Psychologist shares tips for studying smarter this school year

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A research-based study framework might help students shift their approach to studying in a way that maximizes learning benefit without consuming more time. Credit: University of California - Santa Cruz

Students of all ages are heading back to schools across the country this fall amid continued uncertainty over the coronavirus pandemic and concerns about learning loss and student burnout. But insights from psychology research could help to maximize learning, even in limited study time.

UC Santa Cruz Assistant Professor of Psychology Hannah Hausman

collaborated with colleagues at Colorado State University on an article that translates findings from more than 100 research papers to offer students and teachers a guiding framework and practical tips for making the most of study time. These recommendations also address common pitfalls associated with the study process.

"In order to use study time effectively, you need to know what to study, and that's the content that you still don't understand yet," said Hausman. "That may seem kind of obvious, but research shows that people actually aren't as good at figuring out what they know and don't know as you might think they would be."

In fact, many studies have shown that learners are consistently overconfident in their understanding of content from classes, particularly when they are able to easily follow along with instruction, or if they feel familiar with the concepts. But recalling, explaining, or recognizing examples of those same concepts later on during testing is a very different situation.

To study effectively, students need to more closely match how they self-assess their learning to the actual conditions under which they'll be tested. But this doesn't seem to happen naturally, even for students with a lot of test-taking experience. That's where psychology-based study frameworks can help. Hausman and her coauthors recommend a three-step process called "wait-generate-validate."

The first step in this framework, wait, means students should hold off on making any judgments about their learning until the content is no longer fresh in their minds from their initial exposure. This is crucial because tests will evaluate long-term learning and understanding, rather than short-term memory. The second step, generate, means that studying should focus on active recall and application of information, rather than passive review of content.

"What most people do when they study is immediately take out their notes or rewatch lecture videos, but what you want to do instead is get out a blank sheet of paper and try to write out the five main points from the previous lecture, or try doing any homework problems from memory first," Hausman said. "That way, you'll see what you know and don't know, and then you can go look at your notes for extra help."

Teachers can incorporate active study strategies into classroom activities too, and it's important to pair this approach with a time delay, Hausman says.

"Teachers will often ask a few questions at the end of the day to make sure students understood the lecture, but that's actually not the right time to check in," she said. "What we should do is wait until the next lecture and start with questions to see what students remember from the previous class, rather than reminding them of that content during review."

Teachers can make generation the default form of review in their classrooms and should aim to offer activities that match the format of the test as closely as possible, the article says. Another key is to have all students participate in the generation process, rather than just a few volunteers. These strategies should always be paired with the third step in the framework, "validate," which means checking in on whether [student](link) answers are complete and correct.

Hausman says students often have a hard time figuring out on their own if their answers are accurate, so teachers should point out areas for improvement. Textbooks can also provide concrete answers, with strong explanations, for each review question they offer. But it's important for review questions to always include a reminder for students to try to answer on their own first before checking answers.

That can be a tricky balancing act, and in online learning, it's an area of emerging research. Many online learning programs offer options for students to click to receive hints while working on practice questions. But Hausman says students will often click through all of the hints right away to get to the answers, and this could reduce the effectiveness of their studying.

Ultimately, Hausman hopes that, if students know the basics of the wait-generate-validate model, it might help shift their approach to studying in a way that maximizes learning benefit without consuming more time out of their already busy lives.

"Students shouldn't be intimidated by these recommendations or worry that it's going to be a ton of work to change how they study," she said. "These are really just small tweaks that can make a big difference."

Provided by University of California - Santa Cruz