

## If you're an aural learner, read this aloud to yourself

by [Colby Cosh](#) on Wednesday, January 6, 2010

A new study in the APS journal *Psychological Science in the Public Interest* [[PDF](#)] inquires into the scientific basis for one of the most influential fashions in current pedagogy: the idea that different students have different kinds of optimal “learning styles”. The number of “learning style” taxonomies being peddled by various authors and theorists is in the dozens. It’s a lucrative business, as Pashler et al. point out, and it has gotten a firm toehold in the public schools and education textbooks (and, he might have added, in homeschooling literature). One of the most popular theories is the “[VARK](#)” schema, which sorts the human species into visual, aural, “read/write”, and kinesthetic learners.

If you’re like me, you may have encountered this notion in the guise of somebody’s excuse for doing poorly, or for somebody else doing poorly, on a course or a test. I suspect that the younger you are, the more likely you are to have heard it. And I sometimes suspect, heaven forgive me, that the function of much educational research is to keep parents supplied with such excuses—to provide middle-class children with prefabricated “sick roles”, in the argot of sociology. But I digress.

It is obvious and empirically demonstrable that many students do possess specifiable permanent preferences for learning by means of one sensory mode or another. In practice, this is how most “learning styles” handbooks and articles recommend sorting students into style types: by asking ‘em what type they are. No teacher really has time to do the sorting by means of a validated test. With younger students, who have not yet learned their own preferred “modalities” through trial-and-error and introspection and (perhaps) plenty of frustration and difficulty, the educator may be left to use intuition and guesswork. Some feel confident in their judgment; some don’t.

The question Harold Pashler and his group set out to answer was whether there is any strong scientific evidence for “learning styles” at all. It’s not enough, they argue, to show that people have preferences. The relevant version of the “learning styles” hypothesis is that students will actually benefit from receiving instruction that matches their preferences—what the authors call the “meshing hypothesis”.

Confirming that hypothesis to a scientific standard, they suggest, would not be particularly difficult. It is child’s play to design a randomized, controlled experiment to test it: take two groups of learners sorted into “style” groups by whatever method you like, select a common learning task, have a randomly-chosen half of each group work on the task by their preferred/optimal means and the other half learn the “wrong way”, and test everybody. Bam. If you find a significant “crossover interaction”—instructional mode Q works best for the Q group, but X works best for the X group—the “meshing hypothesis” wins.

The punch line is that almost nobody has ever even tried anything of the sort. By this definition, the actual “scientific” literature on learning styles is virtually nonexistent, and most of what does exist found no crossover effect. There is, as yet, no good reason to think that some students are thwarted by being taught in the wrong style. Pashler et al. admit that this could easily still be the case: their review of the literature is not, as some have characterized it, a “debunking” or a “refutation”. It is merely an argument that an educational sub-industry has grown to very impressive size without any meaningful experimental warrant.

Some might react to the Pashler argument by proposing that the meshing hypothesis, even if the science behind it is weak, is just common sense. But “common sense” weighs equally strongly in defence of the possibility that teachers of all kinds might want to focus on matching instructional methods to the material being taught, rather than the student. It all depends on your *a priori* ideas about human beings—whether we are highly heterogenous when it comes to learning, or highly homogenous. That’s why we need experiments, as the authors of the paper argue:

Basic research on human learning and memory, especially research on human metacognition, much of it carried out in the last 20 years or so, has demonstrated that our intuitions and beliefs about how we learn are often wrong in serious ways. We do not, apparently, gain an understanding of the complexities of human learning and memory from the trials and errors of everyday living and learning. ... This fact makes it clear that research—not intuition or standard practices—needs to be the foundation for upgrading teaching and learning. If education is to be transformed into an evidence-based field, it is important not only to identify teaching techniques that have experimental support but also to identify widely held beliefs that affect the choices made by educational practitioners but that lack empirical support. On the basis of our review, the belief that learning-style assessments are useful in educational contexts appears to be just that—a belief.

[David Glenn of the Chronicle of Higher Education](#) [bounced the Pashler result off of other psychologists](#). Some argue that Pashler’s review of the literature might not have been deep enough, but at least one of the founding fathers of the “learning styles” field, David Kolb, agrees that matching instruction to the “style” of particular students is probably a waste of time. Interesting blog reactions are also available from [education professor John Lloyd](#), [psychology professor Richard Landers](#), and [management professor Peter Smith](#). On a side note, Hal Pashler is [also a co-author](#) of the “[Voodoo Correlations](#)” [paper](#) that has recently caused a remarkable furor in neuroscience circles. But that’s a whole other kettle of herring...