

# Researchers Find That Frequent Tests Can Boost Learning

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In schools across the U.S., multiple-choice questions such as this one provoke anxiety, even dread. Their appearance means it is testing time, and tests are big, important, excruciatingly unpleasant events.

But not at Columbia Middle School in Illinois, in the classroom of eighth grade history teacher Patrice Bain. Bain has lively blue eyes, a quick smile, and spiky platinum hair that looks punkish and pixieish at the same time. After displaying the question on a smartboard, she pauses as her students enter their responses on numbered devices known as clickers.

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Then, eight years ago, she met Mark McDaniel through a mutual acquaintance. McDaniel is a psychology professor at Washington University in St. Louis, a half an hour's drive from Bain's school. McDaniel had started to describe to Bain his research on retrieval practice when she broke in with an exclamation. "Patrice said, 'I do that in my classroom! It works!'" McDaniel recalls. He went on to explain to Bain that what he and his colleagues refer to as retrieval practice is, essentially, testing. "We used to call it 'the testing effect' until we got smart and realized that no teacher or parent would want to touch a technique that had the word 'test' in it," McDaniel notes now.

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Why would this be? It makes sense considering that we could not possibly remember everything we encounter, says Jeffrey Karpicke, a professor of cognitive psychology at Purdue University. Given that our memory is necessarily selective, the usefulness of a fact or idea—as demonstrated by how often we have had reason to recall it—makes a sound basis for selection. "Our minds are sensitive to the likelihood that we'll need knowledge at a future time, and if we retrieve a piece of information now, there's a good chance we'll need it again," Karpicke explains. "The process of retrieving a memory alters that memory in anticipation of demands we may encounter in the future."

Read the whole story: [Scientific American](#)