Myth #18 Students Learn Best When Teaching Styles Are Matched to Their Learning Styles

In the headline story “Parents of Nasal Learners Demand Odor-based Curriculum,” writers at the satirical newspaper, The Onion (2000), poked good-natured fun at the idea that there is a teaching style to unlock every underperforming student’s hidden potential (http://www.runet.edu/~thompson/obias.xhtml). We’ve all observed students in the same classes learning in different ways. Many people believe that all students could achieve at the same level if only teachers would tailor their teaching styles to each student’s learning style. As one parent in The Onion story put it, “My child is not stupid. There simply was no way for him to thrive in a school that only caters to traditional students who absorb educational concepts by hearing, reading, seeing, discussing, drawing, building, or acting out.” An educational researcher noted that “Nasal learners often have difficulty concentrating and dislike doing homework … If your child fits this description, I would strongly urge you to get him or her tested for a possible nasal orientation.” According to the story, we don’t need to consider ability or motivation, because all students are equally capable. Any failure to learn means only that teachers haven’t accommodated adequately to a student’s learning style.

Of course, the nasal story was fiction, but it’s not all that far from reality. Plug the words “learning styles” into an Internet search engine, and you’ll find any number of websites claiming to diagnose your preferred learning style in a matter of minutes. One informs visitors that “Learning styles are a way to help improve your quality of learning. By understanding your own personal styles, you can adapt the learning process and techniques you use.” It also directs them to a free “Learning Styles Inventory” that over 400,000 people have taken (http://www.learning-styles-online.com). There, you can find out whether you’re primarily a visual learner, a social learner, an auditory (sound) learner, a physical learner, and so on. These sites are premised on a straightforward and widely accepted claim: Students learn best when teaching styles are matched to their learning styles.

It’s understandable why this view is so popular: Rather than implying that some students are “better” or “worse” learners overall than others, it implies that all students can learn well, perhaps equally well, given just the right teaching style (Willingham, 2004). In addition, this view dovetails with the representative heuristic: like goes with like (see Introduction, p. 15). Advocates of this hypothesis claim that verbally oriented students learn best from teachers who emphasize words, visually oriented students learn best from teachers who emphasize images, and so on.

Ronald Hyman and Barbara Rosoff (1984) described the four steps of the learning styles (LS) approach: (1) Examine students’ individual learning styles, (2) classify each style into one of a few categories, (3) match it to the teaching style (TS) of a teacher or request that teachers adjust their TS to match the student’s LS, and (4) teach teachers to perform steps 1-3 in their training programs. These authors noted that each step imposes a requirement for the approach to work. These requirements include (a) a clear concept of LS, (b) a reliable and valid way to assess and classify students’ LS, (c) knowledge of how LS and TS interact to influence learning, and (d) the ability to train teachers to adjust their TS to match students’ LS. Writing in 1984, Hyman and Rosoff didn’t believe that any of these requirements had been met. We’ll soon see if their negative verdict has stood the test of time.

The notion that assessing students’ LS is effective has become a virtual truism in educational theory and practice. It’s been extolled in many popular books, such as Teaching Students to Read through Their Individual Learning Styles (Carbo, Dunn, & Dunn, 1986), and Discover Your Child’s Learning Style: Children Learn as Teaching Students to Read through Their Individual Learning Styles (Carbo, Dunn, & Dunn, 1986), and Discover Your Child’s Learning Style: Children Learn in Unique Ways (Willis & Hodson, 1999). In an article entitled “Dispelling outdated beliefs about student learning” in a popular educational journal, the authors debunked 15 myths about student learning, but began by proclaiming that the belief that “Students learn best when instruction and learning context match their learning style” was well supported (Dunn & Dunn, 1987, p. 55). In many school districts, questions about matching TS to LS are routine in interviews for aspiring teachers (Alferink, 2007). Many teachers share the field’s enthusiasm: The results of one survey of 109 science teachers revealed that most displayed positive attitudes toward the idea of matching their TS to students’ LS (Ballone & Czerniak, 2001). Not surprisingly, workshops on educating instructors about matching their styles to students’ learning styles are popular, often attracting hundreds of teachers and principals (Stahl, 1999). In some schools, teachers have even asked children to wear shirts emblazoned with the letters V, A, K, which, as we’ll soon learn, stand for three widely discussed learning styles—visual, auditory, and kinesthetic (Geake, 2008).

The prevalence of these beliefs is underscored by the sheer volume of articles published in the educational literature on LS, the vast number of LS models proposed, and the enormous commercial success of LS measures. An August, 2008 search of the ERIC database, which catalogues educational scholarship, revealed a whopping 1,984 journal articles, 919 conference presentations, and 701 books or book chapters on LS. In the most comprehensive review of the LS literature, Frank Coffield and his colleagues (Coffield, Moseley, Hall, & Ecclestone, 2004) counted no fewer than 71 LS models. For example, the “VAK” model targets visual, auditory, and kinesthetic learners, who allegedly learn best by seeing and reading, listening and speaking, or touching and doing, respectively. Peter Honey and Alan Mumford’s (2000) model classifies students into four categories: “activists,” who immerse themselves in new experiences, “reflectors,” who
sit back and observe, “theorists,” who think through problems logically, and “pragmatists,” who apply their ideas to the real world.

The LS movement has even embraced models and measures developed for very different purposes. Howard Gardner’s (1983) influential theory of multiple intelligences is often considered an LS classification, and some teachers use the Myers-Briggs Type Indicator (Briggs & Myers, 1998), which was developed as a psychoanalytically oriented personality inventory (Hunsley, Lee, & Wood, 2003), to classify students’ LS. Honey and Mumford’s (2000) Learning Styles Questionnaire is popular, as are two different measures both called the Learning Styles Inventory (Dunn, Dunn, & Price, 1999; Kolb, 1999).

Among the 3,604 ERIC entries related to LS, less than one quarter are peer-reviewed articles. Likewise, Coffield et al. (2004) compiled a database of thousands of books, journal articles, theses, magazine articles, websites, conference papers, and unpublished literature. Few were published in peer-reviewed journals and fewer still were well-controlled studies. In other words, much of LS literature is flying “under the radar,” bypassing anonymous critical feedback by expert scholars.

Fortunately, theory and research are available to address each of the four requirements spelled out by Hyman and Rosoff (1984). First, is there a clear concept of LS? The answer appears to be no. Among the most popular of the LS models Coffield et al. (2004) reviewed, the differences are much more striking than the similarities. For example, the VAK model is based on learners’ preferred sensory modalities (visual, auditory, or kinesthetic), whereas the Honey–Mumford model, which divides students into activists, reflectors, theorists, and pragmatists, doesn’t even address the issue of sensory modalities. There’s no agreement on what LS is, despite decades of study.

Second, is there a reliable and valid way to assess students’ LS? Again, the answer seems to be no (Snider, 1992; Stahl, 1999). Gregory Kratzig and Katherine Arbuthnott (2006) found no relationship between LS classifications and memory performance on visual, auditory, and kinesthetic versions of a task. Supposedly visual learners did no better at the visual version of the task than the auditory or kinesthetic versions, and the same was true for each preferred sensory modality. Perhaps one reason for the unsatisfactory reliability and validity of LS inventories is that these measures usually assess learning preferences devoid of context (Coffield et al., 2004; Hyman & Rosoff, 1984). In other words, models and measures of LS don’t come to grips with the possibility that the best approaches to teaching and learning may depend on what students are trying to learn. Consider the first question on the Paragon Learning Style Inventory (http://www.oswego.edu/plsi/plsi48a.htm): “When you come to a new situation you usually (a) try it right away and learn from doing, or (b) like to watch first and try it later?” It’s difficult to answer this question without knowing the type of new situation. Would you learn to read a new language, solve mathematical equations, and perform gymnastics routines using the same methods? If so, we’d certainly be concerned. Most LS models don’t place learning into a meaningful context, so it’s not surprising that measures based on these models aren’t especially reliable or valid.

Third, is there evidence to support the effectiveness of matching instructors’ TS to students’ LS? From the 1970s onward, at least as many studies have failed to support this approach as have supported it (Kavale & Forness, 1987; Kratzig & Arbuthnott, 2006; Stahl, 1999; Zhang, 2006). That’s mostly because certain TSs often yield better results than all others regardless of students’ LS (Geake, 2008; Zhang, 2006). The 2007 film Freedom Writers, starring Hilary Swank as real-life teacher Erin Gruwell, illustrates this point. After a shaky beginning as a teacher with students torn by boundaries of race, Gruwell became engrossed in her students’ lives and immersed them in the study of the Holocaust. By adopting a teaching style that went beyond ordinary classroom methods, she helped all of her students to appreciate and avoid the pitfalls of prejudice. Yet Gruwell didn’t match her TS to students’ LS. Instead, like many great teachers, she achieved outstanding results by developing an innovative TS to which the entire class responded enthusiastically.

Fourth, can educators train teachers to adapt their TS to match students’ LS? Again, the commercial claims outstrip the scientific evidence. Coffield et al. (2004) noted minimal research support for this possibility, and positive results for using LS inventories to guide teaching training are at best weak. There are no clear implications for teaching practices because few well-conducted studies provide evidence, and those that do offer inconsistent advice.

So the popular belief that encouraging teachers to match their TS to students’ LS enhances their learning turns out to be an urban legend of educational psychology. To the extent that this approach encourages teachers to teach to students’ intellectual strengths rather than their weak nesses, it could actually backfire. Students need to correct and compensate for their shortcomings, not avoid them. Otherwise, their areas of intellectual weakness may grow still weaker. Because life outside the classroom doesn’t always conform to our preferred styles of learning, good teaching must prepare us to confront real-world challenges. We agree with Frank Coffield, who said that “We do students a serious disservice by implying they have only one learning style, rather than a flexible repertoire from which to choose, depending on the context” (Henry, 2007).