ADAPTIVE LEARNING & ACTIVE LEARNING

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What comes to mind when you hear the term “active learning” in the classroom? Write down 2-3 examples
What comes to mind when you hear the term “adaptive learning” in the classroom (or maybe outside of the classroom)?

Write down 2-3 examples
Karpicke et al. (2009): Had students list all of the study strategies they use and rank order them according to how often they use them.

- 84% listed rereading / repetition
- 55% ranked it as the #1 strategy
COMMON MISCONCEPTIONS ABOUT LEARNING

- If you struggle at something, it means you’re not good at it/smart
- You should have a regular “study spot”
- You should read your textbook and review your notes over and over—repetition is key
- You should “chunk” your study according to subject
- Learn what works for you and stick with it
When it comes to learning, it’s all about how you encode information
THE “DOS” OF EFFECTIVE STUDYING: WHAT HELPS?

- Prior knowledge
- Varying learning conditions
- Interleaving
- Spacing
- Testing
Mastery quizzing – a way to implement frequent testing in your course

- Students must achieve “mastery” to earn points
- Multiple attempts allowed
- Forces students to space their studying
- Immediate feedback

Example

- “Which lobe contains areas for processing visual information?”
- “Which lobe contains areas for processing auditory information?”
The importance of current environmental influences on our growth potential was emphasized by:

- humanistic psychology.
- structuralism.
- Freudian psychology.
- cognitive neuroscience.
Think back to your “active learning” brainstorming list...
What is embodiment?

- “The representation or expression of something in a tangible or visible form”
  - Physical enactment

Why embody?

- Physical experience influences understanding and can enhance learning
  - The enactment effect
What does “embodiment” refer to?

- Gestures
- Movement
- Acting/experience
- Imagined experience
GESTURES & MEMORY

Gestures can enhance retention!

- E.g., Frick-Horbury (2010)
  - Examined hand gestures as cues for recall for 40 concrete and abstract words
  - Self-cued, other-cued, or no cue
Actions can enhance memory too!

- E.g., Macedonia & Klimesch (2014):
  - Learn fake vocabulary words
  - Saw/heard words or enacted the words
  - Tested up to 444 days (14 months) later

Fig. 1. Gestures used during training: (a) anigrin (monkey), (b) etrap (over).
Macedonia et al. (2011)

- Meaningful gestures > meaningless gestures
- Suggests that the benefits of gestural enactment are not due to mere engagement in PA
So...why do you suppose gestures and actions help memory?
Think about courses you teach.

What are some concepts that you teach that could be embodied?
CONCLUSIONS: EMBODIMENT

- Embodied cognition has shown efficacy in a variety of learning contexts.
- Incorporating embodiment activities into large classrooms may help with in-class engagement and retention.
- Embodiment can truly be active learning.
Study with meaning in mind.
Change it up.
Space your studying.
Test yourself.