

The Effectiveness of Different Revision Strategies: The Evidence



Effective revision strategies

- Active recall (do the following without notes)
 - Answering exam questions
 - Creating/recalling flashcards
 - Writing out everything you remember, read over any information you forgot to write, then try again.

Less effective revision strategies

- Rereading your notes
- Highlighting your notes
- Writing out pages and pages of notes using a textbook

Dunlosky et al. (2013) analysed hundreds of studies on the effectiveness of ten different revision techniques, and this is what they concluded...

[Psychol Sci Public Interest](#), 2013 Jan;14(1):4-58. doi: 10.1177/1529100612453266.

Improving Students' Learning With Effective Learning Techniques: Promising Directions From Cognitive and Educational Psychology.

[Dunlosky J](#)¹, [Rawson KA](#)², [Marsh EJ](#)³, [Nathan MJ](#)⁴, [Willingham DT](#)⁵.

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Abstract

Many students are being left behind by an educational system that some people believe is in crisis. Improving educational outcomes will require efforts on many fronts, but a central premise of this monograph is that one part of a solution involves helping students to better regulate their learning through the use of effective learning techniques. Fortunately, cognitive and educational psychologists have been developing and evaluating easy-to-use learning techniques that could help students achieve their learning goals. In this monograph, we discuss 10 learning techniques in detail and offer recommendations about their relative utility. We selected techniques that were expected to be relatively easy to use and hence could be adopted by many students. Also, some techniques (e.g., highlighting and rereading) were selected because students report relying heavily on them, which makes it especially important to examine how well they work. The techniques include elaborative interrogation, self-explanation, summarization, highlighting (or underlining), the keyword mnemonic, imagery use for text learning, rereading, practice testing, distributed practice, and interleaved practice. To offer recommendations about the relative utility of these techniques, we evaluated whether their benefits generalize across four categories of variables: learning conditions, student characteristics, materials, and criterion tasks. Learning conditions include aspects of the learning environment in which the technique is implemented, such as whether a student studies alone or with a group. Student characteristics include variables such as age, ability, and level of prior knowledge. Materials vary from simple concepts to mathematical problems to complicated science texts. Criterion tasks include

Ineffective revision strategies: rereading notes

“Based on the available evidence, we rate rereading as having low utility....although rereading is relatively economical with respect to time demands, when compared with some other learning techniques, rereading is also typically less effective.”

Dunlosky J, Rawson KA, Marsh EJ, Nathan MJ, Willingham DT (2013) Improving students' learning with effective learning techniques: Promising directions from cognitive and educational psychology. Psych Sci Publ Int 14(1):4–58

Ineffective revision strategies: highlighting

“On the basis of available evidence, we rate highlighting and underlining as having low utility. In most situations, highlighting does little to boost performance. It may actually hurt performance on higher-level tasks that require inference making.”

Dunlosky J, Rawson KA, Marsh EJ, Nathan MJ, Willingham DT (2013) Improving students' learning with effective learning techniques: Promising directions from cognitive and educational psychology. *Psych Sci Publ Int* 14(1):4–58

Ineffective revision strategies: writing out pages and pages of notes

“We rate this as low utility. It can be an effective learning strategy for learners who are already skilled at summarising; however, many learners will require extensive training, which makes this strategy less feasible.”

Dunlosky J, Rawson KA, Marsh EJ, Nathan MJ, Willingham DT (2013) Improving students' learning with effective learning techniques: Promising directions from cognitive and educational psychology. *Psych Sci Publ Int* 14(1):4–58

Effective revision strategy: active recall

Simply reading notes/textbook = **passive recall**
(ineffective).

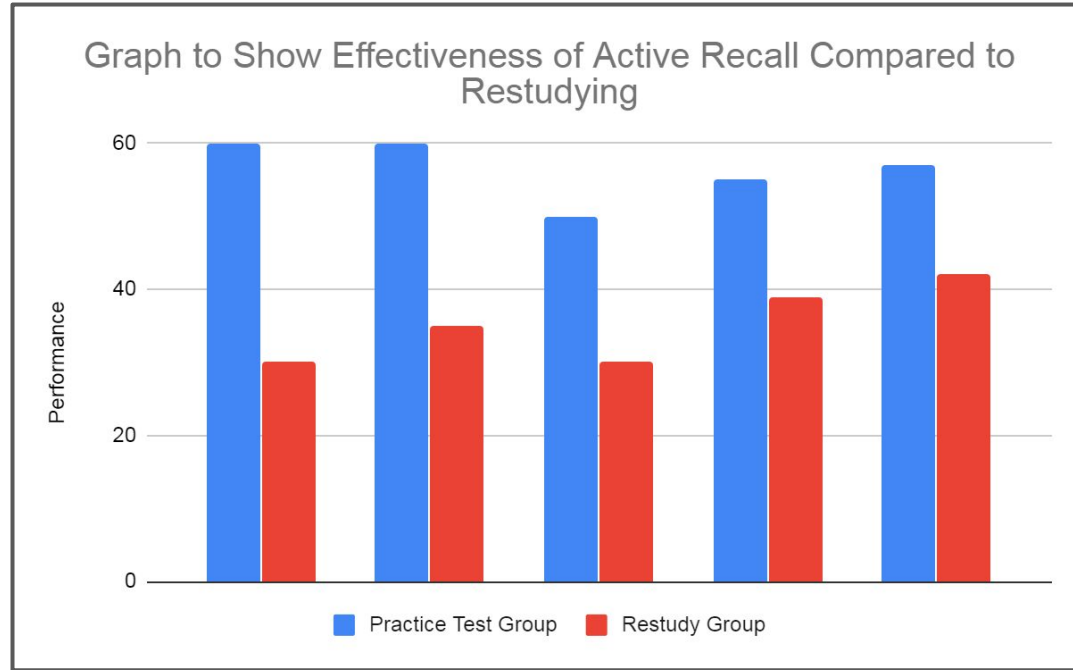


Trying to recall something without looking at your
notes/textbook = **active recall** (effective).



J D. Karpicke, et al. (2008) The Critical Importance of Retrieval for Learning,
Science 319, 966 ;DOI: 10.1126

Effective revision strategy: active recall

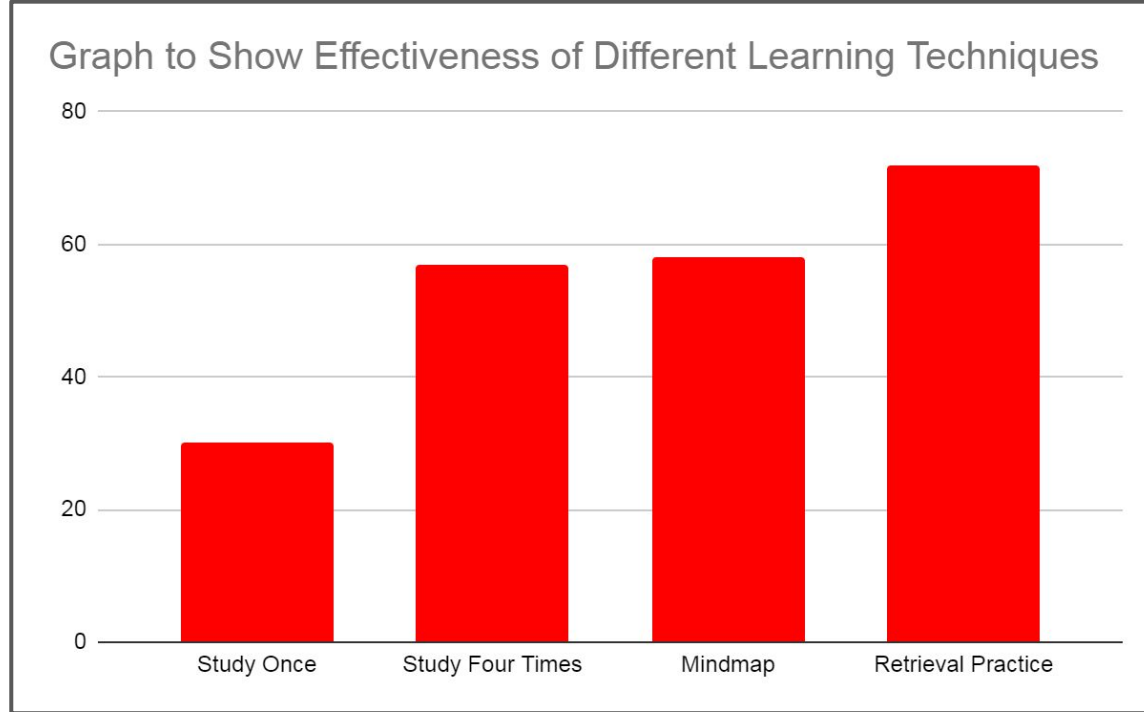


Practice Test Group
This group did a practice test after learning new information.

Restudy Group
This group simply restudied the content again after learning new information.

Butler, A.C. (2010) Repeated testing produces superior transfer of learning relative to repeated studying. *J. Exp. Psychol. Learn. Mem. Cogn.* 36, 1118–1133

Effective revision strategy: active recall



Karpicke J. D., Blunt J. R. (2011). Retrieval practice produces more learning than elaborative studying with concept mapping. *Science*, 331, 772–775.