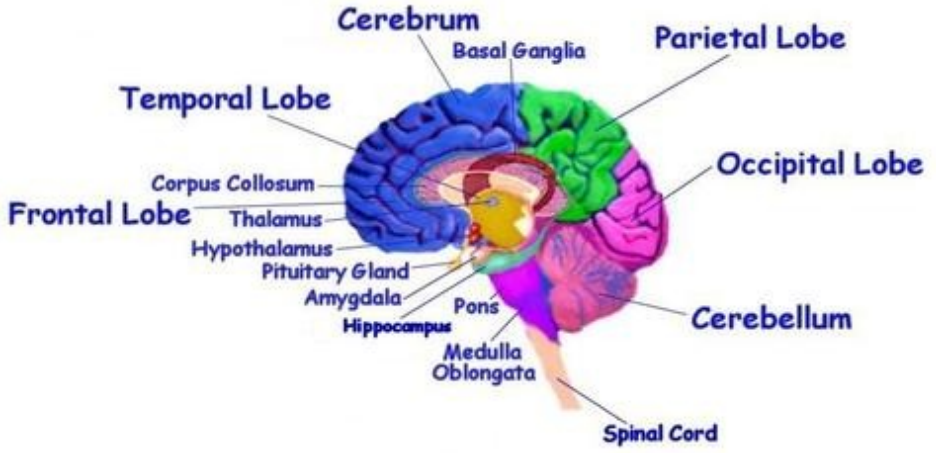
7 **chunks of information**

- E.g. Occlusion, eruption, exfoliation, directions of oral cavity, quadrants, dentitions and types of teeth.

How many times must something be repeated to be learned?

6 times

Consolidation: the process by which memories are moved from temporary storage in the hippocampus (a small structure within the brain) to more permanent storage in the cortex (the outer layer of the brain) (Richards, 2003, p. 24).



R, R and P Activities for Adults

- **Mnemonics (make them silly)**

E.g. My Very Excellent Mother Just Served Us Nine Pickles

- **Acronyms**

E.g. Roy G. Biv

- **Flash cards**

- **Rehearse while performing a motor activity (e.g clapping)**

- **Create a jingle or rap**

Let’s try again

Tomato

Birdcage

Chair

Pencil

Donkey

Soap

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Memorization Activity

Use the strategy of your choice to memorize the following:

Scientists know a chemical change has occurred when at least one of the following signs is exhibited. These signs are **production of a precipitate, production of heat, production of light, a change in color or the formation of a gas.**

Memory Toolbox http://www.ldonline.org/article/5602

R Sow V

- R- Relax and concentrate
- S- Slowdown
- O- Organize
- W-Write down or repeat
- V- Visualize

TRAP

- T- Translate (into your own ideas/words)
- R- Repeat
- A- A picture
- P- Practice

How can the neural pathways be strengthened?

In other words, how can we improve long term memory of a topic?

Strengthening neural pathways

Concept taught here

Concept revised again here

Brain Science

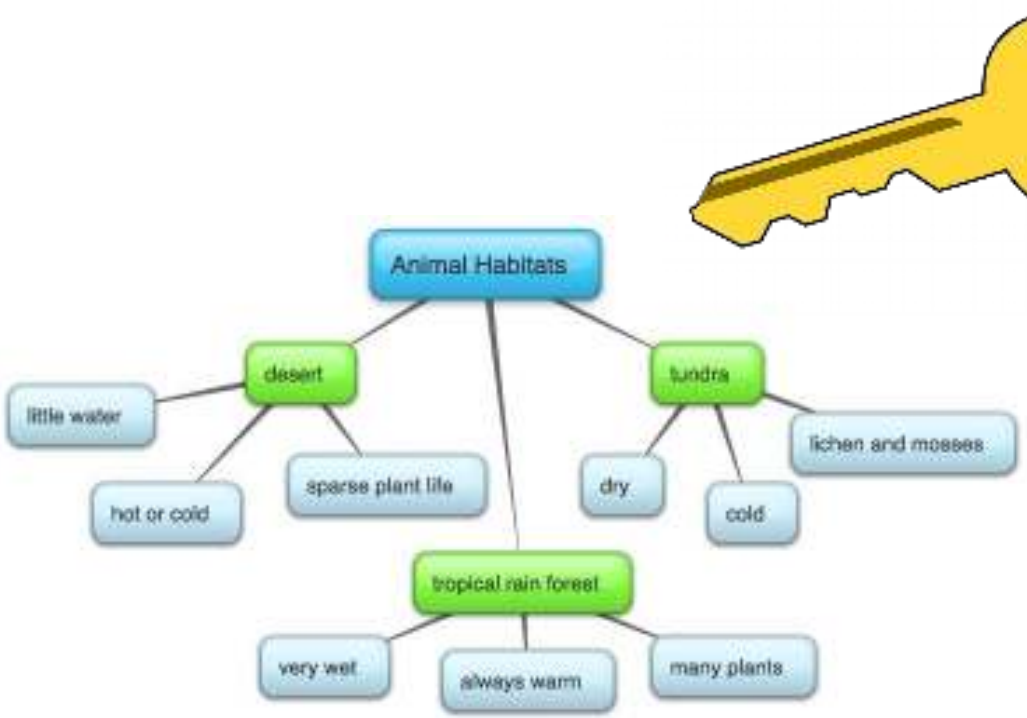
Words to teach by

Since our "thinking cap" is strongly influenced by patterns, not facts, remembering information is maximized when it is provided in contextual, event-oriented situations which include motor learning, location changes, music, rhythm, and novelty…. We do poorly when we "piecemeal" learning into linear, sequential facts and other out-of-context information lists".

Eric Jensen, Super Teaching, p. 26

Concept and Mind Mapping

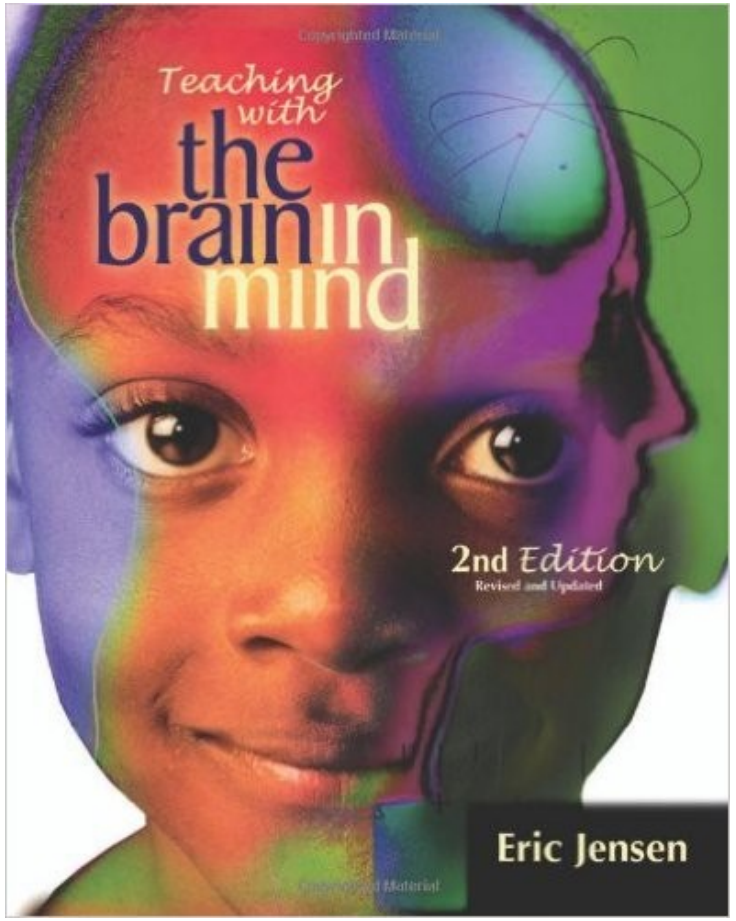
Help students structure and make sense of information

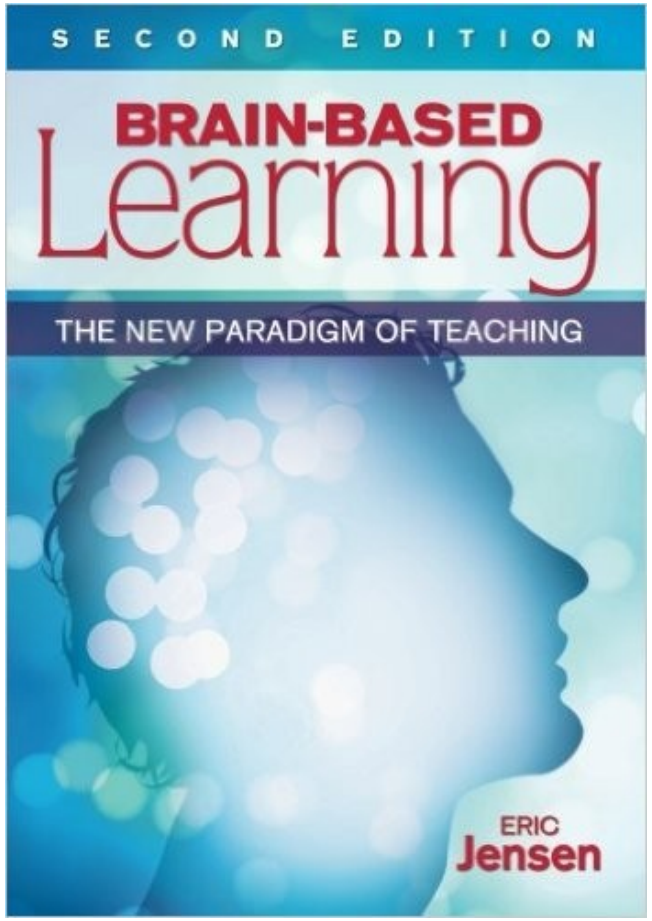


My Favorites

- http://www.mtsu.edu/cala/jensen.pdf
- https://www.youcubed.org/
- http://www.ldonline.org/article/5602
- http://www.brainwaves.com/memoryIsPlural.html

The work of Jensen





Was today's target achieved?

By the end of this session, attendees will be able to implement one key idea in their lessons regularly to improve learning and engagement.

Feel free to contact me!

Thank you for your participation!

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