

# DLSI NEWSLETTER

Supporting Teaching and Learning at La Salle

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## ENCOURAGING RETRIEVAL PRACTICE

Throughout the pandemic, my wife and I have been able to gather with close friends for dinner from time to time. At first over zoom, then cautiously in outdoor settings, and, more recently, on occasion around the dining room table. We used to do a lot more of this, as I am sure is true with you. Feeling more comfortable, we recently decided to host a dinner party with an extended group of friends and acquaintances. As we were putting the guest list together, I innocently asked my wife to remind me of the name of one of the proposed guests. "Are you kidding," she replied, "you've met him several times!"

I am sure you've had a similar experience. You meet someone a few times and can't remember a name...or, you read your class list to take attendance, but then can't conjure up a student's name when they show up at your office. Are we just "bad with names?"

In his book, *Small Teaching*, James Lang writes, "**If you want to retrieve knowledge from memory, you have to practice retrieving**

**knowledge from memory."** It turns out that a lot of our experiences are just processed passively; reading our class lists to take attendance...being introduced to someone...or, in the case of our students, listening to a lecture, then getting up and walking out of class when the period ends. We don't typically spend much time working at retrieving knowledge and strengthening the way we've encoded it in our memories.

This issue of the Newsletter is focused on [retrieval practice](#). It's not a specific teaching technique or instructional tool, rather it should be understood as **a mental activity that we guide our students (and ourselves) through.**

Most simply defined, retrieval practice is bringing information to mind. Technically, we are searching for memory traces in our long-term memory, retrieving them, and moving them to working memory. Cognitively speaking, this forces the reconstruction of the memory and the re-consolidation of the information. **It is a powerful cognitive tool**, and the more frequently and purposefully it is used, the better the results. The

more effort it takes...the more we can use that retrieval to make connections between concepts and our existing knowledge, the better the outcomes.

**It is hard work!** Most of us don't really enjoy retrieval practice, so our students will need structure and support as they engage in the process. **It should be made clear that struggling during these activities is where the benefit is realized.** When we give up too soon, and locate the correct answer in our notes or the text, we shortcut the retrieval and reconstruction process and undercut the effectiveness of the activity.

Once a retrieval activity is completed, students should be led beyond the concepts and definitions to think about how they are connected, why they are important, and how they can be used to create a deeper understanding of course material. This, of course, provides the opportunity for new connections to be made, more fully encoding the learning.



## ENGAGING PRACTICES ON CAMPUS

*Julie Hill, Assistant Professor, Psychology shares:*

Here are two ways I use **retrieval practice** in my *Introduction to Psychology* course: First, I start every class period with a slide labeled “retrieval practice” and 2 - 4 open ended questions on material from the previous class period or two. I then ask the students to try to answer the questions without looking at their notes from previous class periods. After a minute or two I invite them to look at their notes if they're stuck...and then, of course, we go over the correct answer.

Second, at the end of each chapter, I set up an at home "quiz" in Canvas using the multiple-choice questions from the textbook's online resources. Canvas randomly selects 10 questions from the test bank for each attempt. The questions and answers in these activities are available to the students through the e-book, but I put them in Canvas so I can track whether or not the students use them.

In Canvas, I manually grade these assignments as pass/fail, setting a passing grade at 8/10 or better. Students can retake these quizzes frequently, and the quizzes are untimed to reduce grade pressure. I encourage the students to take

these quizzes without notes, the textbook, or a classmate, as if they were in class taking an exam. If the quiz doesn't go so well, it will show them which topics they need to study, and once they do a little studying, they can take the quiz again to see if they have improved. I use Canvas's new quiz feature, where I can choose to require a certain amount of time to pass before students can retake the quiz. This can be used to encourage students to study before taking the quiz again, which forces spaced practice.

While, I can't monitor if every student completes these assignments as I intend, I do reiterate the learning purpose every single time I assign the next one. When I work with students who are struggling, I always ask them how they're approaching the quizzes. If they report they're looking up the answer for every question the first time they take the quiz, I suggest to them that they should build in some study time beforehand, so they can get the full benefit of the quiz activity.

In the future I'll call these Canvas quizzes "retrieval practice" to help differentiate them from a traditional, higher stakes, quiz.

Thanks, Julie! These are excellent **examples of retrieval practice**.

## PODCAST SPOTLIGHT

Listening to podcasts makes my commute from Delaware county bearable, and often enjoyable. So, I keep my eye out for new and useful shows or channels.



Recently, I learned about two shows that I will be paying more attention to. The first is called [Faculty Focus Live](#), and is a production of the higher education journal *Faculty Focus*. Recent shows address authentic assessment and ideas for “bringing your syllabus to life with inclusivity and creativity.”

The second suggestion is called [The Learning Scientists Podcast](#), a show produced by small team of cognitive psychologists. In fact, the link above, which explains retrieval practice, comes from their website. Various episodes explain the use of evidence-based teaching and learning strategies, and include conversations with educators who are employing these strategies.

Both of these podcasts are worthy of inclusion in your rotation, and, at least for me, have resulted in numerous connections, realizations, and new understandings that I have been able to use immediately. They are available through the links or by searching your preferred podcast platform.

## APPLYING RETRIEVAL PRACTICE

If your experience is like mine (and this is fairly easy to surmise by looking at Canvas activity), unless I am vigilant and creative, students walk out the door, and don't spend that much time thinking about our work until the day of the next class session. Even in a class where I am teaching *about how people learn*, employing the teaching tools that facilitate that learning, and emphasizing the necessity of ongoing retrieval practice, the majority of students don't submit homework until minutes before the start of the class session in which they are due.

This observation prompts me to include even more types of retrieval practice into my class sessions. The idea is not so much about getting information into long term memory, but, as [Miller \(2011\)](#) points out, securing the necessary cues to find the right information when we need it. **You see, learning isn't as much about getting information into the brain, as it is about getting it out!** This is where retrieval practice becomes useful.

There are all sorts of ways retrieval practice can be woven into our instruction. While almost all retrieval practice is helpful, there are a few factors to keep in mind in order to help students realize the most benefit.

Retrieval practice should be hard. Shortcutting the process by looking up, asking for, or being told the answer too soon dramatically reduces the benefit. These activities also should be very low, or no stakes.

**Cues** for calling up the right information at the right time are developed through retrieval practice that forces connections with previously learned concepts, or that pairs thinking with writing, sketching, drawing, or crafting other types of non-verbal representations. Finally, retrieval practice activities that mimic the form of graded assessments are helpful to students when the stakes are raised and they are being tested or otherwise evaluated.



## SOME IDEAS FOR RETRIEVAL PRACTICE

Without looking at notes, students have to answer a question about a reading that was assigned for homework as they arrive in class. Then, near the end of the class session, everyone returns to the question to correct, clarify, and document.

Near the end of class, students are asked to write three things they've learned today, then check with a peer.

Students are asked to create a graphic representation of a concept from memory, then explain their sketch.

Students are asked to write "everything they know" about a topic or concept from memory, then check their notes.

Students are asked to draw a picture of a concept, and share.

After a brief lecture, students are asked to write down, in their own words, what they think the main ideas are.

As a warm-up activity, try three questions and a connection. Ask one question from (a) the last class, (b) the previous week, and (c) from last month, followed by asking students to make a connection between those concepts.

Students are asked to create flashcards for their own retrieval practice (or for each other). The tendency here is to flip the card too soon to learn the answer or concept.

**Remember retrieval practice is supposed to be hard!**

There are many more types of activities, and we are sure many of you are quite creative in how you employ them. [We would love to hear about it!](#)

We encourage creating a regular and predictable schedule of retrieval activities, no stakes quizzes, and homework checks, followed by graded quizzes and other assessments, so that retrieval is routinized.