RETRIEVAL-BASED LEARNING: THE BEST METHOD TO IMPROVE STUDENT LEARNING

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Retrieval based learning, originally called the testing effect, is now accepted as retrieval practice since there are more ways than just testing to promote retrieval.

Henry L. Roediger III states that research has shown repeatedly that, like many plausible-sounding educational ideas, the fundamental idea behind the doctrine of formal discipline is dead wrong and was declared dead over 100 years ago. It has been said that formal discipline is simply rote memorization.

Retrieval practice by itself improves recall for later testing or application to new similar situations but even this can be improved by spacing no-stakes quizzes and interleaving. Spacing is the quizzesing at regular intervals rather than one big high-stakes quiz at the end of the learning period. Karpicke states that spaced retrieval practice took performance from nearly total forgetting to extremely good retention (about 80 percent correct). Interleaving is breaking a subject into parts and studying something else in the meantime. For example in math, instead of studying addition for a week then next week is studying subtraction for another week, you could do addition for several hours then subtraction for several hours and return to addition.

The practice of retrieval should not be too easy for students as they will forget just as easily. There has to be some difficulty so that students “work” at retrieving from memory to produce durable learning.

Quizzing can take many forms from standard multiple choice question and answer to short answer essay, to physical flashcards, to computer software generated flashcards,
to verbal questioning and answers. Each quiz should be repeated multiple times in a different format each time if possible. Quizzing also helps students with metacognition or understanding what they know and don’t know and is greatly improved by providing feedback on both correct and incorrect answers to quizzes.

The students' ability to recall and use information in different situations is referred to learning transfer, the “extending what was learned to answer new questions, solve new problems, or facilitate new learning.”

References:


Roediger, Henry L., III. “Applying Cognitive Psychology to Education: Translational Educational Science” Association for Psychological Science, Jan 8, 2013, journals.sagepub.com/stoken/rbtfi/Aq5/rcztl.2Gbl/full.