

Study techniques that work — and (surprisingly) don't

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Is cramming before a test better than not studying at all? Is underlining material a good way to retain information? A new school year is a good time to look at the latest research on the best ways to study. What works and doesn't may surprise you.

A 2013 study called "Improving Students' Learning With Effective Learning Techniques" and published in "Psychological Science in the Public Interest," a journal of the Association for Psychological Science, evaluated the 10 most commonly used learning techniques and concluded the following about effectiveness:

Least Effective Study Techniques:

*Highlighting and underlining textbooks and other materials

*Rereading

*Summarization

*Keyword mnemonics — the use of keywords and mnemonics to help remind students of course material

*Imagery use for text learning — creating mental images to remind students of material

Why are these commonly used techniques not as effective as believed? The report says:

These techniques were rated as low utility for numerous reasons. Summarization and imagery use for text learning have been shown to help some students on some criterion tasks, yet the conditions under which these techniques produce benefits are limited, and much research is still needed to fully explore their overall effectiveness. The keyword mnemonic is difficult to implement in some contexts, and it appears to benefit students for a limited number of materials and for short retention intervals. Most students report rereading and highlighting, yet these techniques do not consistently boost students' performance, so other techniques should be used in their place (e.g., practice testing instead of rereading).

Moderately Effective Study Techniques

*Elaborative interrogation — uses “why” questions to get students to make connections between new and old material.

*Self-explanation — prompting students to provide their own explanations for problems while learning material

*Interleaved practice — mixing different kinds of problems or material in one study session

Highly Effective Study Techniques

*Practice testing — any form that allows students to test themselves, including using actual or virtual flashcards, doing problems or questions at the end of textbook chapters, or taking practice tests.

Practice testing should be completed as a low-stakes or no-stakes practice or learning activity outside of class from summative assessments that are administered by an instructor in class.

*Distributed practice — studying material over a number of relatively short sessions.

Students mass much of their study prior to tests and believe that this popular cramming strategy is effective. Although cramming is better than not studying at all in the short term, given the same amount of time for study, would students be better off spreading out their study of content? The answer to this question is a resounding “yes.” The term distributed-practice effect refers to the finding that distributing learning over time (either within a single study session or across sessions) typically benefits long-term retention more than does massing learning opportunities back-to-back or in relatively close succession.

The study, “Improving Students’ Learning With Effective Learning Techniques”, published earlier this year, was written by John Dunlosky and Katherine A. Rawson of Kent State University, Elizabeth J. Marsh of Duke University, Mitchell J. Nathan of the University of Wisconsin-Madison, and Daniel T. Willingham of the University of Virginia.