

Learning Styles

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What are Learning Styles?

The term *learning styles* is widely used to describe how learners gather, sift through, interpret, organize, come to conclusions about, and “store” information for further use. As spelled out in [VARK](#) (one of the most popular learning styles inventories), these styles are often categorized by sensory approaches: visual, aural, verbal [reading/writing], and kinesthetic. Many of the models that don’t resemble the VARK’s sensory focus are reminiscent of Felder and Silverman’s [Index of Learning Styles](#), with a continuum of descriptors for how learners process and organize information: active-reflective, sensing-intuitive, verbal-visual, and sequential-global.

There are well over 70 different learning styles schemes (Coffield, 2004), most of which are supported by “a thriving industry devoted to publishing learning-styles tests and guidebooks” and “professional development workshops for teachers and educators” (Pashler, et al., 2009, p. 105).

Despite the variation in categories, the fundamental idea behind learning styles is the same: that each of us has a specific learning style (sometimes called a “preference”), and we learn best when information is presented to us in this style. For example, visual learners would learn any subject matter best if given graphically or through other kinds of visual images, kinesthetic learners would learn more effectively if they could involve bodily movements in the learning process, and so on. **The message thus given to instructors is that “optimal instruction requires diagnosing individuals’ learning style[s] and tailoring instruction accordingly”** (Pashler, et al., 2009, p. 105).

Caution!

Despite the popularity of learning styles and inventories such as the VARK, it’s important to know that **there is no evidence to support the idea that matching activities to one’s learning style improves learning**. It’s not simply a matter of “the absence of evidence doesn’t mean the evidence of absence.” On the contrary, for years researchers have tried to make this connection through hundreds of studies.

In 2009, Psychological Science in the Public Interest commissioned cognitive psychologists Harold Pashler, Mark McDaniel, Doug Rohrer, and Robert Bjork to evaluate the research on learning styles to determine whether there is credible evidence to support using learning styles in instruction. They came to a startling but clear conclusion: “Although the literature on learning styles is enormous,” they “found virtually no evidence” supporting the idea that “instruction is best provided in a format that matches the preference of the learner.” Many of those studies suffered from weak research design, rendering them far from convincing. Others with an effective experimental design “found results that flatly contradict the popular” assumptions about learning styles (p. 105). In sum,

“The contrast between the enormous popularity of the learning-styles approach within education and the lack of credible evidence for its utility is, in our opinion, striking and disturbing” (p. 117).

Why Are They So Popular?

Pashler and his colleagues point to some reasons to explain why learning styles have gained—and kept—such traction, aside from the enormous industry that supports the concept. First, **people like to identify themselves and others by “type.”** Such categories help order the social environment and offer quick ways of understanding each other. Also, this approach appeals to the idea that learners should be recognized as “unique individuals”—or, more precisely, that **differences among students should be acknowledged**—rather than treated as a number in a crowd

or a faceless class of students (p. 107). Carried further, teaching to different learning styles suggests that “**all people have the potential to learn effectively and easily if only instruction is tailored to their individual learning styles**” (p. 107).

There may be another reason why this approach to learning styles is so widely accepted. They very loosely resemble the concept of **metacognition**, or the process of thinking about one’s thinking. For instance, having your students describe which study strategies and conditions for their last exam worked for them and which didn’t is likely to improve their studying on the next exam (Tanner, 2012). Integrating such metacognitive activities into the classroom—unlike learning styles—is supported by a wealth of research (e.g., Askill Williams, Lawson, & Murray-Harvey, 2007; Bransford, Brown, & Cocking, 2000; Butler & Winne, 1995; Isaacson & Fujita, 2006; Nelson & Dunlosky, 1991; Tobias & Everson, 2002).

Importantly, metacognition is focused on planning, monitoring, and evaluating any kind of thinking about thinking and does nothing to connect one’s identity or abilities to any singular approach to knowledge. (For more information about metacognition, see CFT Assistant Director Cynthia Brame's "[Thinking about Metacognition](#)" blog post, and stay tuned for a Teaching Guide on metacognition this spring.)

Now What?

There is, however, something you can take away from these different approaches to learning—not based on the learner, but instead on the content being learned. To explore the persistence of the belief in learning styles, CFT Assistant Director Nancy Chick interviewed Dr. Bill Cerbin, Professor of Psychology and Director of the Center for Advancing Teaching and Learning at the University of Wisconsin-La Crosse and former Carnegie Scholar with the Carnegie Academy for the Scholarship of Teaching and Learning. He points out that the differences identified by the labels “visual, auditory, kinesthetic, and reading/writing” are more appropriately connected to the nature of the discipline:

“There may be evidence that indicates that **there are some ways to teach some subjects that are just better than others**, despite the learning styles of individuals.... If you’re thinking about teaching sculpture, I’m not sure that long tracts of verbal descriptions of statues or of sculptures would be a particularly effective way for individuals to learn about works of art. Naturally, these are physical objects and you need to take a look at them, you might even need to handle them.” (Cerbin, 2011, [7:45-8:30](#))

Pashler and his colleagues agree: “An obvious point is that the optimal instructional method is likely to vary across disciplines” (p. 116). In other words, it makes disciplinary sense to include kinesthetic activities in sculpture and anatomy courses, reading/writing activities in literature and history courses, visual activities in geography and engineering courses, and auditory activities in music, foreign language, and speech courses. Obvious or not, it aligns teaching and learning with the contours of the subject matter, without limiting the potential abilities of the learners.

References

- Askill-Williams, H., Lawson, M. & Murray, Harvey, R. (2007). [‘What happens in my university classes that helps me to learn?’: Teacher education students’ instructional metacognitive knowledge.](#) *International Journal of the Scholarship of Teaching and Learning*, 1. 1-21.
- Bransford, J. D., Brown, A. L. & Cocking, R. R., (Eds.). (2000). [How people learn: Brain, mind, experience, and school](#) (Expanded Edition). Washington, D.C.: National Academy Press.
- Butler, D. L., & Winne, P. H. (1995) [Feedback and self-regulated learning: A theoretical synthesis.](#) *Review of Educational Research*, 65, 245-281.
- Cerbin, William. (2011). [Understanding learning styles: A conversation with Dr. Bill Cerbin.](#) Interview with Nancy Chick. *UW Colleges Virtual Teaching and Learning Center.*
- Coffield, F., Moseley, D., Hall, E., & Ecclestone, K. (2004). [Learning styles and pedagogy in post-16 learning. A systematic and critical review.](#) London: Learning and Skills Research Centre.

- Isaacson, R. M. & Fujita, F. (2006). [Metacognitive knowledge monitoring and self-regulated learning: Academic success and reflections on learning](#). *Journal of the Scholarship of Teaching and Learning*, 6, 39-55.
- Nelson, T.O. & Dunlosky, J. (1991). The delayed-JOL effect: When delaying your judgments of learning can improve the accuracy of your metacognitive monitoring. *Psychological Science*, 2, 267-270.
- Pashler, Harold, McDaniel, M., Rohrer, D., & Bjork, R. (2008). [Learning styles: Concepts and evidence](#). *Psychological Science in the Public Interest*. 9.3 103-119.
- Tobias, S., & Everson, H. (2002). [Knowing what you know and what you don't: Further research on metacognitive knowledge monitoring](#). *College Board Report No. 2002-3*. College Board, NY.



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