The Science of Learning

Learning Theory: Retrieval Practice

Definition: Retrieval practice is a strategy in which bringing information to mind enhances and boosts learning. Deliberately recalling information forces us to pull our knowledge "out" and examine what we know.

Effect: Struggling to learn – through the act of practicing what you know and recalling information – is much more effective than re-reading, taking notes, or listening to lectures. Slower, effortful retrieval leads to long-term learning. In contrast, fast, easy strategies only lead to short-term learning. (**Pooja K. Agarwal, Ph.D.**)

Why it works:

Research: Test-Enhanced Learning: Taking Memory Tests Improves Long-Term Retention Roediger, H.L., Karpicke, J.D. (2006)

Key Points from the article:

- Immediate testing promotes better long-term retention that repeated studying, even without feedback from testing.
- Spaced presentation or retrieval leads to better performance on delayed tests.
- Testing, or forced retrieval practice, creates a desirable difficulty during learning that produces elaboration of existing memory traces and their cue-target relationships.

Curricular Design Application at the Larner: Students are asked to retrieve content prior to arriving to class, in-class, and after class. We structure pedagogy in a way that encourages students to capitalize on the power of retrieval (hint—it's more effective than taking notes):

***1. Knowledge Checks built into Assigned* Independent Learning**

2. Required Quiz or IRAT

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3. In-class questions with clickers

4. Formative Quizzes

5. Integrative Review sessions

Other Resources: Retrieval Practice Osmosis Video