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TEACHING

# Can a Different Approach to Testing Help Students Remember What They Learn?

By *Beckie Supiano* | JANUARY 09, 2020

You're reading the latest issue of *Teaching*, a weekly newsletter from a team of Chronicle journalists. [Sign up here to get it in your inbox on Thursdays.](#)

This week:

- I share the results from one professor's classroom experiment, an effort to help students retain more information and reduce their anxiety by replacing midterms with weekly quizzes.
- I pass along what a few readers have learned from K-12 teachers.
- I invite you to a happy hour in DC.
- I seek your perspective on the ways that students land in particular majors.

## Cram, Forget, Repeat

Students cram for a test. They do well on it. But before long, they forget everything they'd learned about the topic.

It's a pattern that has long troubled Kirk Fischer, an associate professor of accounting at the University of Mary Hardin-Baylor, in Texas. In a long career in the software business, he'd been struck by the gaps in new graduates' knowledge.

In the decade he has been a full-time professor, Fischer has tried to help students avoid the cramming-and-forgetting cycle. He designed his "Survey of Accounting" course — a requirement for business majors and minors at the university — around half a dozen concepts, like "build an income statement and balance sheet," that he thinks everyone working in business should know. The goal: Planting these concepts in students' long-term memories. (Fischer cites as a key influence the book *Make It Stick: The Science of Successful Learning*, which describes how memory works and the role it plays in learning.)

This past semester, he replaced the course's three midterm exams with weekly quizzes and additional homework. The idea, he explains, was to build a system that would harness the power of forced recall, which research suggests is critical for long-term retention of information. The quizzes were short-answer, rather than multiple-choice, in order to encourage students to gain a deeper understanding of the material.

Fischer planned to measure the impact of this shift on his students' performance and satisfaction. And, via a request we included in the newsletter last semester to share your teaching experiments with us, he invited us to follow along.

At the outset, he expected that moving from midterms to quizzes would have two benefits. Students, he hypothesized, would perform better on the cumulative final exam — which is aligned with the key concepts he emphasizes — since they would study more regularly. He also thought that they'd feel less anxious.

Midway through the course, Fischer conducted an informal survey and found that students were happy with how things were going. A big reason, he suspects: They were relieved not to face the pressure of midterm exams.

But the results of Fischer's experiment weren't quite what he had expected. "Students didn't do better," he says, "but they seem to enjoy it more."

Performance on the final didn't change much. Last semester's students scored an average of 81 percent on the final, compared with 83 percent the previous semester.

So grades didn't improve as Fischer had hoped, and he's not entirely sure why. Even so, he sees some positive outcomes from the change, and plans to keep using the same system, and to continue to refine it.

Students' feedback, in course evaluations and informally, showed that they liked the setup. Fischer tends to get good course evaluations, he says, but they were especially strong last semester. And student satisfaction — especially in a difficult course like accounting — matters to the larger goal of retention, he adds.

Have you found a way to alleviate test anxiety among your students? Tell me about it at [beckie.supiano@chronicle.com](mailto:beckie.supiano@chronicle.com), and your example may be included in a future newsletter.

### **A Shout-Out to K-12 Teachers**

In a recent newsletter, I passed along the Twitter handles of a few K-12 teachers whom Josh Eyler, director of faculty development at the University of Mississippi, thought readers might learn from, and asked how you follow K-12 teaching conversations. Here are some of your responses:

- Andrew M. Stoehr, an associate professor of biology at Butler University, expressed his appreciation for Paul K. Strode, a high-school science teacher in Colorado. "What is particularly notable is that he works hard to make sure that his students understand the difference between the concepts of "hypothesis" and "prediction" as they are used in biological research," Stoehr wrote. "He published a paper in 2015 in *The American Biology Teacher* based on his efforts, and the paper is fabulous. I assign it to virtually all of my college students and many (including my seniors) have said that it was eye-opening to see that they've misunderstood the distinction for so long."
- Kristin Wobbe, who co-directs the Center for Project-Based Learning at Worcester Polytechnic Institute, where she is also a professor of chemistry and biochemistry,

wrote to recommend that readers check out the TeachThought program, from Drew Perkins. “He has a great web presence,” she writes, “a strong Twitter feed, and a bunch of useful podcasts (full disclosure — I’ve participated in one).”

- Shawn M. Knopp, director of bands and an assistant professor of music education at Friends University, in Kansas, shared a more general appreciation of K-12 teachers. A former teacher himself, he said keeping an eye on K-12 practices “helps us better understand the students entering our institutions.”

### **Live and In Person!**

Are you going to the annual meeting of the Association of American Colleges & Universities this month? Please join us, along with our colleague Goldie Blumenstyk, who writes *The Edge* newsletter for *The Chronicle*, for a happy hour meet-up on Thursday, January 23, from 5 to 6:30 p.m. We’ll be in the lobby bar of the Marriott. We look forward to saying hello to you — and hearing your ideas and feedback for our respective newsletters. Not going, but know people who are? Please let them know.

### **Choosing a Major**

I was struck by a detail in a recent *Chronicle* article by Kelly Field describing how the University of Rhode Island has improved student retention: “This year, URI started requiring undeclared freshmen to take a psychometric assessment that is shared with their advisers, so they can tailor their approach to helping them choose a major.”

The timing and process of selecting a major obviously vary from one college to another. But I wondered if any other colleges use this sort of test, and what you think of the practice.

College majors have been identified by researchers as a key point of variation in student outcomes — at least when it comes to short-term earnings. That’s gotten me curious about how major selection works — and its implications for equity. How do students land in particular majors on your campus? What are the pros and cons of that system? Is this something you’ve studied or thought about? What questions do you have? Drop me a line; I’d love to hear more: [beckie.supiano@chronicle.com](mailto:beckie.supiano@chronicle.com)

Thanks for reading *Teaching*. If you have suggestions or ideas, please feel free to email us: [dan.berrett@chronicle.com](mailto:dan.berrett@chronicle.com), [beckie.supiano@chronicle.com](mailto:beckie.supiano@chronicle.com), or [beth.mcmurtrie@chronicle.com](mailto:beth.mcmurtrie@chronicle.com).

—Beckie

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