



Review of Learning Styles Theory: Implications for Adult Educators

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Summary

- *Learning styles theory is a dominant idea that has shaped both adult education curriculum and instruction.*
- *No empirical evidence supports learning styles theory and its relationship to improved student learning.*
- *Adult educators should still be pedagogically sensitive to individual learner differences and aptitudes, and design courses on basis of instructional goals, learning environment, and background knowledge of learners rather than using pre-determined learning styles.*

Introduction

The notion of “learning styles” is so well-known throughout PreK-20 education that numerous educational materials, workshops, and guidebooks have been published on the topic. For example, it is now common for postsecondary students to take some type of learning styles assessment on the first day of a new course and for instructors to tailor their teaching to the learning style preference of their students.

The influence of learning styles theory also extends to continuing and adult education, where the idea has strongly shaped how educators approach instructional design and classroom teaching. In this research brief, we review the literature on learning styles and critically examine whether practitioners in continuing and adult education should be exploring learning styles theory in their course design and classroom instruction. We find that although instructors should be attuned to learner’s individual capabilities and prior knowledge, they should not base instructional design on fixed learning styles.

What are learning styles?

In brief, “learning styles” is the idea that each individual learner has a preferred mode of instruction or study that best facilitates his or her learning. Examples of common “learning styles” are visual, kinesthetic, or auditory. This means

that a “visual” learner learns best by watching, a “kinesthetic” learner by doing, and an “auditory” learner by listening. Proponents of learning styles advocate assessing learners before proceeding with instruction in order to find their preferred learning style and to prevent mismatches between learning and teaching styles.

What are the different ways to think about learning styles?

In the past few decades, numerous models and approaches to learning styles have been developed. Coffield, Moseley, Hall, & Ecclestone (2004) provide an in-depth analysis of the most influential models of learning styles, identifying 71 individual approaches that they classify within five “families” (see Figure 1).

These families range from fixed, constitutionally based characteristics (e.g. visual, auditory, kinesthetic, and tactile learning) to more temporary factors and implications (e.g. environment, motivation). In the middle of this range, they characterize other “families” of learning style theories as those that feature a cognitive structure, stable personality type, or flexibly stable learning preferences. Cognitive learning styles refer to a person’s deeply embedded cognitive structures, such as being someone who can separate details from context versus someone who cannot. Stable personality type refers to various personality features a person has (e.g. artistic, logical, outgoing). Flexibly stable learning preference refers primarily to learning style theories derived from Kolb’s (1999) Learning Style Inventory (LSI). The LSI identifies four learning modes that form a learning cycle from experience to observation to conceptualization to experimentation and then back to experience, that learners ideally engage in based on the situational context and demands.



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¹See Felder & Spurlin, 2005; Keefe, 1987

Despite the numerous ways learning styles have been conceptualized, proponents maintain that optimal learning occurs when the instruction matches the learning style. They also warn that mismatches may result in a bored, unproductive classroom filled with disengaged students and a frustrated instructor.

Learning styles and preferences are largely constitutionally based including the four modalities: VAKT ² .	Learning styles reflect deep-seated features of the cognitive structure , including 'patterns of ability'.	Learning styles are one component of a relatively stable personality type .	Learning styles are flexibly stable learning preferences .	Move on from learning styles to learning approaches, strategies, orientations and conceptions of learning .
Dunn and Dunn³ Gregorc Bartlett Betts Gordon Marks Paivio Richardson Sheehan Torrance	Riding Broverman Cooper Gardner <i>et al.</i> Guilford Holzman and Klein Hudson Hunt Kagan Kogan Messick Pettigrew Witkin	Apter Jackson Myers-Briggs Epstein and Meier Harrison-Branson Miller	Allinson and Hayes Herrmann Honey and Mumford Kolb Felder and Silverman Hermanussen, Wierstra, de Jong and Thijssen Kaufmann Kirton McCarthy	Entwistle Sternberg Vermunt Biggs Conti and Kolody Grasha-Riechmann Hill Marton and Säljö McKenney and Keen Pask Pintrich, Smith, Gracia and McKeachie Schmeck Weinstein, Zimmerman and Palmer Whetton and Cameron

Figure 1. Families of Learning Styles. Adapted from *Learning styles and pedagogy in post-16 learning: A systematic and critical review* (p. 9), by F. Coffield, D. Moseley, E. Hall, & K. (2004). London: Learning and Skills Research Centre.

But do learning styles really exist?

One of the theories that originally informed the idea of learning styles was that of experiential learning as advanced by Kolb. Yet critiques of this theory, and the “Learning Styles Inventory (LSI)” that Kolb advocated, have been around since the 1980s. In 1981, Hunsaker wrote, “The current evidence supporting Kolb’s LSI and experiential learning model is limited to anecdotal-type information without accompanying methodology or data. It should be noted that all supportive data is cited by Kolb and his co-workers at MIT. Other available studies, except one, that employ the LSI and/or examine the learning model consistently find disagreement with Kolb’s and his colleague’s findings” (Hunsaker, 1981, p. 150). From the 1980s onward, however, the theories of experiential learning and learning styles became rather influential in the fields of workplace training, management, and adult education.

However, psychologists began to question the idea of learning styles based on the lack of evidence used to support their existence, and have even begun arguing that contradictory evidence exists. In their widely cited review of the literature

on “learning styles”, Pashler, McDaniel, Rohrer, & Bjork (2005) found virtually no evidence to support the idea that ideal learning requires students to receive instruction in their preferred learning style. In fact, they argue “there is no adequate evidence base to justify incorporating learning-styles assessments into general educational practice” (p. 105). Alternatively, they found several studies that contradict common held beliefs about “learning styles”.

For example, Massa & Mayer, (2006) found no difference in the performance of self-proclaimed visual or verbal learners who received either visually or verbally tailored electronics lessons. Likewise, Cook, Thompson, Thomas, and Thomas (2009) testing a learning style categorization similar to Kolb’s concrete-abstract learning dimensions, found no support for the idea that learners with a “sensing learning style” have better results when instructions are presented before the problem compared to “intuitive” learners who would do better with the opposite. Also, Bjork, Dunlosky, & Kornell (2013) argue learners often do not know how “best to assess and manage” (p. 419) their own learning, which can contribute to the unjustified support of “learning styles”.

Moreover, in their extensive review, Coffield et al. (2004) conclude that research on learning styles ultimately does not offer clear implications for pedagogy because no individual learner preference definitively indicates a precise instructional design.

Despite these limitations and critiques, experiential learning and the use of the LSI continues to be utilized in management education, workplace training, and adult education to this day.

Conclusion: Should adult educators reject the idea of learning styles?

In brief, no convincing empirical evidence exists to support learning styles theory. However, that does not mean that all students learn all subjects in the same way. On the contrary, Riener & Willingham (2010) recommend differentiated instruction based on learners' readiness, prior knowledge, and motivation level. Likewise, instructors should be aware of any specific learning disabilities or challenges students may have, such as home difficulties, linguistic differences, or developmental issues. Therefore, instructors must not only take into account learner preferences but also the course goals, learning environment, learner readiness, background knowledge, and lessons from their own teaching experiences.

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Ultimately, students may have preferences over how they learn but that does not necessary mean that is the only way they can learn. Instructional design should be based on best practices, like creating engaged environments, establishing clear, reachable goals, and using assessments to inform instruction, rather than learning styles. It is also important to avoid overly rigid curriculum design in order to allow students space for personalized learning pursuits. Finally, students themselves must also take responsibility by managing their own learning. In order to do this, Bjork et al. (2013) recommend learners aim to truly understand the material they are learning (rather than just briefly retain it for an exam) through engaging in activities that foster storage and retention of new information and subsequently monitoring themselves through self-assessment.

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