

THE UNKILLABLE LEARNING STYLES MYTH

Michael A. Blasie

“There is no credible evidence that learning styles exist.”¹ But that does not necessarily mean we should ignore them.

I. The Learning Styles Myth

The Learning Styles Myth claims that students (of any age) learn better when taught in a mode that matches their dominant way of learning.² There are at least 71 classes of learning styles.³ You probably know one of the most popular ones, which divides people into visual, auditory, or kinesthetic learners.⁴ Thus, according to the Myth, a visual learner might learn addition best by counting objects, an auditory learner by listening to rhythms, and a kinesthetic learner by moving beads.⁵

The Myth is enormously popular.⁶ In industrialized countries, around 80–95% of teachers and the general public believe in the Myth.⁷ Huge numbers of instructor textbooks and teaching programs

¹ Cedar Riener & Daniel Willingham, *The Myth of Learning Styles*, 42(5) CHANGE: MAG. HIGHER LEARNING 32, 33 (2010).

² Shaylene E. Nancekivell, Priti Shah & Susan A. Gelman, *Maybe They're Born With It, or Maybe It's Experience: Toward a Deeper Understanding of the Learning Style Myth*, 112(2) J. EDUC. PSYCH. 221, 221 (2020).

³ Frank Coffield, David Moseley, Elaine Hall & Kathryn Ecclestone, LEARNING STYLES AND PEDAGOGY IN POST-16 LEARNING: A SYSTEMATIC AND CRITICAL REVIEW 1 (2004), <https://www.leerbeleving.nl/wp-content/uploads/2011/09/learning-styles.pdf> [<https://perma.cc/CR2V-W73U>].

⁴ Daniel T. Willingham, Elizabeth M. Hughes & David G. Dobolyi, *The Scientific Status of Learning Styles Theories*, 42(3) TEACHING PSYCH. 266, 266 (2015).

⁵ *Id.*

⁶ Harold Pashler, Mark McDaniel, Doug Rohrer & Robert Bjork, *Learning Styles: Concepts And Evidence*, 9 PSYCH. SCIENCE IN THE PUB. INT. 105, 105 (2008).

⁷ Nancekivell, Shah & Gelman, *supra* note 2, at 221.

promote the Myth.⁸ You, your colleagues, and your students have probably been exposed to the Myth multiple times.⁹

II. How We Know the Learning Styles Myth is a Myth

Logically and scientifically, the Myth has little or no support.

Start with logic. To be clear, the Myth does not say people can only learn a particular way: a literate auditory learner with working eyesight can surely still learn by reading. Rather, the Myth claims that the auditory learner would learn better with a book on tape rather than with a physical book *no matter what the book is about*. Logically, such a position is untenable because it is untethered to content. “If I were to tell you ‘I want to teach you something. Would you rather learn it by seeing a slideshow, reading it as text, hearing it as a podcast, or enacting it in a series of movements,’ do you think you could answer without first asking what you were to learn—a dance, a piece of music, or an equation?”¹⁰

⁸ Vicki E. Snider & Rebecca Roehl, *Teachers’ Beliefs About Pedagogy and Related Issues*, 44 PSYCH. IN THE SCHOOLS 873, 880–81 (2007); Beth A. Rogowsky, Barbara M. Calhoun & Paula Tallal, *Matching Learning Style to Instructional Method: Effects on Comprehension*, 107(1) J. EDUC. PSYCH. 64, 65 (2015); William Furey, *The Stubborn Myth of “Learning Styles,”* 20(3) EDUC. NEXT 8 (2020), https://www.educationnext.org/wp-content/uploads/2022/01/ednext_XX_3_furey.pdf [<https://perma.cc/9GUH-827N>].

⁹ Several well-intentioned law school pedagogical articles encourage considering learning styles. See, e.g., Ian Weinstein, *Learning and Lawyering Across Personality Types*, 21 CLINICAL L. REV. 427, 439–40 (2015); Diane Murley, *What Second Life Taught Me About Learning*, 100 L. LIBR. J. 787, 791–92 (2008); Louis N. Schulze Jr., *Alternative Justifications for Academic Support II: How “Academic Support Across the Curriculum” Helps Meet the Goals of the Carnegie Report and Best Practices*, 40 CAP. U. L. REV. 1, 48–49 (2012); Alex Berrio Matamoros, *Answering the Call: Flipping the Classroom to Prepare Practice-Ready Attorneys*, 43 CAP. U. L. REV. 113, 138–43 (2015); Louis N. Schulze, Jr., *Alternative Justifications for Law School Academic Support Programs: Self-Determination Theory, Autonomy Support, and Humanizing the Law School*, 5 CHARLESTON L. REV. 269, 315–17 (2011); Elizabeth M. Bloom, *Teaching Law Students to Teach Themselves: Using Lessons from Educational Psychology to Shape Self-Regulated Learners*, 59 WAYNE L. REV. 311, 333 (2013); Benjamin V. Madison, III, *The Elephant in Law School Classrooms: Overuse of the Socratic Method as an Obstacle to Teaching Modern Law Students*, 85 U. DET. MERCY L. REV. 293, 312–15 (2008).

¹⁰ Riener & Willingham, *supra* note 1, at 34.

Now switch to science. How would you test the Myth? First, divide people into groups based on their learning style.¹¹ Second, teach a topic to some of them in a mode that matches their learning style, and the others in a mode that does not.¹² Third, assess everyone on what they learned.¹³ According to the Myth, the students whose learning style matched the mode should do better.¹⁴ Researchers have done this experiment many times and the results are unambiguous:

- “To date, there has been no evidence that matching or meshing instruction to someone’s self-reported learning style positively affects their ability to learn new information”¹⁵
- “Overall, our results do not provide a convincing rationale for customizing different on-line instruction programs for visualizers and verbalizers.”¹⁶
- “[W]hen these tendencies are put to the test under controlled conditions, they make no difference—learning is equivalent whether students learn in the preferred mode or not.”¹⁷
- “Several reviews that span decades have evaluated the literature on learning styles [citations omitted], and each has drawn the conclusion that there is no viable evidence to support the theory”¹⁸
- “In spite of the widespread popularity of [the visualizer/verbalizer learning style] among educators, the search for research-based [learning styles] over the last 25 years has had a somewhat disappointing history”¹⁹

¹¹ Rogowsky, Calhoun & Tallal, *supra* note 8, at 65.

¹² *Id.*

¹³ *Id.*

¹⁴ *Id.*

¹⁵ Nancekivell, Shah & Gelman, *supra* note 2, at 221.

¹⁶ Laura Massa & Richard Mayer, *Testing The ATI Hypothesis: Should Multimedia Instruction Accommodate Verbalizer-Visualizer Cognitive Style?* 16(4) LEARNING & INDIVIDUAL DIFFERENCES 321, 334 (2006) (referring to this “matching” as attribute-treatment interaction (ATI) hypothesis). *See also* Rogowsky, Calhoun & Tallal, *supra* note 8, at 76.

¹⁷ Riener & Willingham, *supra* note 1, at 34.

¹⁸ Willingham, Hughes & Dobolyi, *supra* note 4, at 267. *Accord* Pashler, McDaniel, Rohrer & Bjork, *supra* note 6, at 111–15; Doug Rohrer & Harold Pashler, *Learning Styles: Where’s the Evidence?* 46 MED. EDUC. 634, 634 (2012).

¹⁹ Massa & Mayer, *supra* note 16, at 321.

- “Reviews of the literature have repeatedly failed to find support for matching instruction to particular learning styles.”²⁰
- “[A] thoughtful review of the data provides no support for style-based instruction.”²¹
- “[T]he belief in learning styles stems from an incorrect interpretation of valid research findings and scientifically established facts. . . . despite the intuitive appeal, there is little to no empirical evidence that learning styles are real. The fields of cognitive psychology and neuroscience consider them a ‘neuromyth’ and disavow the practice of matching instruction to individuals’ preferred learning styles to promote learning. In these fields, believing in learning styles has been compared to believing in fortunetelling.”²²
- “[T]here presently is no empirical justification for tailoring instruction to students’ supposedly different learning styles.”²³

III. Why The Learning Styles Myth is So Popular and Makes So Much Sense

You can probably remember times when the Myth seemed true. You may have wonderful memories of using multi-colored highlighters or drawing on a board. The Myth remains appealing for several reasons.

First, confirmation bias.²⁴ When you explained the same point to the same student for the eighth time but this time drew a chart and miraculously the student suddenly got it, you might conclude “Ah, the student was a visual learner. If only I had known earlier.”²⁵ Nope. There are many reasons the chart worked, but learning styles is not one of them. Maybe the chart was a more effective way to communicate the content for any student.²⁶ Or maybe the student just needed to hear the content explained one more time, regardless of the mode.²⁷ “Many accounts of the sudden insight are possible, but the

²⁰ Snider & Roehl, *supra* note 8, at 881.

²¹ Rohrer & Pashler, *supra* note 18, at 34.

²² Furey, *supra* note 8, at 8.

²³ Rohrer & Pashler, *supra* note 18, at 635.

²⁴ Willingham, Hughes & Dobolyi, *supra* note 4, at 268.

²⁵ *Id.*

²⁶ *Id.*

²⁷ *Id.*

confirmation bias would lead to an interpretation that supports one's existing beliefs."²⁸

Second, the Myth champions individuality, which everyone likes. Just like with personality tests and BuzzFeed quizzes, we like the idea of discovering what kind of person we are.²⁹

Third, the Myth is empowering (at the teacher's expense). The Myth allows students to believe they have the potential to learn any material "effectively and *easily* if only instruction is tailored to their individual learning styles."³⁰ The Myth suggests everyone has strengths³¹ and any content is learnable through alternate routes: if a student struggles with math but excels in music, just find a way to teach math through music.³²

Fourth, the Myth has immense social proof. Because so many people believe in the Myth and so many sources mention or promote it, surely the Myth must be true.³³ A massive industry profits off the Myth by selling learning style assessments, materials, and trainings.³⁴

Fifth, the Myth is a tempting pedagogical middle ground between treating every student uniquely and treating them all the same.³⁵

IV. How the Learning Styles Myth Harms Law School Students and Professors

The Learning Styles Myth has short-term and long-term consequences for students. To start, students spread the Myth and invest in a process that does not work. Indeed, two well-intentioned law school students who won a combined sixteen CALI awards (awards for the highest grade in a law school course) wrote an article recommending students adjust their studying techniques by learning style.³⁶ Catering to one's perceived learning style may waste time and money, not work, or cause a student to misdiagnose the cause of successes or setbacks. At the same time, the Myth may disempower students. Many people believe learning styles are unchangeable brain

²⁸ *Id.*

²⁹ Pashler, McDaniel, Rohrer & Bjork, *supra* note 6, at 107.

³⁰ *Id.* at 108 (emphasis added).

³¹ Riener & Willingham, *supra* note 1, at 34.

³² Willingham, Hughes & Dobolyi, *supra* note 4, at 268.

³³ *Id.*

³⁴ Furey, *supra* note 8, at 2; Nancekivell, Shah & Gelman, *supra* note 2, at 221.

³⁵ Willingham, Hughes & Dobolyi, *supra* note 4, at 269.

³⁶ Stephen E. Schilling & Rebecca M. Greendyke, *How to Win A CALI Award: Some Personal Advice from Two Law Students Who Have Done It*, 36 U. DAYTON L. REV. 167, 171–76 (2011).

characteristics.³⁷ Thus, self-labeled kinesthetic learners might view themselves at a perpetual disadvantage in the reading-dominated field of law. Or a self-diagnosed visual learner might disengage from a lecture-heavy class.³⁸ Such students might never attempt to learn through a different style or might avoid opportunities that involve their perceived weaknesses. In short, the Myth suggests to students that their abilities are limited by something they cannot change or may cause students to place artificial constraints on their learning potential whenever the situation does not match their perceived learning style.³⁹ Likewise, the Myth encourages students to use one approach for all content—study for constitutional law the same way you study for civil procedure and trial advocacy—rather than adjusting their studying techniques by class or topic.

All of this is contrary to a growth mindset and grit, both traits a growing consensus of practitioners and scholars believe are essential to successful law students and lawyers.⁴⁰ The Learning Styles Myth is consistent with a fixed mindset, where a person believes their talents and qualities are static and unalterable.⁴¹ Myth adherents may feel helpless unless others adapt to their style. If others—professors, supervisors, judges, clients—do not change, those with fixed mindsets tend to make decisions to only pursue opportunities and roles that play to their perceived strengths and even then only to the degree they perceive is within their reach: “People with a fixed mindset thrive when things are within their grasp, but quickly lose interest if they perceive something is too challenging.”⁴² Students who believe they have a learning style and that their learning style does not align with the mode of law school classes, exams, or exercises may feel hopelessness or may believe they are incapable of changing. They may also perceive professors, supervisors, and the legal profession as unsupportive when others do not adapt to their learning style.

By contrast, a growth mindset is a belief that talents and qualities can be built, changed, and cultivated.⁴³ “The power of adopting a growth mindset early in law school is critical. . . . students may lose

³⁷ Nancekivell, Shah & Gelman, *supra* note 2, at 231–32.

³⁸ Riener & Willingham, *supra* note 1, at 35.

³⁹ Nancekivell, Shah & Gelman, *supra* note 2, at 222. See also Aida M. Alaka, *Learning Styles: What Difference Do the Differences Make?* 5 CHARLESTON L. REV. 133, 167 (2011).

⁴⁰ Megan Bess, *Grit, Growth Mindset, and the Path to Successful Lawyering*, 89 UMKC L. REV. 493, 512, 516 (2021).

⁴¹ See *id.* at 507–08.

⁴² *Id.* at 507.

⁴³ *Id.* at 507–08.

confidence in their abilities to improve and grow as they move through law school. If we are going to counteract that troubling pattern, we need to intervene early with a message about resilience that resonates with 1Ls.”⁴⁴ With a growth mindset, every student is capable of learning to absorb information delivered in any mode. Doing so may take time and involve setbacks, but is possible. Relatedly, grit is the quality of maintaining passion and perseverance toward a long-term goal despite setbacks and challenges.⁴⁵ The Learning Styles Myth undermines a growth mindset and prevents the development of grit.

At the same time, the Myth promotes ineffective teaching. To adhere to the Myth, logistically a teacher would need to (1) choose which of the 71 classes of learning styles to consider and why, and separate learning styles from mild preferences,⁴⁶ (2) assess every student, and (3) design and teach each topic in multiple ways based on the total number of learning styles in the class. The Myth encourages wasting time and effort⁴⁷ when often all students would benefit from receiving information in multiple modes. Or the Myth causes teachers to focus on matching the teaching mode to learning styles instead of matching the teaching mode with the content.⁴⁸ Some subjects are best taught visually, others verbally, and still others by a combination of the two (or by a different mode).⁴⁹ Even if future evidence supports the Myth, the costs of assessing each student and designing multiple versions of the same content may not outweigh the benefits of other approaches.⁵⁰

More, the Myth distracts professors from focusing on meaningful differences between students.⁵¹ For example, just because some students have stronger verbal ability and weaker spatial ability than their peers “does not imply that such students will learn anatomy better if their textbook has few diagrams.”⁵² But differences in abilities, interests, background knowledge, and skillsets can affect how students learn,⁵³ as can factors like learning disabilities,

⁴⁴ Aric K. Short, *Infusing Leadership Competencies into 1L Professional Identity Formation*, 62 SANTA CLARA L. REV. 113, 134–35 (2022).

⁴⁵ Bess, *supra* note 40, at 508.

⁴⁶ Alaka, *supra* note 39, at 163.

⁴⁷ Nancekivell, Shah & Gelman, *supra* note 2, at 221–22.

⁴⁸ Riener & Willingham, *supra* note 1, at 35.

⁴⁹ Rohrer & Pashler, *supra* note 18, at 635.

⁵⁰ *Id.*

⁵¹ Riener & Willingham, *supra* note 1, at 24.

⁵² Rohrer & Pashler, *supra* note 18, at 635.

⁵³ Riener & Willingham, *supra* note 1, at 33–34.

the teacher-student relationship, task clarity, feedback, opportunities to practice, environmental conditions, and classroom dynamics.⁵⁴ Every minute spent thinking about learning styles is a minute not spent on what matters.

Plus, the Myth encourages struggling students to blame the teacher: If you had taught me the way I needed, then I would have understood it.⁵⁵ Thus, the Myth may affect how students complete teaching evaluations, whether the student is interested in the class, whether the student views the class content as attainable, and whether the student perceives the professor as effective.⁵⁶

Finally, the practice of law requires all lawyers to learn content presented in any mode.⁵⁷ Clients do not adapt to the lawyer's preferences. Rather, it is the lawyer who must adapt to the client. Indeed, lawyers have a responsibility to learn to work effectively with a wide range of clients. Lawyers must overcome language and cultural barriers, navigate highly emotional contexts, and work with a wide variety of people. Rightfully or wrongfully, legal supervisors and courts also do not modify their work styles and preferences for specific lawyers. Thus, presenting information in different modes—including modes students perceive as their weaknesses—may help the students grow, change, and become creative so they are well-prepared to practice law.⁵⁸

V. Why We Should Not Kill the Learning Styles Myth

If learning styles do not exist, then perhaps we professors should kill the Myth. Not so fast.

While learning styles may be a myth, Learning *Preferences* is not. Learning Preferences is the concept that “people will, if asked, volunteer preferences about their preferred mode of taking in new information and studying.”⁵⁹ Learning Preferences can come from many potential sources, like students' incorrect belief they have a learning style, past experiences (flashcards worked well before), or emotional reactions to how certain information is presented. “In other words, there is a difference between the way we prefer to receive information (often these are emotional/noncognitive choices) and the

⁵⁴ Alaka, *supra* note 39, at 163–64.

⁵⁵ Pashler, McDaniel, Rohrer & Bjork, *supra* note 6, at 108.

⁵⁶ Riener & Willingham, *supra* note 1, at 35.

⁵⁷ Alaka, *supra* note 39, at 164–65.

⁵⁸ *Id.*

⁵⁹ Pashler, McDaniel, Rohrer & Bjork, *supra* note 6, at 108.

way we actually learn.”⁶⁰ The existence of Learning Preferences alongside the Learning Styles Myth presents a teaching conundrum: is there value to matching a student’s Learning Preferences when studies show that those preferences make no difference? Potentially yes.

While studies show matching Learning Preferences does not impact information retention in a particular lesson, maybe the matching affects other aspects of learning. Matching Learning Preferences might improve a student’s motivation or interest in the material or help the student feel more comfortable or competent with the material, all effects that can aid learning and help promote a diverse and inclusive classroom.⁶¹ Dispelling the Myth could be traumatic, as students may take great pride in years spent developing or finding their Learning Preferences or might view these preferences as part of their self-identify. Indeed, some Learning Preferences may derive from a student’s culture, like an upbringing focused on communal living or cooperative problem solving.⁶² Especially for students experiencing imposter syndrome, matching Learning Preferences may help them perceive the classroom as an effective learning environment, which could help their learning process.⁶³ None of the studies testing the Myth measured student learning over time to account for intangibles like comfort in the classroom or belief the teacher is effective.

At the same time, teaching exclusively to Learning Preferences is likely not a good idea. In addition to being pragmatically infeasible, some evidence suggests teaching methods that are very likeable/popular or that yield quick results are ineffective in the long run.⁶⁴ But perhaps momentarily doing something students like, even if they like

⁶⁰ Deborah L. Borman & Catherine Haras, *Something Borrowed: Interdisciplinary Strategies for Legal Education*, 68 J. LEG. EDUC. 357, 362 (2019).

⁶¹ Rory Bahadur & Liyun Zhang, *Socratic Teaching and Learning Styles: Exposing the Pervasiveness of Implicit Bias and White Privilege in Legal Pedagogy*, 18 HASTINGS RACE & POVERTY L. J. 114, 140, 145–46, 163 (2021).

⁶² *Id.* at 146–49.

⁶³ *Id.* at 165.

⁶⁴ Pashler, McDaniel, Rohrer & Bjork, *supra* note 6, at 117. For interesting videos illustrating this point, see Veritasium, *Khan Academy and the Effectiveness of Science Videos*, YOUTUBE, Mar. 17, 2011, <https://www.youtube.com/watch?v=eVtCO84MDj8> [<https://perma.cc/UFH3-9U72>]; Veritasium, *How We Should Teach Science*, YOUTUBE, Mar. 7, 2017, <https://www.youtube.com/watch?v=Gstcview6FVM> [<https://perma.cc/7PYJ-8KYE>].

it for the wrong reasons and even if it does not work, may actually do good in the long run.

At its core, the pedagogical challenge is how to get students to replace their Learning Preferences with a growth mindset and grit such that they have the confidence to learn information presented in any mode. Here are a few suggestions on how to thread this needle. First, provide students with information about growth mindset and grit. Consider presenting data, anecdotes, or even TED talks.⁶⁵ Second, show students they might be overestimating their weaknesses. For example, you could have students predict their abilities on an ungraded exercise they are uncomfortable performing, like an oral argument. Then they perform the exercise. Then they conduct a post-exercise reflection. Often students will comment that the exercise went better than expected. That realization can help students reevaluate their Learning Preferences. Third, have students perform a task they are weak at multiple times and see how they are improving. Legal writing classes tend to do this more than other law school classes because of the large amount of assignments and feedback. But even in-class exercises, like performing a client interview or talking about a case, may be effective ways of showing improvement. If students see they are improving, then they will avoid a fixed mindset and adopt more of a growth mindset. They will also see they can learn in different modes. Finally, consider having a lesson where students demonstrate the skill of transfer: how what they did in one context applies in a different context.⁶⁶ List every assignment or exercise the students completed so far alongside a list of the challenges they face in a new assignment. Then ask them to identify ways they can use what they learned from the old assignments and exercises to solve the new assignment's challenges. The hope is to reveal that what seems new is mostly a variation of something they have done before and already know how to do. Here again, building the skill of transfer chips away at learning preferences by showing students they can use what they are already comfortable with to tackle

⁶⁵ See, e.g., Angela Duckworth, *Grit: The Power of Passion and Perseverance*, TED, April 2013, https://www.ted.com/talks/angela_lee_duckworth_grit_the_power_of_passion_and_perseverance?language=en [<https://perma.cc/72PF-GZ88>]; The Grit Project, ABA, https://www.americanbar.org/groups/diversity/women/initiatives_awards/gritproject/ [<https://perma.cc/G5G3-XK2C>].

⁶⁶ Ted Becker, *Transferability: Helping Students and Attorneys Apply What They Already Know to New Situations (Part 1)*, 98 MICH. B.J. 50–52 (Jan. 2019).

new problems that do not superficially involve their perceived strengths.

Conclusion

The Learning Styles Myth is complicated and warrants greater discussion. To facilitate that discussion, this Essay offers two conclusions.

First, the Myth highlights the value of mixing experience and science. On the one hand, insights from teacher anecdotes and observations come from thousands of invaluable, tiny, uncontrolled, imprecise experiments in human behavior that scientists can never replicate in a lab. At the same time, research-based evidence from other fields like psychology and education can help us understand how the learning process works, which can at times be very different from the way we think it works.

Second, our prime directive should be that all law students believe they can learn any material in any form in any environment. When a student believes this conclusion, we should not undermine it. When a student does not believe this conclusion, we should convince them. But the path to this conclusion may be indirect, winding, and long.