Lifelong Learning and Knowledge Retention "Make it Stick"

Lisa Lewis EdD, MSN, RN, CNE & Midge Bowers, DNP, FNP-BC, CHSE, FAANP

Objectives

1. Describe the science of how your students learn
2. Recognize and discuss common myths your students believe about successful learning
3. Parley strategies that you can offer students to help them learn and "make learning stick"

Shifting Volume

[Image of bottles and other objects]
Overview

Learning
Myths
Strategies
Practical Application

"MAKE IT STICK: The Science of Successful Learning"
Peter C. Brown and Henry L. Roediger III

Concepts Retrieval strategies Effective vs ineffective

Neuroplasticity
- Difference between knowledge and conceptual understanding.
- Effective learning
  - Improves performance
  - Changes your brain and intellectual capabilities
How to make learning "Stick"

- Anchor
- Link
- Mental Models

- Encoding
- Consolidation
- Retrieval

Learning

Requires memory
Is a lifelong endeavor
Is an acquired skill
Takes effort

What strategies do you use for learning?
Dispelling Myths: What doesn't work!

1. Mass Practice
2. Rewriting notes
3. Rereading

Dispelling Myths: What works!

1. Spaced Practice
2. Retrieval practice
3. Interleaving

What works

- Spaced Practice
- Same forgetting between practice
- Flashcards
What works

- Retrieval Practice
- Self-quizzing
- Low stakes testing

What works

- Interleaved Practice
- Switch from one topic to another
- Variability in types of problems and information

Volume Shifts
Create mental models

What works

I'm not telling you it's going to be easy,
I'm telling you it's going to be WORTH IT.

Shifting Volume
Types of Heart Failure

Heart failure with reduced EF (HFrEF)
- Failure in pumping
- Volume expands

Heart failure with preserved EF (HfPEF)
- Failure in filling
- Fixed volume

What does NOT work!
- Familiarity and fluency ≠ Knowledge and comprehension
  - Rereading and/or rewriting notes
- Familiarity often mistaken for understanding
  - Recall and memorization

Practical Application

Feedback
Practical Application

Desirable Difficulty
- Generative Learning: students are given a problem to solve prior to being taught the concepts or method.

Practical Application
- Small Groups
  - Classroom
  - Online
  - Bedside/Exam Room
  - Simulation

Online Course
- Pathophysiology Course
- Content heavy
- Many concepts to apply

Effective Learning Tips
- Create study questions to be completed before content is available (prompts inquiry)
- Use low-stakes testing at the completion of the content
- Repeat quiz questions later in the semester
- Student creates a summary of the discussion forum
Classroom activity

- Pharmacology course
- Antimicrobial content
- Very dense topic
- Requires memorization

- Effective learning tips
- Students work in groups to develop an antibiotic table
- Each student selects a topic from the table and describes it to the group in their own words

At the bedside/exam room

- Focus on one patient
- Abnormal exam finding
  - Tachycardia

- Effective Learning Tips
- Probes/Instructor probes
  - Tell me about another patient with a similar finding (inquiry)
  - Discuss similarities and differences across age, gender, and disease.

Simulation

- Concept from Lecture
  - Safety
    - Patient
    - Medication
    - System

- Effective Learning Tips
- "Room of Horror"
  - Scenario includes all aspects of safety
  - Students engage in "safety practices"
  - Debrief integrates the concept of safety as a thread for all aspects of healthcare
What does effective learning look like?

StudyLess
StudySmart
Study Motivation

Watch 0:33 min
https://youtu.be/AD6iX2Cysbc

Questions

- Lisa Lewis  lisa.lewis@jku.edu
- Midge Bowers  margaret.bowers@jku.edu