

Have you ever studied for hours...only to struggle during the actual test?

This happens because, surprisingly, most study strategies used by students in college and high school *don't work*.

Take a look at the table below (from a study by Jeff Karpicke et. al. and presented in [this blog](#)):

Strategy	Percent who list strategy	
1. Rereading notes or textbook	83.6	(148)
2. Do practice problems	42.9	(76)
3. Flashcards	40.1	(71)
4. Rewrite notes	29.9	(53)
5. Study with a group of students	26.5	(47)
6. "Memorise"	18.6	(33)
7. Mnemonics (acronyms, rhymes, etc)	13.5	(24)
8. Make outlines or review sheets	12.9	(23)
9. Practise recall (self-testing)	10.7	(19)
10. Highlight (in notes or book)	6.2	(11)
11. Think of real life examples	4.5	(8)

The #1 strategy for the college students who were surveyed was "rereading notes or the textbook" — a strategy that takes a lot of time but is not effective. (#10 doesn't work either — highlighting and underlining only lower the value of your books when you resell them).

So what is the single most effective study technique?

It's to "practice recall" — to quiz yourself before the test. That's #9 on the chart, and only 11% of students say they use it.

Here's how it works.

1. Quiz yourself

For subjects like math, chemistry, and economics this means solving problems.

You can't learn to swim by listening to a lecture. You have to get in the pool. Similarly, you don't learn math by watching the professor work problems on the board. An effective study technique means doing practice problems like the problems worked in class, your homework (pro tip: keep up with the homework), and past tests.

The chart shows that 75% of students "do practice problems" to study. That's great — if and only if you do them *without looking at your notes*. If you can, you'll do well on the midterms and final. (For more on studying math, check out this post on [Getting As in Math](#).)

For classes like psychology, literature, and history you *do* need to read (and annotate) what you've been assigned, but there is little value in re-reading. Some of the popular study strategies in the above table *could* work — if you do them without looking at your notes.

For example, an effective study technique might include using flashcards, rewriting a chapter's worth of notes on a single page from memory (a version of #4), or making an outline from memory (a version of #8).

Spaced repetition works especially well. Study the things you aren't sure of more often, and the things you know well less often. Spaced repetition helps put the material into your long term memory.

2. Vary your approach

Everyone knows that change keeps people on their toes. This holds true with an effective study technique, as well. In addition to repeating your study questions, remember to add

some variation to your method.



For example you switch between:

Quizzing yourself on your notes

Using flashcards

Summarizing a concept, lecture or chapter

Varying the order of the problems you do.

There are dozens of ways to vary your practice. Change it up, so your brain doesn't get bored and so you stay on your toes. This will help you to retain any difficult information.

3. Practice in the Same Manner of the Test

To get the best results for almost everything in life, your practice needs to be as close to the real thing as possible. Think about how NASA trains astronauts. They can't train on the moon, but they can create environments similar to what astronauts experience in space.

You can do something similar.

For example, if your actual test will be timed, then an effective study technique would be to time yourself when you practice. Another effective study technique would be finding out the style of the test questions (multiple choice, short essay), and practice responding to that type of question during your study time.

Some professors make copies of old tests freely available. If yours does, use them! Not only will this help keep you calm, but it will build your skill at exactly what the professor wants you to know and do. Knowing what to expect helps you feel confident enough to breeze through every test!

Study Smart

If you would like to learn more about effective studying, you can:

read my blog — there are many posts on study strategies to choose from

check out [this article on making the most of your study time](#) for a few more “advanced” strategies

If you've ever put in a lot of effort but didn't do well on the exam, maybe your study strategy needs a tweak. Use these strategies, and you'll get much better results at the end of the semester.