



On Course Newsletter July 6, 2015 Best Practices that Improve Student Learning and Retention
What Does It Take to Really Learn? By Eileen Zamora Southwestern College, CA

Which of the following are effective study techniques for learning new information and skills?

- a) Read and reread the material
- b) Recite information over and over until it's memorized
- c) Stay focused on understanding one topic or concept before moving on to another.

According to the authors of *Make It Stick: The Science of Successful Learning*, the answer is 'none of the above.' Surprised? Brown, Roediger, and McDaniel point out, "Empirical research into how we learn and remember shows that much of what we take for gospel about how to learn turns out to be wasted effort" (1). Much of what is widely accepted as effective practices is often rooted in theories and intuition. However, the authors warn us that "there's a catch: the most effective learning strategies are not intuitive" (1).

Make It Stick draws on research in the areas of cognitive psychology and neuroscience, anecdotes from individuals like pilots and neurosurgeons whose work requires mastery of complex knowledge and skills, and real-life case studies to illustrate the principles of how we learn and remember. It is designed for instructors, students, and anyone who wants to develop their skills as a life-long learner.

The authors of *Make It Stick* offer many simple and practical strategies for learning that anyone can use. Here are just a few:

Practice retrieving new learning from memory instead of spending time rereading the text. "Rereading has three strikes against it. It is time consuming. It doesn't result in durable memory. And it often involves a kind of unwitting self-deception, as growing familiarity with the text comes to feel like mastery of the content (10)...One of the best habits a learner can instill in herself is regular self quizzing to calibrate her understand of what she does and does not know" (21).

Space out your retrieval practice over time. "To be most effective, retrieval must be repeated again and again, in spaced out sessions so that the recall, rather than becoming a mindless recitation, requires some cognitive effort. Repeated recall appears to help memory consolidate into a cohesive representation in the brain and to strengthen and multiply the neural routes by which the knowledge can later be retrieved (28)... After an initial test, delaying subsequent retrieval practices is more potent for reinforcing retention than immediate practice, because delayed retrieval requires more effort" (43).

Mix up your practice rather than practicing blocks of information. "While practice is vital to learning and memory, studies have shown that practice is far more effective when it's broken into separate periods of training that are spaced out. The rapid gains of massed practice are often evident, but the rapid forgetting is not. Practice that is spaced out, interleaved with other learning, and varied produces much better mastery, longer retention and more versatility" (47).

The authors of *Make It Stick* acknowledge when implementing these 'new' strategies, both instructors and students may feel that they are more sluggish, confusing, and time consuming, and the myths of the effectiveness of "traditional" strategies for learning are difficult to overcome. However, faced with the plethora of empirical evidence that is provided in *Make It Stick* we find ourselves at a fork-in-the-road: Do we choose to continue down the same road towards teaching and learning because it feels like the right one or do we choose the road that has been proven to get us to our destination?

On Course© is an intervention process that (re)empowers student to be active, responsible learners who make consistently wise choices, both academic and personal. The outcome is increased academic success and retention.