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The 4 Types of Learners: What Learning Styles Can and Cannot Do in Your Classroom

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If you have taught for any length of time, you have probably taken a quiz that sorted you into a learning style, or watched your students take one. The idea is familiar and appealing. Some students seem to learn best by seeing, others by listening, others by reading and writing, and others by doing. This framework, often called the four types of learners or the VARK model, appears in workshops, lesson planning templates, and countless blog posts. It offers a simple promise: identify how a student learns best and teach to that style so that you can watch your student's achievements rise.

The framework is worth understanding, and there is real value in knowing your students' preferences. But, the promise that applying learning methods or preferences in your instruction improves student outcomes is overstated and is worth delving into so that you understand the true impact of what implementing learning style preferences does in your classroom. Decades of research now tell us that matching your instruction to a student's preferred style does not necessarily improve academic outcomes alone. This article explains what the four types of learners are, what research actually shows, and how you can use the idea of learning preferences in a way that supports your students without overpromising results.



The Four Types of Learners

Learning styles describe the way a student prefers to take in and work with new information. The most common version is the VARK model, which describes how learning styles can be organized into four categories. In discussion of this model, most students do not fall neatly into a single category, so it helps to think of these as tendencies rather than fixed labels.

V • Visual

Based on what the model says, visual learners tend to prefer images, maps, charts, diagrams, and graphic organizers. They may draw a picture to explain an idea, use color to organize their notes, or watch a demonstration to understand a process.

A • Auditory

The model describes auditory learners as those who tend to prefer listening and speaking. They may benefit from class discussion, repetition, mnemonic devices, reading aloud, or explaining their thinking to a partner.

R • Reading and writing

Next, the model describes reading and writing learners and how they tend to prefer text. They take in information through written words and show what they know through writing. They often take detailed notes, read independently, and work well with written directions.

K • Kinesthetic

Finally, the model describes kinesthetic learners as tending to prefer hands-on, tactile activities and whole-body movement. They may learn through experiments, manipulatives, role play, building models, and other active tasks.

You will also see models that add additional categories such as global learners, who look for the big picture and the connections between concepts, and analytic learners, who prefer a step-by-step approach. The exact number of styles varies by source, with most groups describing somewhere between four and eight styles. The basic idea is the same across all models, though: students are described as having specific preferences or learning styles for the different ways they can engage with the content. Unfortunately, this model is often mistaken for research-based work, and many teachers assume that using these learning styles with fidelity in the classroom will improve student academic outcomes simply by matching learning styles to content. The research does not support this, but we will discuss in more detail what is supported and how you can use learning styles to support your classroom in a variety of ways, without relying on them in the hope that they will automatically translate to increased academic outcomes.

Where the Idea Comes from and Why It Is So Popular

The learning styles idea reflects something you observe every day, because students really do respond differently to different activities. This idea also supports [a belief that most teachers hold](#): that every student is an individual who deserves instruction suited to who they are. And those reasons are absolutely fine to introduce into your classroom and also completely true! However, using it as a method to improve academic student performance is not research-based (even if there are other benefits to implementing this into your classroom), so let's explore a few studies a bit more so you can understand why.

First, [a systematic review by Newton and Salvi \(2020\)](#) examined 37 studies covering more than 15,000 educators across 18 countries and found that about 89 percent of educators believed that students learn better (and consequently improve their academic progress) when they receive information in their

preferred learning style. So, this persistent belief in learning styles is held across the world and across classrooms. However, when actually put to the test in research, the beliefs that most educators hold don't necessarily align with the reality of student progress.

89%

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37

studies

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18

countries

Newton and Salvi (2020), systematic review

In one important study published in *Psychological Science in the Public Interest*, [Pashler, McDaniel, Rohrer, and Bjork \(2008\)](#) set out to find studies that tested these beliefs. In the studies they evaluated, they wanted to find a general setup that would adequately test the theory. They determined the correct setup to study this would be as follows: First sort learners by style, then randomly assign students within each style group to different teaching methods, then give everyone the exact same assessment, and then finally check whether each group learned best from the style of teaching that matched their preferred learning style. However, the authors found that studies meeting this standard did not really exist, or there were very few. The few studies that did exist and followed that setup did not show positive results. In other words, they found “no adequate evidence base to justify incorporating learning-styles assessments into general educational practice.” Now, could positive results actually exist in some classrooms? Maybe, or maybe not. There simply isn't current educational research to support the idea that teaching matched to learning style improves academic performance.

THE SETUP THAT WOULD ADEQUATELY TEST THE THEORY

1 Sort learners by style

2 Randomly assign each style group to different teaching methods

3 Give everyone the exact same assessment

4 Check whether each group learned best from matched teaching

Of course, when students are taught through their preferred modality, they tend to enjoy the experience and report feeling that they learned more, but their performance on assessments does not necessarily improve compared to students taught through other methods, and there really isn't much out there that supports it currently in the research literature. For example, [in one study](#), students tended to feel more confident that they would remember material presented in their preferred format (pictures or words), but their preference did not predict what they actually recalled, and students in every group remembered pictures better than words (Knoll et al., 2017).

Another point to consider is an idea that has been well studied in the research literature. [The best way to teach a particular concept usually depends on the content itself rather than on the student](#). For example, as the cognitive scientist Daniel Willingham (2009) has explained, memory is the residue of thought, which means that students remember what they think about. Some content is best represented visually and some

verbally, and the content itself is more likely than a student's learning style to tell you the best way to teach an idea. A map is going to be easier to understand as an image than as a spoken description, even if a student feels he is more of an auditory learner than a visual learner. In contrast, the sound of a word in a new language is easier to learn by listening than by reading it since it helps the student understand how the word is actually spoken.

"Memory is the residue of thought."

Daniel Willingham (2009)

Preference Is Real

None of this means that learning preferences are meaningless and you should just kick the entire idea to the curb. Preferences in your students are real, and it is useful information about your students, especially in how to reach and engage them. You just don't want to look at a preference as a sure-fire way to improve student learning and mastery of the actual concepts you are teaching, because there just simply isn't research to support that.

Offering students choice in how they engage with a task can increase motivation and a sense of ownership. Awareness of preferences can improve classroom management, because students who have some say in their work are more likely to stay engaged. Attention to preferences can also strengthen relationships, since it signals to students that you see them as individuals.

What learning preferences can do

- Increase motivation and a sense of ownership
- Keep students engaged and support classroom management
- Strengthen relationships

What they cannot do on their own

- Improve test scores by matching instruction to a style
- Predict what students actually recall
- Offer a shortcut to higher achievement

What Actually Improves Student Outcomes

If matching instruction to learning styles is not the sure-fire way to improve student academic performance and mastery of concepts, then what is? Let's take a look at a few ideas that are more well-studied in the academic literature.

Differentiation

Differentiation is one of the most studied teaching practices. Rather than sorting students by a fixed style, differentiation adjusts instruction based on where students are and what they need. Building on the work of Carol Ann Tomlinson and colleagues (2003), teachers can differentiate [the content students learn, the process they use to learn it, and the product they create](#) to show their understanding. More recent reviews also support differentiation. Smale-Jacobse and colleagues (2019) examined differentiated instruction in

secondary classrooms, and Pozas and colleagues (2021) found that students who rated their teachers' differentiated instruction more highly also reported greater school well-being, social inclusion, and academic self-concept. The key is that all students work toward the same essential standards, with the level of support and challenge adjusted to fit them.

Readiness and Interest

Assessing readiness and interest will often give you better information than just a learning style preference. A student's readiness for a specific concept can change from topic to topic, and knowing what a student already understands lets you fill gaps and extend learning where appropriate. Student interests give you a way to connect content to what already captivates a learner, which supports engagement and ownership.

Flexible Grouping

[Flexible grouping](#) is another well-supported practice. When you group students in varied ways, sometimes by readiness, sometimes by interest, and sometimes at random, you give them the chance to learn from one another and to work with every classmate over time. Research on visibly random grouping by Liljedahl (2014) found that this approach improves collaboration and reduces the social barriers that form when groups always stay fixed. Grouping students the same way every time can be risky and may not be the best way to teach all students, because students who are always placed in a low group may begin to perform at that level. Of course, sometimes grouping students by ability is important, especially if you are planning to differentiate instruction and need to re-teach concepts to a group of students, for example. But varying your grouping and constantly being mindful of your grouping strategies is important so that learning doesn't stay stagnant.

Active Engagement

Active engagement is also critical for students to learn. Students learn more when they think hard about content, and active tasks require more thinking than passive ones. Whether a task is visual, auditory, or hands-on is going to matter a lot less at the end of the day than whether it asks students to process, apply, and explain what they are learning. [Varying your activities](#), with a focus on active learning over passive learning, keeps students engaged and gives every student repeated practice at high levels.

What Memory Research Tells Us About How Every Student Learns

Psychologists have spent decades building memory theories that explain how the brain takes in new information, holds onto it, and pulls it back when a student needs it. Several of these theories explain how you can help your students learn and remember more, and you will see it is completely outside of the idea that instruction must match a preferred learning style. Let's take a look at a few of these theories now.

Dual Coding Theory

[The Dual Coding Theory](#), described by Allan Paivio (1986), states that learning is increased when information is coded into the brain in two ways, visually and verbally, which helps develop multiple cues for later recall. Consider a middle school history teacher teaching the Bill of Rights. As he lectures, his students complete a graphic organizer with simple icons for each amendment, and after each amendment is discussed, they stand and imitate a hand gesture that corresponds with it.

Levels of Processing Theory

The Levels of Processing Theory (Craik & Lockhart, 1972) holds that the deeper the level of processing, the more likely we are to be able to recall the information later. A related finding, the generation effect, shows that learners have better long-term recall of information when they generate it themselves, as opposed to just reading it or hearing it (Slamecka & Graf, 1978). For example, after a lab with simple battery circuits, students might work in pairs to write their own definitions of closed, open, and short circuits based on what they observed.

The Testing and Spacing Effects

The Testing Effect Theory explains how learning increases when students are repeatedly tested on content, and the Spacing Effect Theory adds that we recall information more efficiently when our practice is spaced out over a longer period of time. In your classroom, this can be as simple as a daily warm-up of three or four [low-stakes questions](#) that mix content from yesterday, last week, and the beginning of the year.

You can read more in our articles on [The Levels of Processing Theory](#) and [The Testing Effect Theory](#), and you can explore all twelve memory theories in our course [Applying Memory Theories in the Classroom: Teaching with Encoding, Storage & Retrieval in Mind](#).

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How to Use Learning Preferences Well in Your Classroom

You can still embrace the idea of “types of learners” in your class by treating it more as a preference and engagement strategy while still following the research evidence and understanding that implementing learning styles alone will not improve academic performance and student learning. A few ideas below help you incorporate that idea of learning type in a way that still supports students and helps to improve some aspect of their educational career:

- 01 Offer choice within a shared objective.** Let students choose how they engage with a task or how they demonstrate what they learned, while holding every student to the same standard. For example, a choice between a written summary, a labeled diagram, or a short recorded explanation gives students ownership without lowering your expectations of them. These choices can allow students to select their preferred method of learning and showcasing knowledge while still meeting your lesson objective.
- 02 Match the activity to the content first.** When you plan a lesson, start with the concept and the objective, then choose the format that fits the content best. Use your knowledge of your students to add a variety of instructional methods, but let the material itself guide your primary mode of instruction and your decision on how much to vary different learning activities.
- 03 Build memory strategies into every lesson.** Pair verbal explanations with simple visuals such as timelines, flowcharts, or labeled diagrams for all of your students, ask students to put new ideas into their own words, and revisit key content through short retrieval warm-ups spread over days and then weeks.
- 04 Track the variety of your activities.** Over the course of a unit, notice whether you are relying on a narrow band of activity types. A simple activity tracker can help you see your patterns and plan a wider range of visual, auditory, verbal, and hands-on tasks, along with a greater balance of active learning over passive work.
- 05 Use flexible grouping on a regular basis.** Change your groupings based on your goals for each lesson, and include random groupings at times so students work with everyone. Avoid only utilizing fixed ability groups that stay the same across several lessons.
- 06 Avoid labeling students and instead adopt a growth mindset and help your students see that they can grow and change over time.** Resist the urge to tell a student that they are a visual learner or that they are not a math person. Labels can narrow how students see themselves and how they approach new work, focusing on a fixed mindset that can stifle their progress. Instead, talk to them about their learning preferences as starting points, but make it clear that every student can grow across every mode of learning and in different ways.

ACTIVITY TRACKER

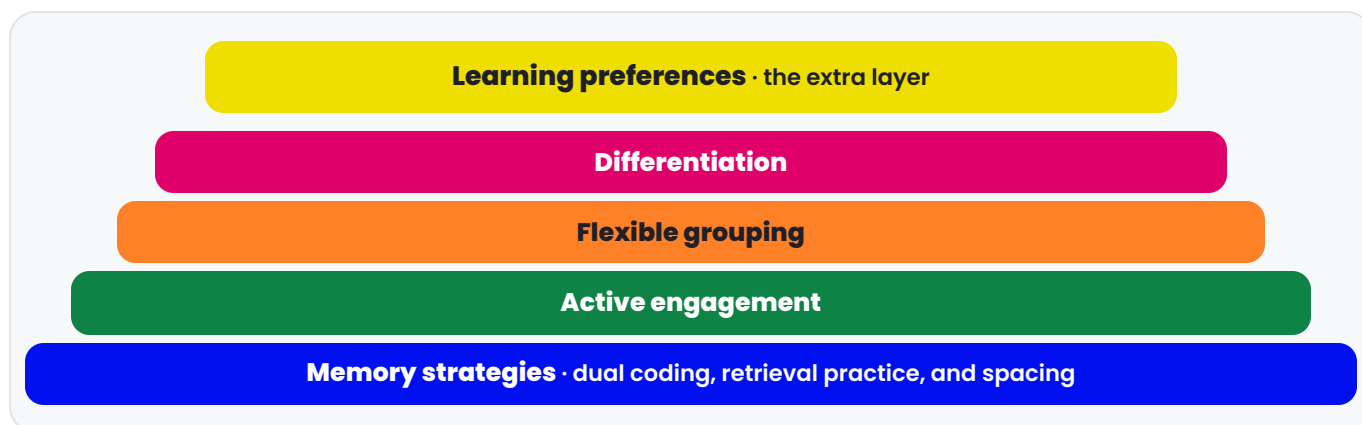
Unit: _____

MODE	ACTIVE (TALLY)	PASSIVE (TALLY)	TOTAL
Visual			
Auditory			
Verbal			
Hands-on			
Total			

Interactive version: modelteaching.com/education-articles/teaching-strategies/4-types-of-learning-styles

Supporting Instruction, Not Replacing It

The four types of learners offer a helpful vocabulary for talking about how your students prefer to engage with content. What they do not offer is a shortcut to higher achievement. However, when you instead treat learning styles as preferences that inform choice, engagement, and relationships, and when you build your instruction on well-supported practices like differentiation, flexible grouping, active engagement, and memory strategies like dual coding, retrieval practice, and spacing, you give every student access to the full range of different ways to learn. Learning preferences can support your teaching by providing an extra layer on top of the specific instruction that you design around your students to purposefully move them forward in their understanding to improve student achievement.



Frequently Asked Questions

What are the four types of learners?

The four types of learners come from the VARK model: visual, auditory, reading and writing, and kinesthetic. Each type describes how a student prefers to take in and work with new information, such as through images, listening, text, or hands-on activity. Most students show a mix of preferences, so the types work best as tendencies rather than fixed labels.

Are learning styles real?

Learning preferences are real. Students do enjoy some activities more than others and can usually tell you how they like to learn. What research does not support is the claim that teaching to a student's preferred style helps that student learn more.

Does teaching to a student's learning style improve test scores?

Current research does not show that it does. Students often feel more confident when material matches their preferred format, but that confidence does not translate into better recall.

Should I stop asking students about their learning preferences?

No. Knowing your students' preferences is still useful. You can use that information to offer choices, increase engagement, and build relationships. The key is to treat preferences as one piece of what you know about a student, but to plan your primary instruction around the content and your learning objective.

What is the difference between dual coding and teaching to visual learners?

Teaching to visual learners means giving visuals mainly to students who prefer them. Dual coding means pairing words with meaningful visuals for every student, so that each student has two ways to encode and later recall the same information. Research supports dual coding as a strategy for all learners, regardless of their stated preference.

How can I talk about learning preferences without labeling students?

Describe preferences as starting points rather than limits. Instead of telling a student "you are a visual learner," you might say "you seem to like using diagrams, so let's also try explaining this out loud." This approach keeps the conversation focused on growth and encourages students to build skills across every mode of learning.

Further Reading

RELATED MODEL TEACHING ARTICLES

- [Differentiation in the Classroom: Content, Process, or Product?](#)
- ["Where's My Partner?" An Overview of Grouping Strategies for the Classroom](#)
- [Instructional Strategies and Teaching Strategies in Your Classroom](#)
- [The Levels of Processing Theory](#)
- [The Testing Effect Theory: Supporting Your Students' Memories and Learning](#)

FROM OTHER EDUCATORS AND RESEARCHERS

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