

The JOY of LEARNING

- Think of a topic you are passionate about
 - Think about your learning process
 - How much time was spent?
 - How did you practice?





- To experience research-based learning tools:
 - Focus/Diffuse modes of thinking
 - Chunks
 - Recall
 - Pomodoro Technique

- Collaborate to develop 1-2 ideas to incorporate into your teaching next week and beyond

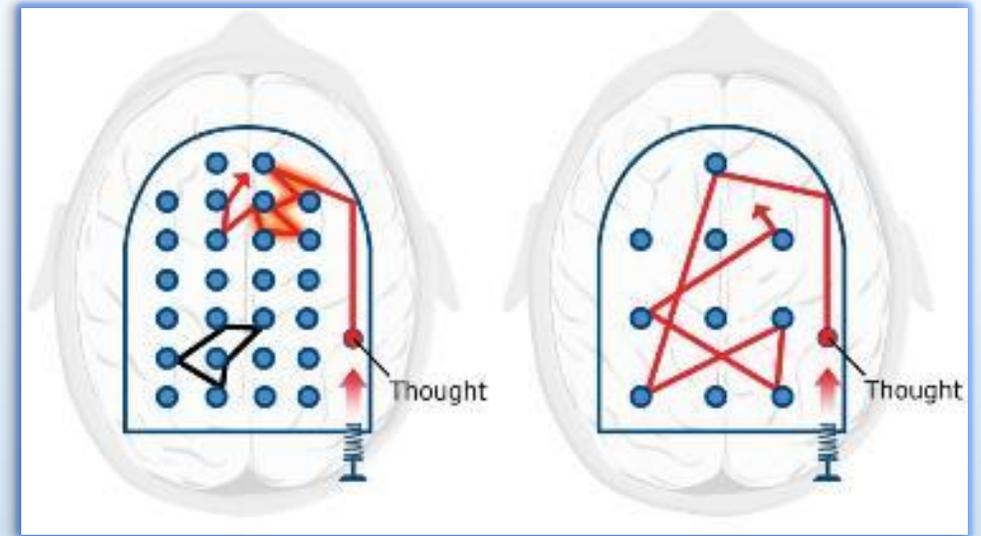
Learning How to Learn

Work of Barbara Oakley Ph.D., Oakland University
“A Mind for Numbers: How to Excel at Math and Science”

Presenter: Kenda Caligure

Two modes of thinking

- Focused
- Diffused
- To learn something new – go back and forth between the FOCUS and DIFFUSE Modes
- Learning something difficult takes TIME!
- Path to EXPERTISE is built bit by bit
- Learning changes the structure of the brain



Think about it...

How do you SWITCH from Focused to Diffuse mode?



Chunking

- Pieces of information bound together through meaning
- Packages of information your brain can easily access
- Chunking = Efficient BRAIN



How to Chunk



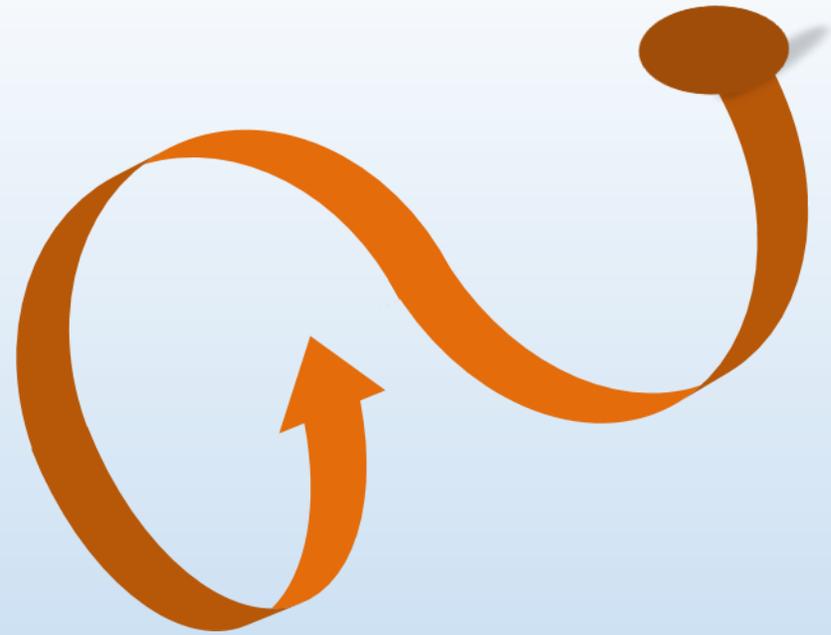
- **Focus** on the information
- **Understand** basic/main ideas

*“You want your brain to become used to the idea that just knowing **how** to use a particular problem-solving technique isn’t enough – you also need to know **when** to use it.”* Oakley, p.75

- **Practice**

Chunking Examples

- Multiplication Tables
- Backing a car out of the driveway
- Think again about that topic you are passionate about. Describe to a neighbor a chunk involving that topic that was at first difficult for you to grasp but now seems easy.



Recall

- Retrieval Practice – more effective than rereading
 - Karpicke, JD. “Retrieval-based learning: Active retrieval promotes meaningful learning.” *Current directions in Psychological Science* 21, 3 (2012): 157-163
- Predicting what will be on the test
- Self-testing
- Testing/Quizzing – great forms of Recall
- TRY IT...RECALL what we’ve covered so far

- Recall: What were the key points in your last lesson? What do you want your students to remember? Generate ways for students to RECALL these key points.

What you are teaching next week?

- Key points to address
- Create a draft learning activity (In-Class or Outside-Class) to incorporate one or more:
 - Focus/Diffuse modes
 - Chunking
 - Recall
- Share activity with a neighbor
 - Person sharing: share briefly key point(s) and the activity
 - Neighbor's job: listen to entire idea, then make suggestions

Spaced Repetition

“You must have information persisting in your memory if you are to master the material well enough to do well on tests and think creatively with it. Barbara Oakley, p. 66

- Scheduled study – plan the work/work the plan
- Deliberate Practice – practice on the toughest aspects of the material
- Interleaving – varying learning by hopping back after a break to strengthen an approach learned earlier
- Mini-Victories lead to motivation
- Importance of Sleep

PROCRASTINATION

“When you procrastinate, you are leaving yourself only enough time to do superficial focused-mode learning. You are increasing your stress level because you know you have to complete what feels like an unpleasant task.”

Oakley, p.24

PROCRASTINATION

- Brain's pain-center activates when we think about something we don't want to do
- Making a choice to “procrastinate” gives temporary relief (ONLY)
- Reprogramming Your Brain – Pomodoro Technique
 - <http://tomato-timer.com/>



Process NOT Product

- Focus on making
- Progress not perfection
- Focus on product equals:
 - Judging self
 - Stress

progress

Group discussion on Procrastination

- In groups of 4-5, discuss:
 - Ways to incorporate teaching students about ways to decrease procrastination habits
 - How do you incentivize decreased procrastination?



COCC Study Strategies – HumanDev 101

- Covers the “Learning to Learn” strategies and many others to help students develop and practice habits and strategies to become more efficient and effective learners
- Begin designing activity for your classes to help those student’s apply this information
- How can you help those who haven’t taken the class...

Summary

- Recall what was covered today:
 - Focus/Diffuse Modes of Thinking
 - Chunking
 - Recall
 - Procrastination

Coursera: Learning How to Learn

- <https://www.coursera.org/course/learning>
 - It's FREE and always open
 - 4 weeks, videos and quizzes (Free) additional assignments for Certificate
- Brainfacts.org
- [Strengthening the Student Toolbox: Study Strategies to Boost Learning](#)