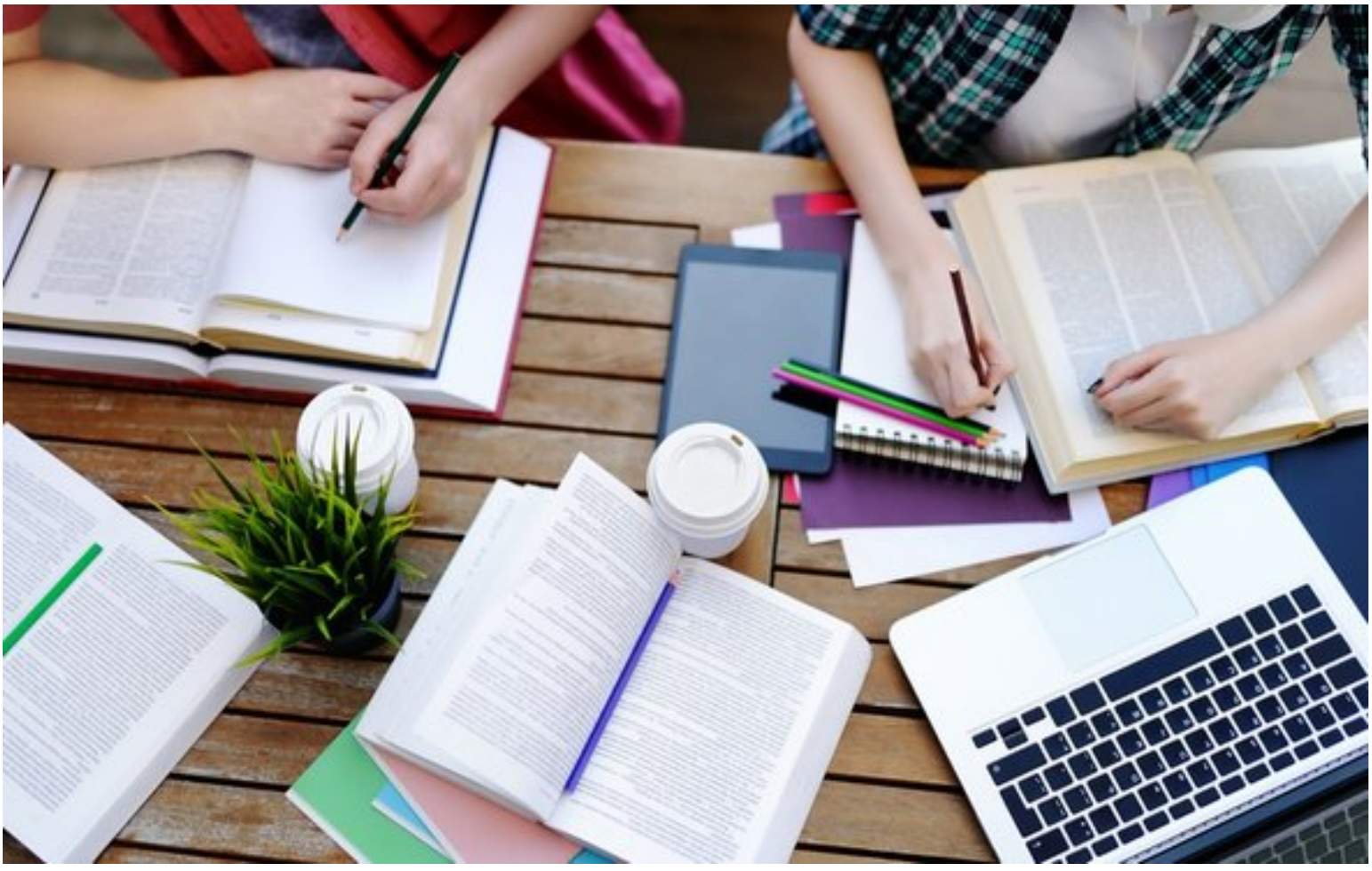
There is little scientific support for this fashionable idea—and stronger evidence for other learning strategies

By Cindi May on May 29, 2018



Credit: Getty Images

When it comes to home projects, I am a step-by-step kind of girl. I read the instructions from start to finish, and then reread and execute each step. My husband, on the other hand, prefers to study the diagrams and then jump right in. Think owner's manual versus IKEA instructions. This preference for one approach over another when learning new information is not uncommon. Indeed the notion that people learn in different ways is such a pervasive belief in American culture that there is a thriving industry dedicated to identifying learning styles and training teachers to meet the needs of different learners.

Just because a notion is popular, however, doesn't make it true. A recent review of the scientific literature on learning styles found scant evidence to clearly support the idea that outcomes are best when instructional techniques align with individuals' learning styles. In fact, there are several studies that contradict this belief. It is clear that people have a strong sense of their own learning preferences (e.g., visual, kinesthetic, intuitive), but it is less clear that these preferences matter.

Research by Polly Hussman and Valerie Dean O'Loughlin at Indiana University takes a new look at this important question. Most previous investigations on learning styles focused on classroom learning, and assessed whether instructional style impacted outcomes for different types of learners. But is the classroom really where most of the serious learning occurs? Some might argue that, in this era of flipped classrooms and online course materials, students master more of the information on their own. That might explain why instructional style in the classroom matters little. It also raises the possibility that learning styles do matter—perhaps a match between students' individual learning styles and their study strategies is the key to optimal outcomes.

To explore this possibility, Hussman and O'Loughlin asked students enrolled in an anatomy class to complete an online learning styles assessment and answer questions about their study strategies. More than 400 students completed the VARK (visual, auditory, reading/writing, kinesthetic) learning styles evaluation and reported details about the techniques they used for mastering material outside of class (e.g., flash cards, review of lecture notes, anatomy coloring books). Researchers also tracked their performance in both the lecture and lab components of the course.

Scores on the VARK suggested that most students used multiple learning styles (e.g., visual + kinesthetic or reading/writing + visual + auditory), but that no particular style (or combination of styles) resulted in better outcomes than another. The focus in this study, however, was not on whether a particular learning style was more advantageous. Instead, the research addressed two primary questions: First, do students who take the VARK questionnaire to identify their personal learning style adopt study strategies that align with that style? Second, are the learning outcomes better for students whose strategies match their VARK profile than for students whose strategies do not?

Despite knowing their own, self-reported learning preferences, nearly 70% of students failed to employ study techniques that supported those preferences. Most visual learners did not rely heavily on visual strategies (e.g., diagrams, graphics), nor did most reading/writing learners rely predominantly on reading strategies (e.g., review of notes or textbook), and so on. Given the prevailing belief that learning styles matter, and the fact many students blame poor academic performance on the lack of a match between their learning style and teachers' instructional methods, one might expect students to rely on techniques that support their personal learning preferences when working on their own.

Perhaps the best students do. Nearly a third of the students in the study did choose strategies that were consistent with their reported learning style. Did that pay off? In a word, no. Students whose study strategies aligned with their VARK scores performed no better in either the lecture or lab component of the course.

So most students are not employing study strategies that mesh with self-reported learning preferences, and the minority who do show no academic benefit. Although students believe that learning preferences influence performance, this research affirms the mounting evidence that they do not, even when students are mastering information on their own. These findings suggest a general lack of student awareness about the processes and behaviors that support effective learning. Consistent with this notion, Hussman and O'Loughlin also found negative correlations between many of the common study strategies reported by students (e.g., making flashcards, use of outside websites) and course performance. Thus regardless of individual learning style or the alignment of the style with study techniques, many students are adopting strategies that simply do not support comprehension and retention of information.

Fortunately, cognitive science has identified a number of methods to enhance knowledge acquisition, and these techniques have fairly universal benefit. Students are more successful when they space out their study sessions over time, experience the material in multiple modalities, test themselves on the material as part of their study practices, and elaborate on material to make meaningful connections rather than engaging in activities that involve simple repetition of information (e.g., making flashcards or recopying notes). These effective strategies were identified decades ago and have convincing and significant empirical support. Why then, do we persist in our belief that learning styles matter, and ignore these tried and true techniques?

The popularity of the learning styles mythology may stem in part from the appeal of finding out what "type of person" you are, along with the desire to be treated as an

individual within the education system. In contrast, the notion that universal strategies may enhance learning for all belies the idea that we are unique, individual learners. In addition, most empirically-supported techniques involve planning (e.g., scheduling study sessions over a series of days) and significant effort (e.g., taking practice tests in advance of a classroom assessment), and let's face it, we don't want to work that hard.

ABOUT THE AUTHOR(S)

Cindi May

Cindi May is a Professor of Psychology at the College of Charleston. She explores avenues for improving cognitive function in college students, older adults, and individuals with intellectual disabilities. She is also an advocate for inclusive educational and social opportunities for people with disabilities.

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