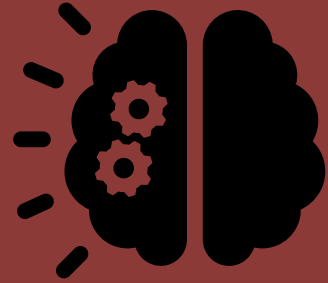


How to Use Retrieval Practice to Improve Learning





Agenda

- Introduction to Retrieval Practice
- Three Stage Model of Learning
- Retrieval Practice Strategies
- Student Voice (SGID)

Introduction

What is retrieval practice?

Why should I use it in my classroom?

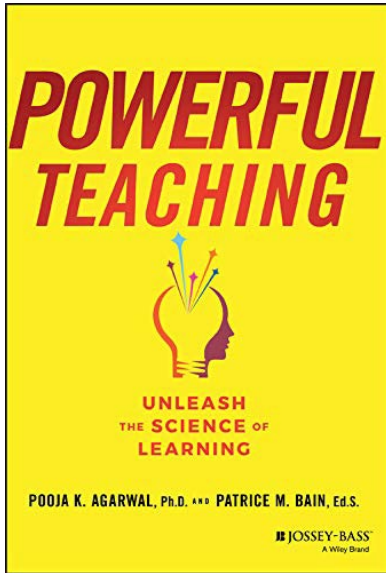




Retrieval Practice is a **learning strategy** where we focus on getting information out. Through the act of retrieval, or **calling information to mind**, our memory for that information is strengthened and forgetting is less likely to occur. Retrieval practice is a powerful tool for improving learning without more technology, money, or class time.

(Agarwal, 2019)

Source Material:



This Photo by Unknown Author is licensed under [CC BY-NC-ND](https://creativecommons.org/licenses/by-nc-nd/4.0/)

Powerful Teaching: Unleash the Science of Learning

By: Pooja Agarwal & Patrice Bain (2019)

Other Resources:

- powerfulteaching.org
- retrievalpractice.org



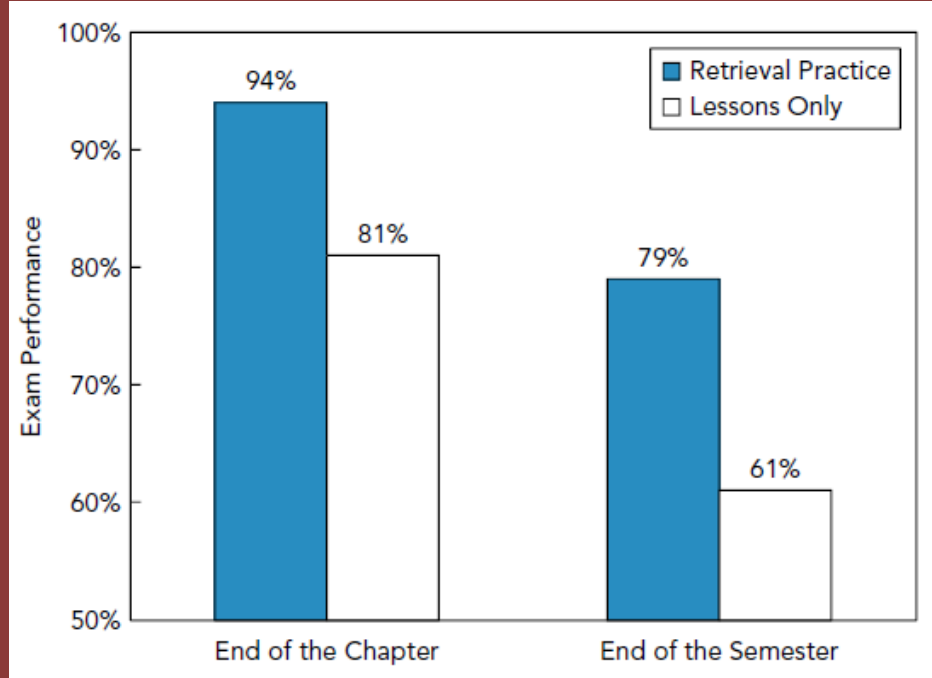
Powerful learning

- Retrieval practice takes one minute or less
- Retrieval practice doesn't require extra prep or grading
- Retrieval practice is flexible for your content area and students
- The more students remember, the less you have to re-teach
- With retrieval practice, emphasize **long-term** learning!

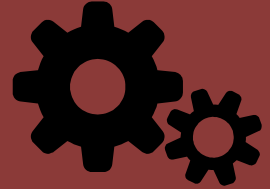


Research has shown that retrieval practice can increase students' grades from a C to an A.

(Agarwhal, p. 34)



Three Stage Model of Learning





Make a simple switch

encode

Here's what we did last week.

retrieve

What did we do last week?

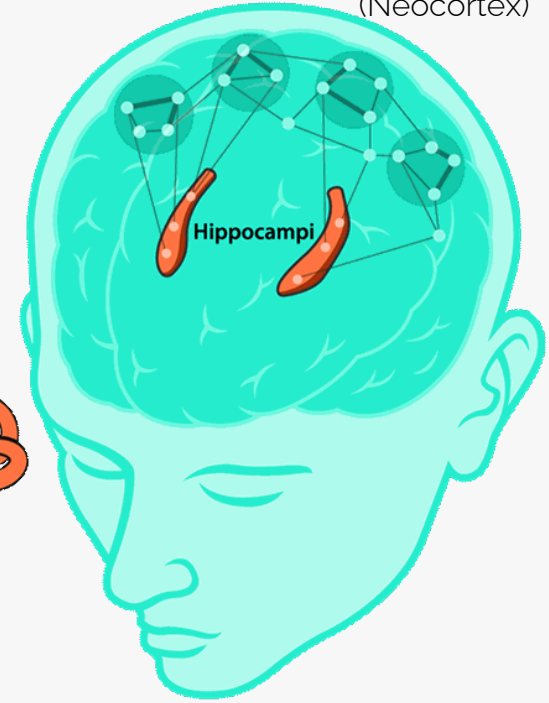
Working Memory

*Uncommon Sense Teaching:
Practical Insights in Brain
Science to Help Students Learn*

By: Barbara Oakley, Beth Rogowsky, &
Terry Sejnowski (2021)

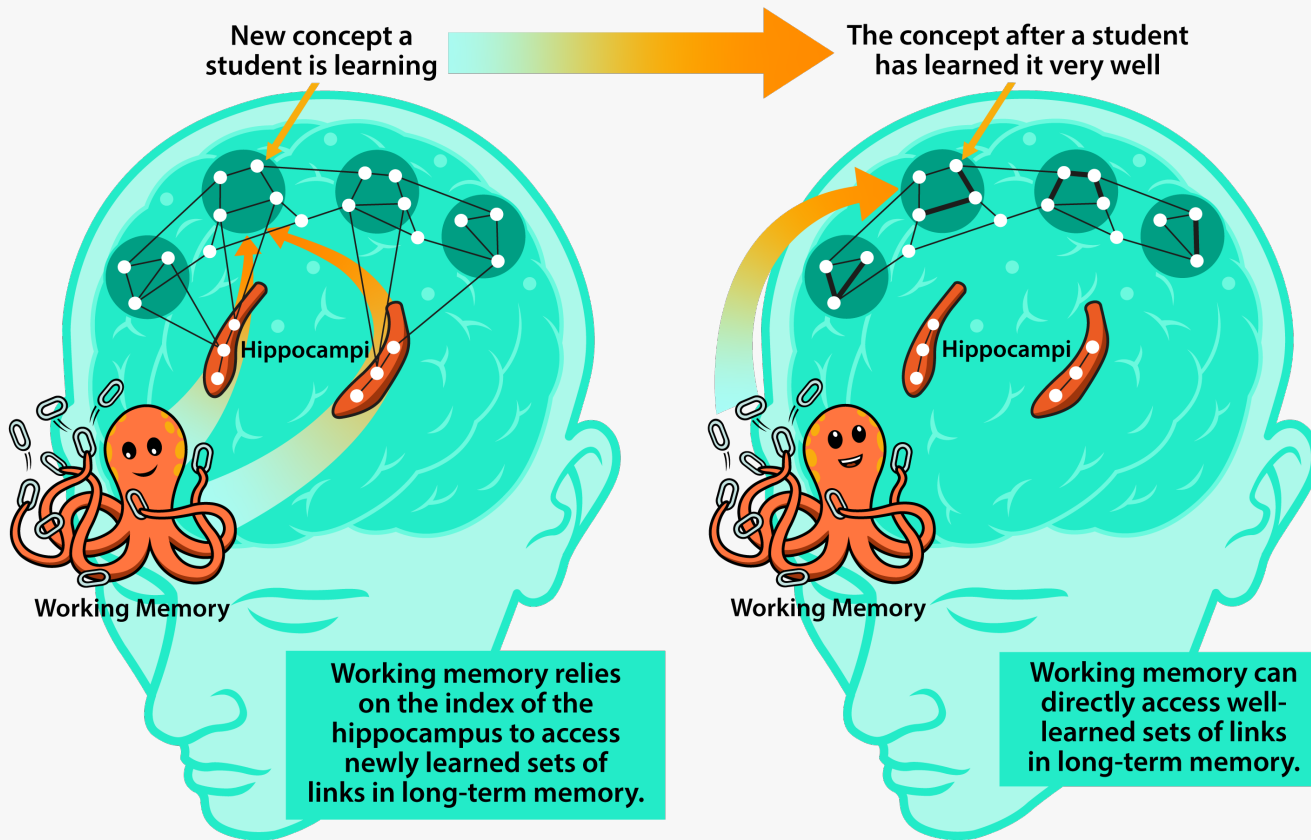
- [Coursera Course](#)
- [Book Information](#)
- [CITL Cognitive Load Workshop \(8/23/22\)](#)

Long-Term Memory
(Neocortex)

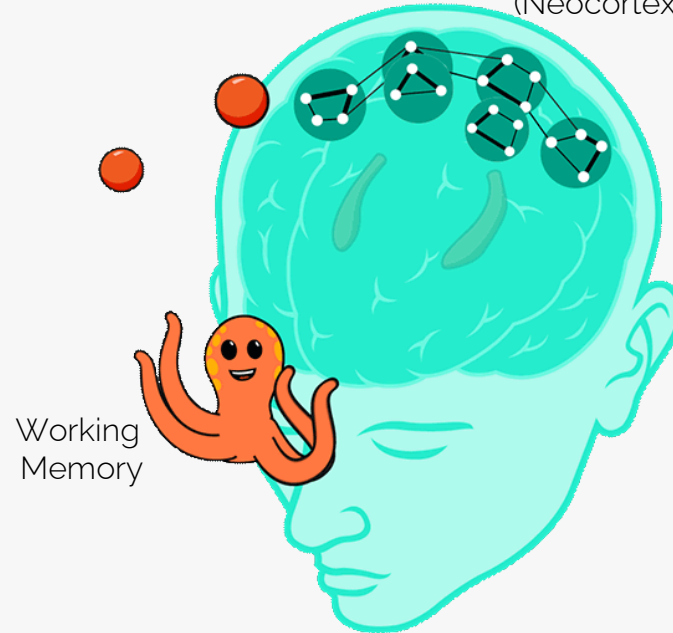


Working
Memory





Long-Term Memory
(Neocortex)




Working
Memory





Think of a moment where you had a hard time learning a new concept or skill.

Desirable Difficulty



Short term roadblocks for stronger learning.

Desirable difficulties are making things hard on yourself, but in a good way.

Blocking

- AAAA
- BBBB
- CCCC
- DDDD

Interleaving

- ABCD
- BCDA
- CDAB
- DABC



Retrieval Practice Strategies



Brain Dump

Two Things

Think-Pair-Share

Mini Quizzes



Brain Dump

Write down **everything**
you can remember



Two Things

- After a lecture
- After reading a chapter
- At the end of the day
- At the end of the week
- One minute or less!



Think-Pair-Share

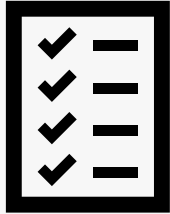
Don't skip the "think" step!

Have students write down what they know
before they pair and share



Mini-Quizzes

- Use for entry and/or exit tickets
- Written, tech tools, and apps
- Multiple-choice and short answer
- No optimal timing or frequency
- You don't have to grade it at all!



Retrieval Practice Implementation Checklist

- Low stakes or no stakes learning strategy
- Provide frequently
- Space it out
- Use a variety of strategies & question types
- Encourage metacognition
- Examine existing teaching strategies
- Reassure students that “challenging learning” is good!



Student Voice



Themes from Small Group Instructional Diagnostics
Fall 2022

References:

Agarwal, P. K., & Bain, P. M. (2019). Powerful teaching : unleash the science of learning (First edition.). Jossey-Bass.

Bjork, E. & Bjork, R. (2011). Making things hard on yourself, but in a good way: Creating desirable difficulties to enhance learning. *Psychology and the Real World: Essays Illustrating Fundamental Contributions to Society*. 56-64.

Oakley, B. A., Rogowsky, B., & Sejnowski, T. J. (2021). *Uncommon sense teaching: practical insights in brain science to help students learn*. TarcherPerigee, an imprint of Penguin Random House LLC.

Thanks!

Questions, Comments, Concerns?

[Feedback Survey](#)

Next Week's Session: Tuesday, Feb. 28

AI in Academics: A Paradigm Shift In Pedagogy

[Register](#)