

Forget What You Know About Good Study Habits

By [BENEDICT CAREY](#)

Published: September 6, 2010

~
(Excerpts from full article referenced above...)

~
For instance, instead of sticking to one study location, simply alternating the room where a person studies improves retention. So does studying distinct but related skills or concepts in one sitting, rather than focusing intensely on a single thing.

~
But individual learning is another matter, and psychologists have discovered that some of the most hallowed advice on study habits is flat wrong. For instance, many study skills courses insist that students find a specific place, a study room or a quiet corner of the library, to take their work. The research finds just the opposite. In one classic 1978 experiment, psychologists found that college students who studied a list of 40 vocabulary words in two different rooms — one windowless and cluttered, the other modern, with a view on a courtyard — did far better on a test than students who studied the words twice, in the same room. Later studies have confirmed the finding, for a variety of topics.

The brain makes subtle associations between what it is studying and the background sensations it has at the time, the authors say, regardless of whether those perceptions are conscious. It colors the terms of the Versailles Treaty with the wasted fluorescent glow of the dorm study room, say; or the elements of the Marshall Plan with the jade-curtain shade of the willow tree in the backyard. Forcing the brain to make multiple associations with the same material may, in effect, give that information more neural scaffolding.

“What we think is happening here is that, when the outside context is varied, the information is enriched, and this slows down forgetting,” said Dr. Bjork, the senior author of the two-room experiment.

Varying the type of material studied in a single sitting — alternating, for example, among vocabulary, reading and speaking in a new language — seems to leave a deeper impression on the brain than does concentrating on just one skill at a time. Musicians have known this for years, and their practice sessions often include a mix of scales, musical pieces and rhythmic work. Many athletes, too, routinely mix their workouts with strength, speed and skill drills.

The advantages of this approach to studying can be striking, in some topic areas. [In a study recently posted online](#) by the journal Applied Cognitive Psychology, Doug Rohrer and Kelli Taylor of the University of South Florida taught a group of fourth graders four equations, each to calculate a different dimension of a prism. Half of the children learned by studying repeated examples of one equation, say, calculating the number of prism faces when given the number of sides at the base, then moving on to the next type of calculation, studying repeated examples of that. The other half studied mixed problem sets, which included examples all four types of calculations grouped together. Both groups solved sample problems along the way, as they studied.

~
Cognitive scientists do not deny that honest-to-goodness cramming can lead to a better grade on a given exam. But hurriedly jam-packing a brain is akin to speed-packing a cheap suitcase, as most students quickly learn — it holds its new load for a while, then most everything falls out.

“With many students, it’s not like they can’t remember the material” when they move to a more advanced class, said Henry L. Roediger III, a psychologist at [Washington University](#) in St. Louis. “It’s like they’ve never seen it before.”

When the neural suitcase is packed carefully and gradually, it holds its contents for far, far longer. An hour of study tonight, an hour on the weekend, another session a week from now: such so-called spacing improves later recall, without requiring students to put in more overall study effort or pay more attention, dozens of studies have found.

No one knows for sure why. It may be that the brain, when it revisits material at a later time, has to relearn some of what it has absorbed before adding new stuff — and that that process is itself self-reinforcing.

~