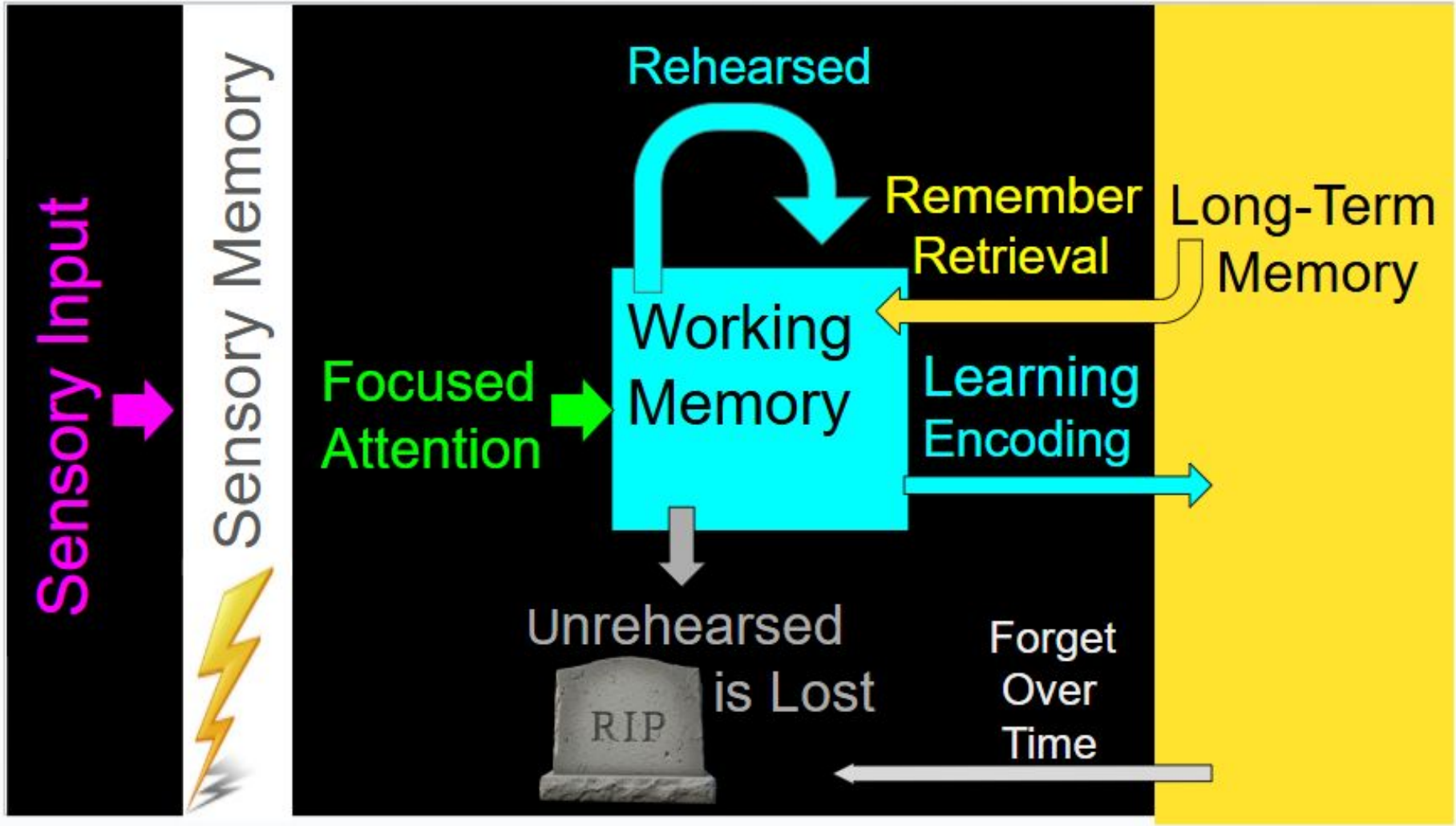
Building Brains, Not Just Stuffin' Straw: Science-Based Strategies for Learning that Lasts

Beth Young MSN-Ed, RN

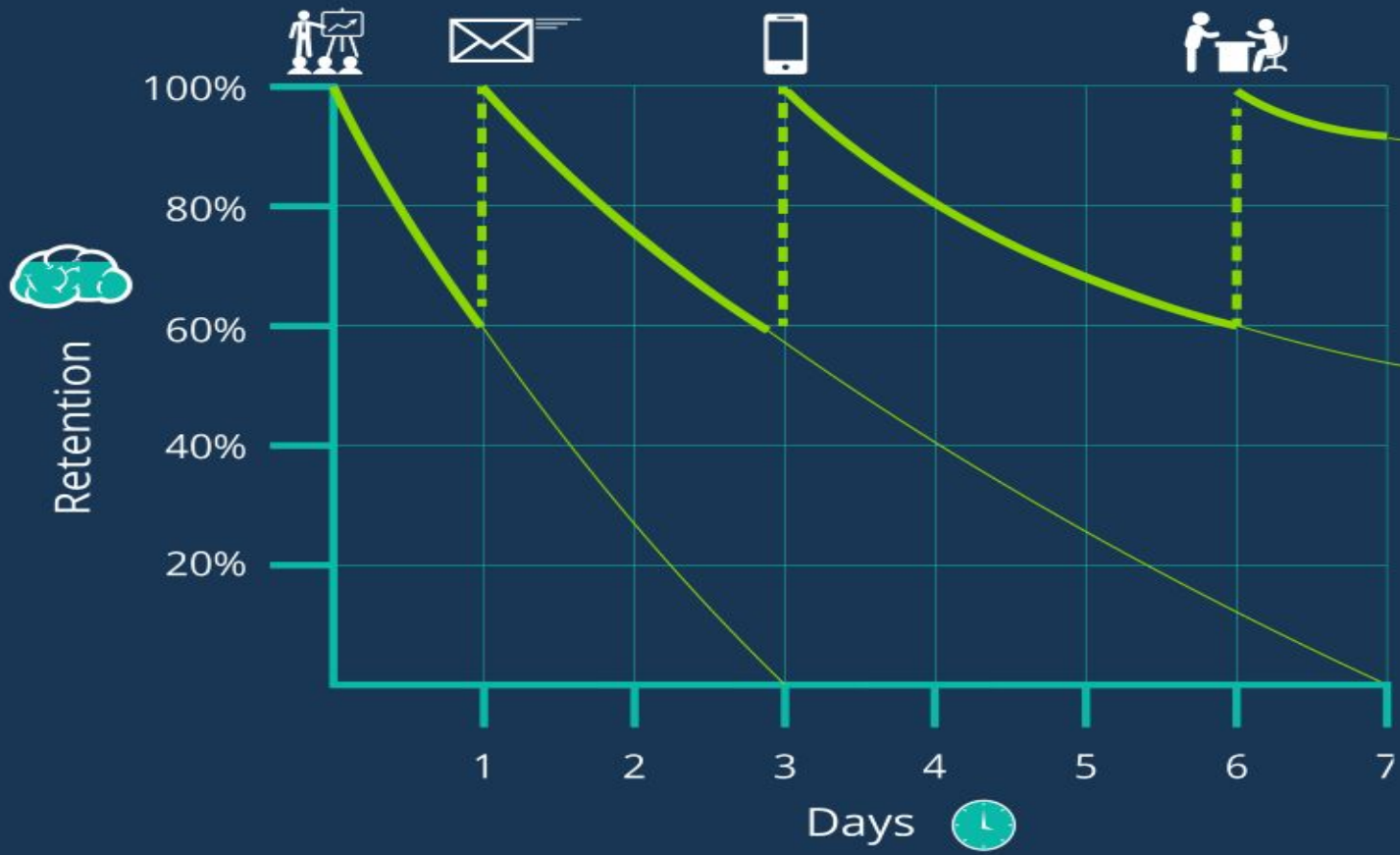
By the end of this session you will be able to:

Apply cognitive learning models, enhance study and retrieval strategies, and promote active, lifelong learning through improved instructional practices.

Learning & The Brain: Neuroplasticity


Sensory Input
Sensory Memory
Rehearsed
Remember
Retrieval
Long-Term
Memory
Working
Memory
Focused
Attention
Learning
Encoding
Unrehearsed
is Lost
RIP
Forget
Over
Time

COMBATING THE FORGETTING CURVE



E-Learning Industry. (2021). *What is the forgetting curve (and how do you combat it)?* E-Learning Industry. Retrieved April 8, 2025, from https://elearningindustry.com/forgetting-curve-combat

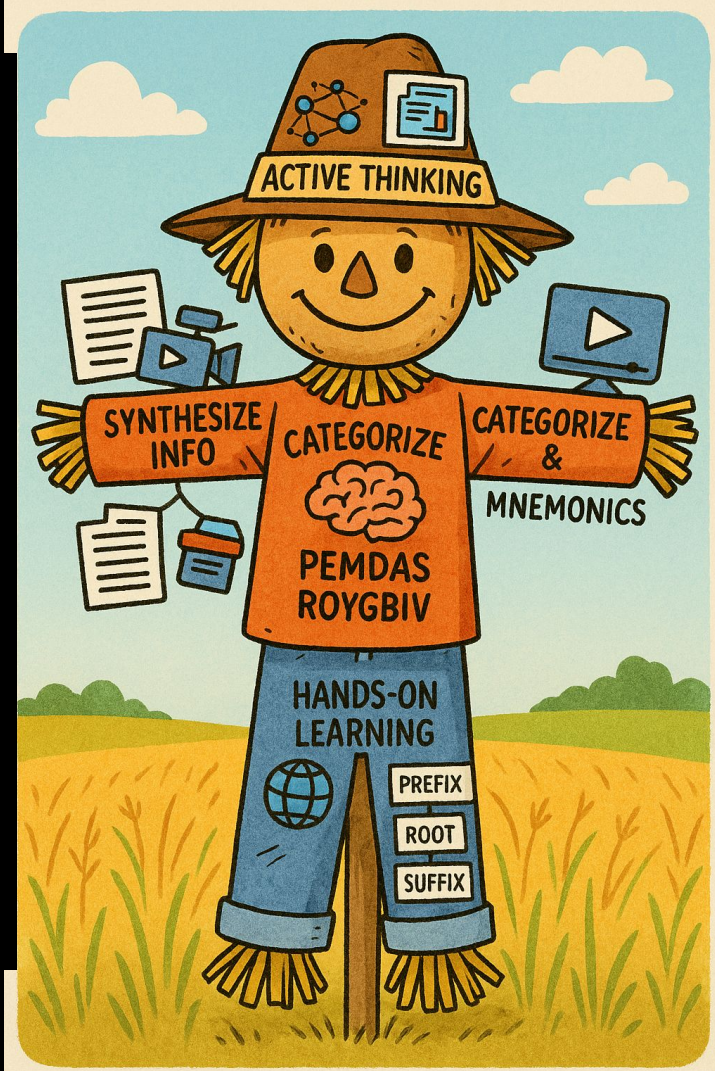
WHY YOU SHOULD USE SCIENCE-INFORMED LEARNING

- Uses cognitive principles and active engagement to promote long-term memory for students.
- Promotes effortful retrieval methods increasing retention.
- It’s validated by recent meta-analyses, educational studies, backed by learning science

Encoding:

Making Learning Stick

- Synthesize Information
- Categorize Content
- Use Mnemonics
- Use Tools for Learning
- Classroom Activities



SPACED REPETITION

- Study Gradually, Reviewing at Set Intervals
- Use Daily Warm-Ups and Cumulative quizzes for retention
- Review Sessions Prevent Cramming and Improve Long-Term Memory

RETRIEVAL STRATEGIES

Active Recall Strengthens Memory

Quick Quizzes, Peer Quizzes, & Flashcards

Practice Questions Help Simulate Test Scenarios and Improve Retention

INTERLEAVING

- Mix New and Old Topics to Improve Memory
- Use Varied Practices Like Quizzes, Diagrams, and Active Recall for Stronger Retention
- Helps Students Connect and Retain More Material

Elaboration & Thinking Out Loud

Explaining Material to Strengthen Learning

Feynman Technique: Study Topic, Explain Simply, Identify Gaps, Simplify

Think-Pair-Share, Journaling, & Peer Teaching Deepen Understanding & Reinforce Concepts

Start thinking about the ways students prepare for a test, assess what your students are currently doing.

- Rereading text or notes?
- Highlighting?
- Solving problems?
- Answering questions?
- Writing short answers?

Planning for Success

- Organize Study Schedules, Avoid Cramming
- Break Study Time into Blocks with Regular Reviews and Breaks
- Prioritize Planning, Interleave Subjects, and Quiz Regularly

Summary of Study Techniques, Homework Activities, and Learning Science Insights

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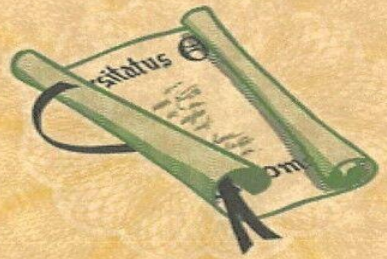
GIFT PRESENTED BY THE WIZARD OF OZ

BRAIN



By virtue of the authority vested in me by the *Universitatus Committeeatum e pluribus unum*,
I hereby confer upon you the honorary degree of Th.D.... that's Dr. of Thinkology!

AWARDED TO

The Scarecrow

THE OFFICIAL SEAL OF THE EMERALD CITY