Implementing a spaced retrieval practice intervention to improve students' study skills

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Socrative Poll

- Socrative.com
- Student Login > Room Code: MANGELSDORF5633

    - To what extent do you find your students struggle with studying effectively?
    - To what extent do you teach your students how to study?
    - Have you heard of retrieval practice before?

Agenda

- Why teach study skills to students?

- What is spaced retrieval practice?

- How can you teach this strategy to students?

- Was our intervention effective?

- Future directions and invitation
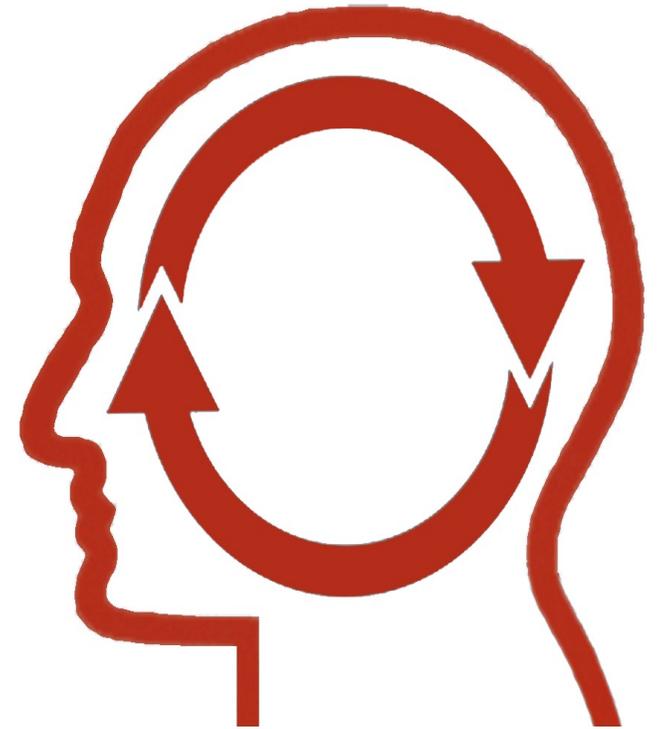
How do students typically study for exams?

Strategy	Percent who list strategy		Percent who rank as #1 strategy	
1. Rereading notes or textbook	83.6	(148)	54.8	(97)
2. Do practice problems	42.9	(76)	12.4	(22)
3. Flashcards	40.1	(71)	6.2	(11)
4. Rewrite notes	29.9	(53)	12.4	(22)
5. Study with a group of students	26.5	(47)	0.5	(1)
6. "Memorise"	18.6	(33)	5.6	(10)
7. Mnemonics (acronyms, rhymes, etc)	13.5	(24)	2.8	(5)
8. Make outlines or review sheets	12.9	(23)	3.9	(7)
9. Practise recall (self-testing)	10.7	(19)	1.1	(2)
10. Highlight (in notes or book)	6.2	(11)	1.6	(3)
11. Think of real life examples	4.5	(8)	0.5	(1)

Karpicke, Butler, & Roediger (2009)

Rereading is not an effective study strategy

Callender & McDaniel (2009)
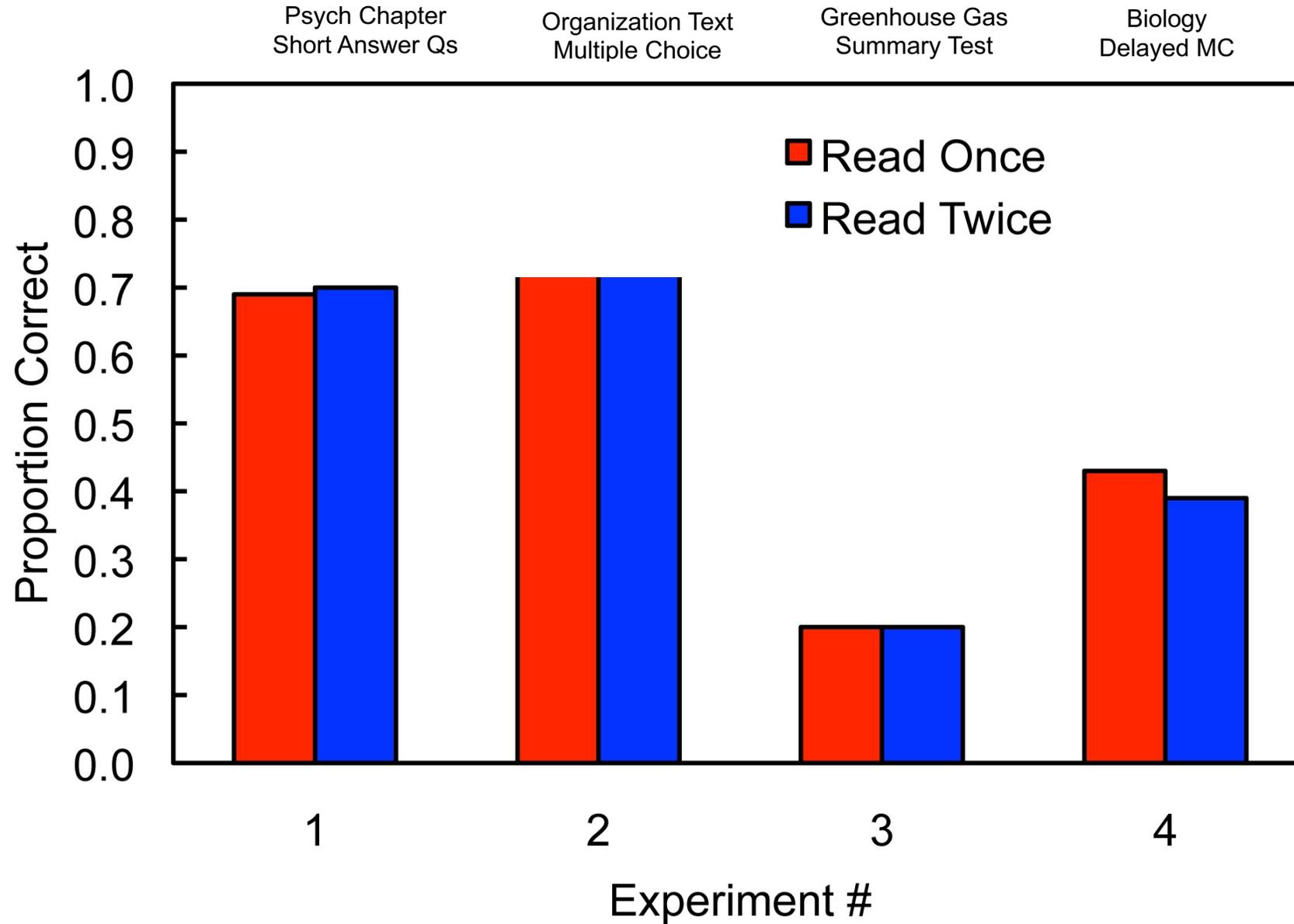
What is Retrieval Practice?
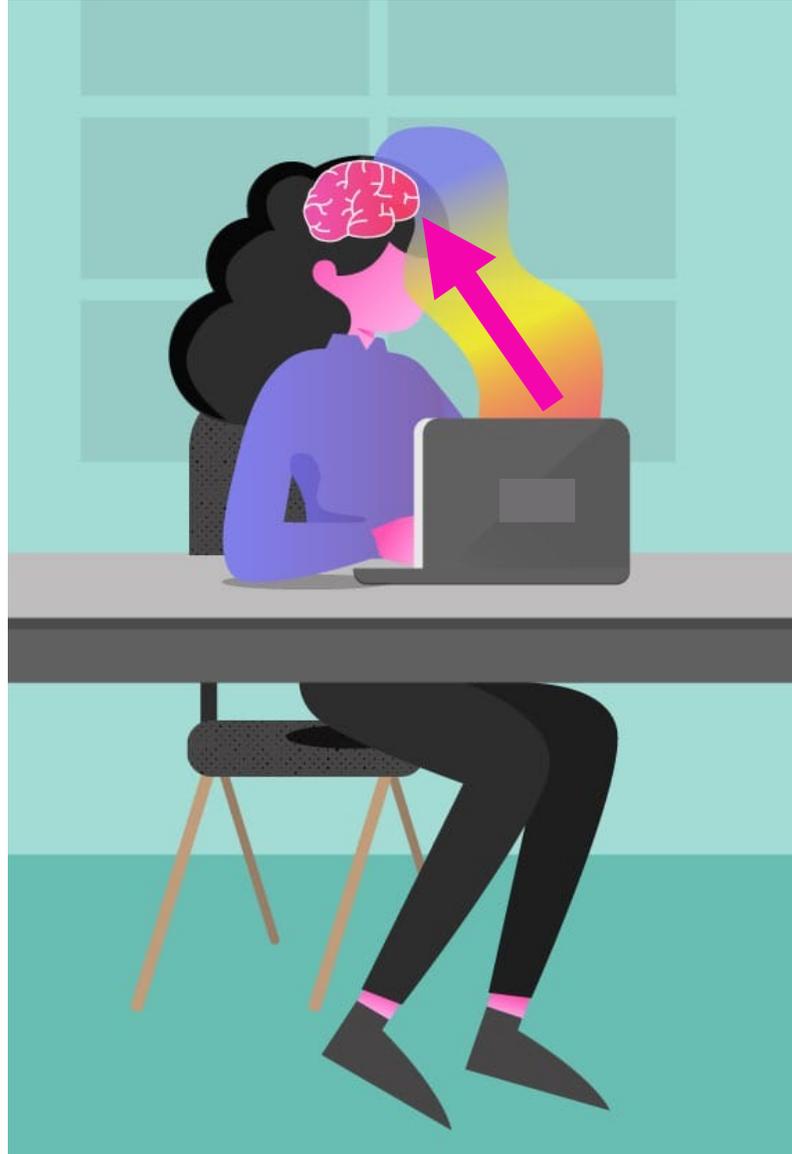
What is Retrieval Practice?
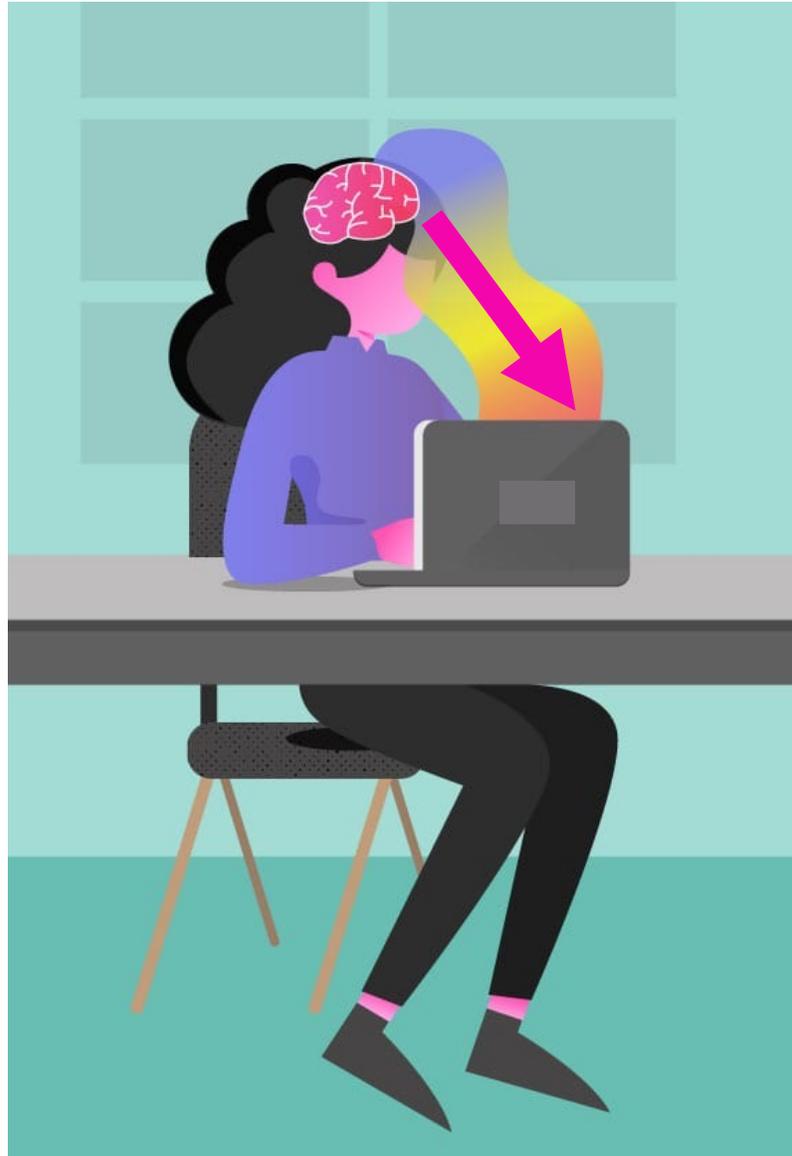
metacognition

Retrieval Practice

Roediger and Karpicke (2006a)

Spaced Retrieval Practice

Karpicke & Bauernschmidt (2011)
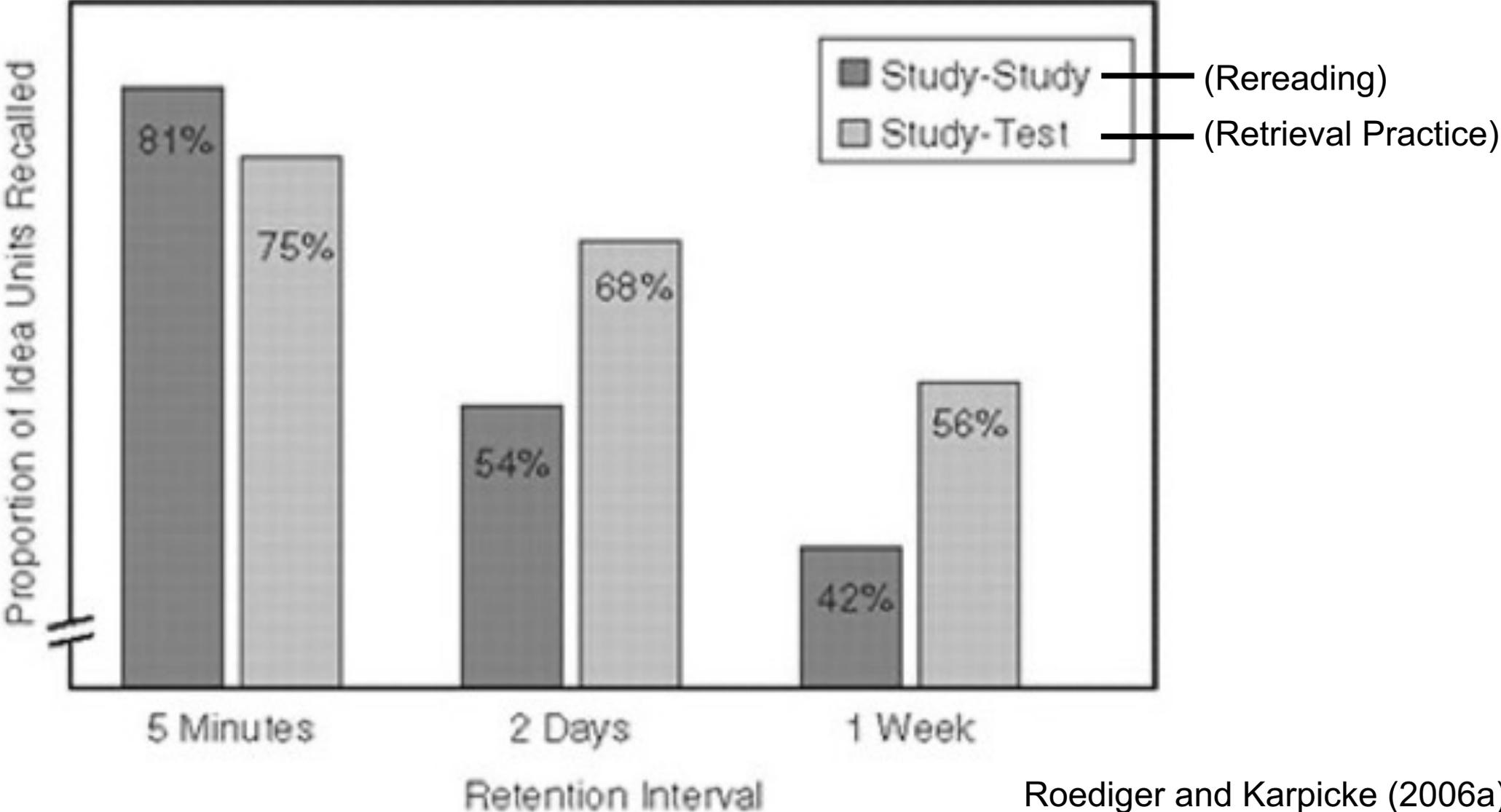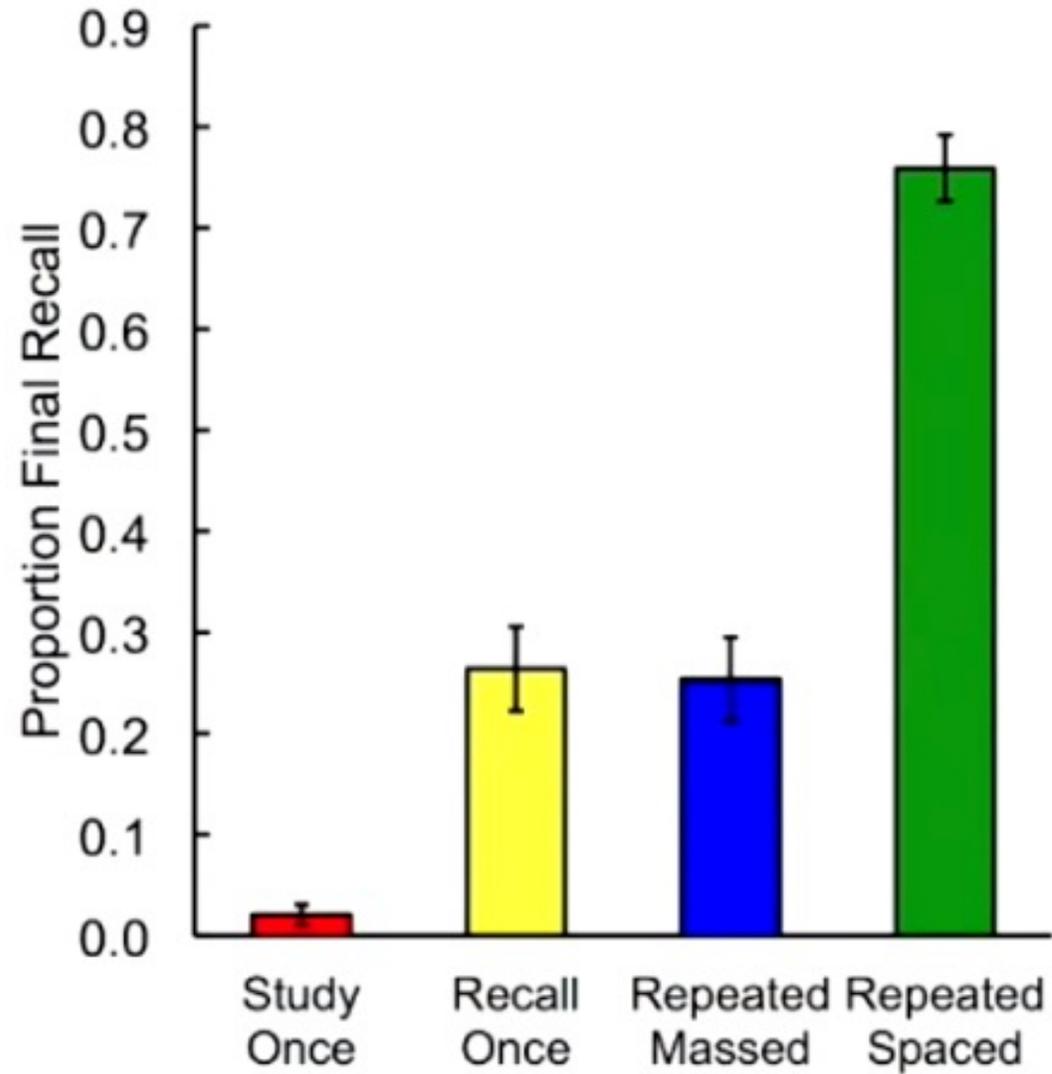
Students don't use retrieval practice

Strategy	Percent who list strategy		Percent who rank as #1 strategy	
1. Rereading notes or textbook	83.6	(148)	54.8	(97)
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Karpicke, Butler, & Roediger (2009)

Our Intervention

- Lesson
  - pre-lesson reflection
  - video lesson + quiz
  - post-lesson reflection
- Assignments
  - instructional video + quiz
  - study session 1
  - post-study session reflection
 - study session 2
  - study session 3

"I was surprised by how many students simply reread their notes if it does not work. I wonder if students realize how ineffective it is or why professors have never told us otherwise. I have never tried retrieval practice before. I did not even hear of it up until this point."

Study Session Spreadsheet Example

Concepts	Comprehension	Retrieval Practice	What is missing or inaccurate?	Comprehension
Rereading	5	Most common study strategy reported by students	Most common study strategy reported by students, **but not effective (rereading notes/textbook takes more time, but does not lead to better performance on exams)**	3

Student Reactions: Study Session 1

How much effort did you put into completing the study session spreadsheet?
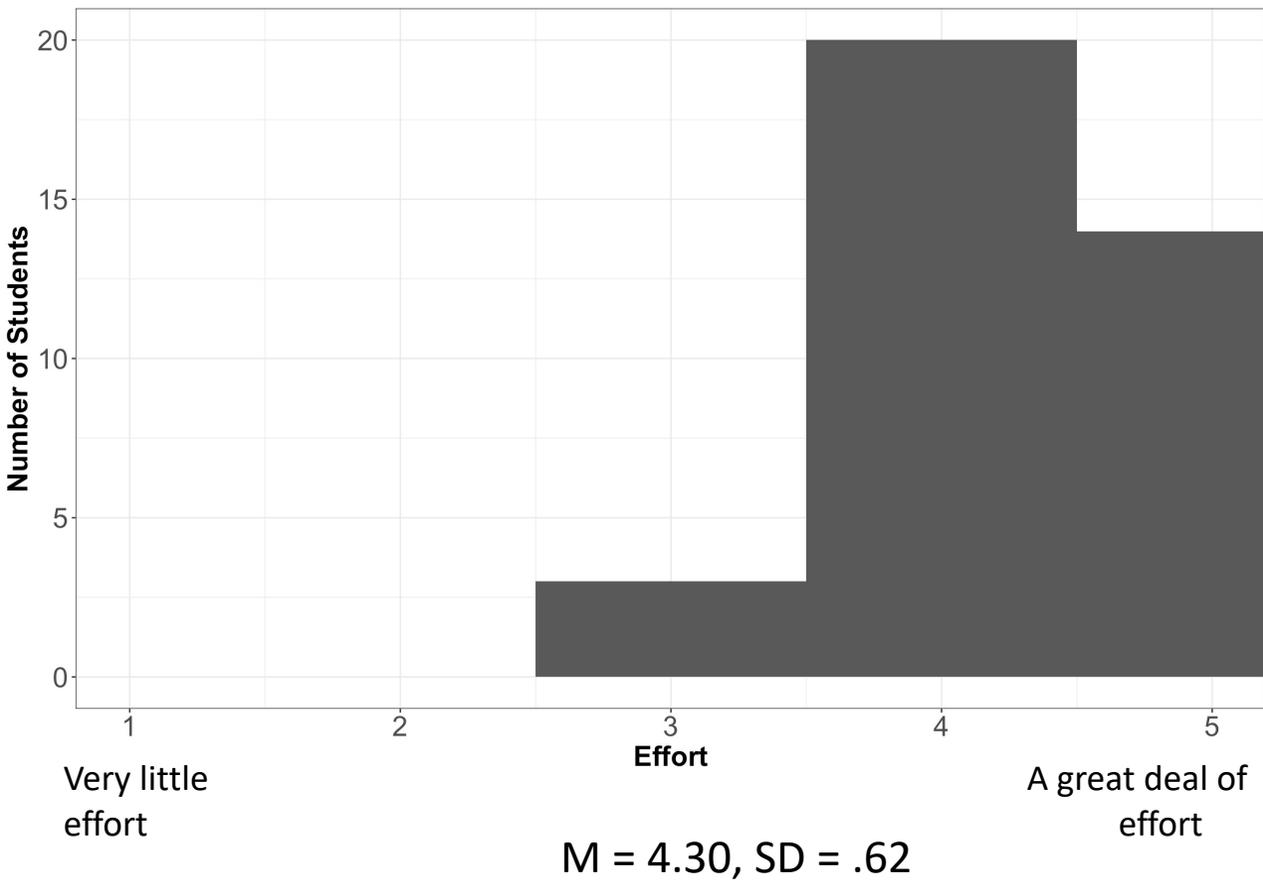
How useful do you think completing the spreadsheet was in preparing you for the upcoming exam?

M = 4.30, SD = .62

M = 4.11, SD = .77
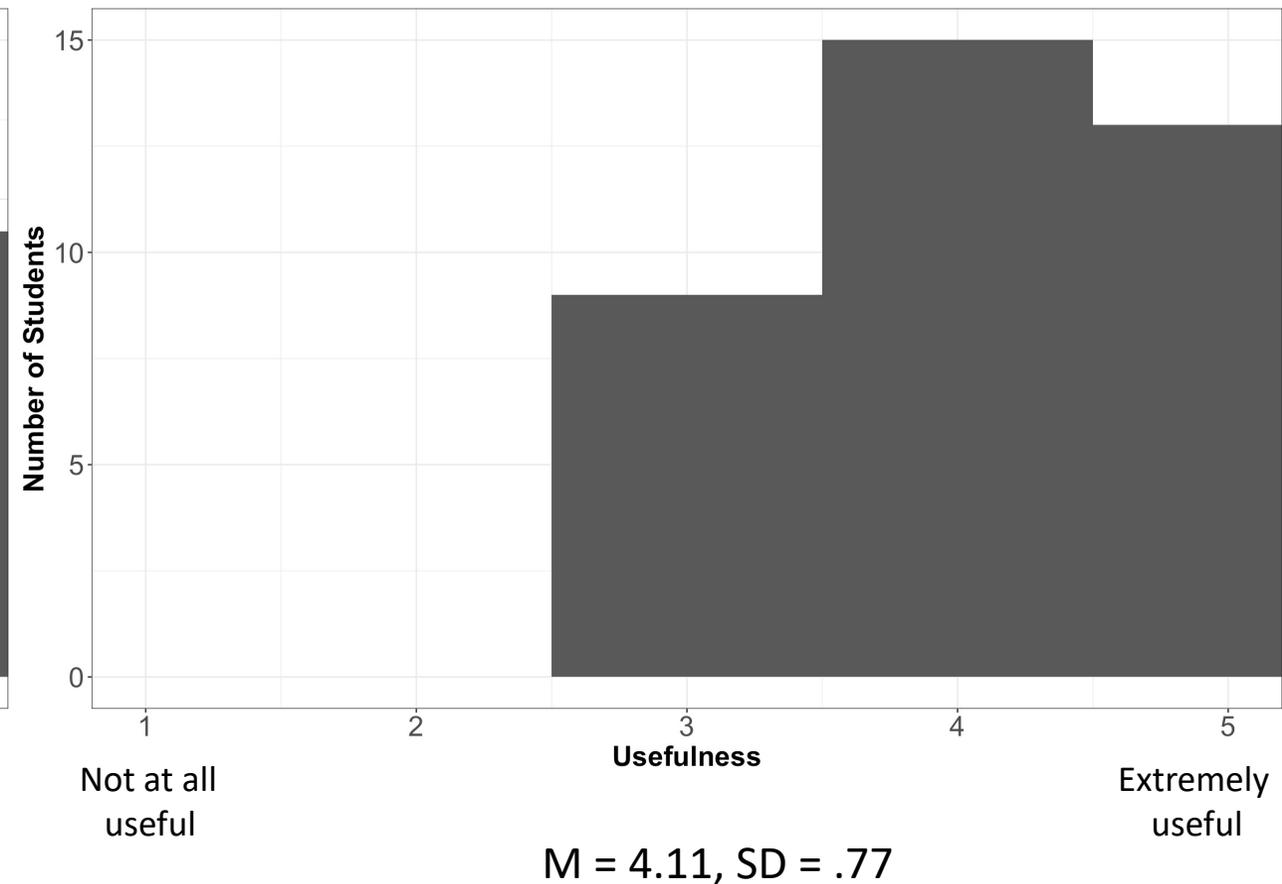
Student Reactions: Study Session 1

- *"I have never tried studying in this way, but it has completely opened my eyes to how useful it is for me...I can definitely see myself using this method to study for the rest of my time in college."*

- *"Even though it indeed took a lot more effort than to read and reread the textbook, I see that this is way more effective."*

- *"While completing the study session spreadsheet it made me realize how much information there was that I didn't know. I knew of it and was familiar with the key terms but not good enough to explain it in my own words."*

Preliminary Results:

- Intro Psych (n = 40): Performance on exam 3 was significantly predicted by total grade on the study strategies assignments (including the lesson and three study session spreadsheets), controlling for GPA, $F(1,26) = 5.96$, $p < .05$, $\eta_p^2 = .19$.

- Changes from pre- to post-course survey (n = 75):
  - Students significantly more likely to report using retrieval practice and to find it useful, and less likely to find rereading useful

Future Directions & Invitation

- Plan to revise intervention for next fall based on pilot results and student feedback
  - Adding financial compensation, thanks to Scholarship of Teaching and Learning Grant from the Society for the Teaching of Psychology division of APA

- Looking to replicate and extend beyond psychology courses, across different student populations

- Want to try this lesson/assignment in your courses?
  - Email heather.mangelsdorf@elmhurst.edu