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There's actually a few different versions, actually many different versions of

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learning styles,

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but probably the most common ones, the one that you've heard of is that some of us are

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auditory learners where we learn best by listening to things,

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and that some others are more visual learners where we learn best by seeing

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things,

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and that some of us might be more tactile or kinesthetic learners where we

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learn best by actually doing things or engaging in physical activities.

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How many of you have heard of that before? Well, the good news and bad news:

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bad news is if you believe in learning styles, you're actually wrong,

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and I'll explain that in just a minute, but the good news is, is that it's not

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entirely your fault.

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This belief in learning styles is incredibly pervasive; it's so common that

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few people

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ever think to even question it, right? It sounds so logical, it

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sounds so real, but when put to the test, we found that learning styles don't exist.

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And again are tons of people that believe this. When we survey, for example

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students and teachers, we find that something like ninety percent of them

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or

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over ninety percent of people believe that they have a learning style,

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and teachers today, many teachers, are still told that part of their job

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in order to be effective teachers is to figure out what their students' learning

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styles are

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and then to accommodate them for the classroom. There even a host of companies

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and organizations out there that support learning styles

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and who for a fee will train you on how to maximize your potential

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or that of your students, right, by addressing learning styles and learning

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what yours are.

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But again, the key is when put to the test

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these, actually, these learning styles don't exist and it doesn't make a difference.

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Now I will say that when we survey people, many people say they have

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preferences,

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so if I asked you, how would you like to learn something? Or how would you like to

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study?

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Many you might say things like I prefer to see it, or I'd prefer to hear it, or I

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prefer to actually do it,

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so that's true, but the key is that those preferences don't actually enhance

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your learning

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when we test them in experimental conditions. And, this, there are many

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different ways to test this, but the basic design is

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this: we bring in a bunch a different people who have supposedly different

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learning styles.

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We teach them in a variety of ways, right, and then we see if teaching them in one way

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somehow was better for them or more effective than others.

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So for example, let's say I had a list of words that I wanted you to memorize,

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right, in one group I might show you that list of words. I would present that list

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of words to you.

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Or, in another group, similarly, I might actually show you images of those words.

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In yet another group or another condition, I might just let you listen to

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those words and hear them so you wouldn't actually see anything, but you would

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just hear someone saying

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dog, hose, coat, et cetera. Now if learning styles existed,

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if it was true, we would expect that visual learners or so-called visual

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learners

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would be able to recall more words when they saw them, right, so either when

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they saw the list or when they saw the actual images,

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and we would expect that so-called auditory learners would be able to

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recall more words

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when they heard them, right? But again, the finding is

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learning is actually the same; the number of words that you recall is

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exactly the same

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regardless of how the material is presented to you. Now I know that's just one

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example

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of one particular study, but I'm asking you to trust me that this has been

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replicated in many different contexts

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with many different people of all different ages and tested in slightly

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different ways

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with exactly the same results. In fact, there have been several meta-analysis

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papers

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where they've looked at all the research on this topic for forty years,

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and all and of them have concluded the same thing that there's still no evidence

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that matching teaching styles

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to supposed learning styles or students' preferences actually makes a

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difference.

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But I would encourage you to look up something this research on your own,

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in particular, these review articles. So then how is that possible?

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I'm sure some of you are wondering, how does that even make sense?

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Right? Because it sounds so good, and there's a lot of different research on learning

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and memory to

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explain this, but one of the main ideas is that most of what we learn in the

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classroom

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and most of what teachers want us to know in particular is stored in terms of

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meaning,

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and it's not tied to one particular sense or one particular sensory mode.

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Now it's also true, just like people have preferences, it's also true that some of you

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might have better visual memories,

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or better auditory memories, or auditory processing skills

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compared to other people, and that might be advantageous for certain types of

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tasks.

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So, for example if I wanted you remember what was the color of the coat

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on that last slide, or how many windows were on that house

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on the last slide? Then having a really good visual memory would help with that.

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Likewise, if I had read you the list of words, and I said were they read with a high voice

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or a low voice,

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or which words were read by a woman and which ones were read by a man?

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Then having really good, a really good auditory memory, would help with that.

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But those aren't typically the kinds of questions that teachers are

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asking you to remember or the things that teachers want you to learn in the classroom.

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Mostly what you learn in the classroom is much more conceptual

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or meaning based. It's not just what something looks like

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or what something sounds like, and by the way this finding or this whole idea

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also helps to explain why simple rehearsal strategies, like

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rereading your notes or just rewriting your notes, even though they're very

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commonly used strategies,

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they tend to not be very effective because be re-reading your notes or

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re-writing your notes

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doesn't necessarily help you understand the material.

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In order to retain information, right, we have to

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organize it in a way that's meaningful, right? We have to make connections to it,

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connecting it to our experiences or coming up with our own examples

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or thinking of how we're learning something in one class how that relates

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to what else we know.

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That's what helps us remember it. Now again, there's a lot of research to support

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this idea that most of what we learn is stored in terms of meaning

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and not in terms of visual images or auditory sounds, but some of the best,

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most relevant research comes from these classic studies that were done in the

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seventies.

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Now, Chase and Simon, they were interested in chess players' abilities to recall

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pictures of chess board games in progress. So what they would do is they would show

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players an

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image of a game in progress for a short time, typically only five seconds

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or so,

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and then it would disappear, and then they would ask the players to recall

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where were all the pictures? Where were all the pieces in that

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picture? And what they found was a big difference between novice players or

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beginner players and

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experts. Beginner players, when asked to recall where the pieces were,

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they can only remember about four pieces, right. Experts on the other hand could

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actually identify almost all of them,

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over twenty of them could they correctly identify

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in the next game board when asked to recall these. Now again they were

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interested in knowing,

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you know, why is this different? Why do we see this difference between

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beginners

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and novices, and it wasn't because like you might be thinking that the experts had

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better visual memories than the beginners. It was because the experts had

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more experience playing chess

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and more knowledge. In other words, this game board was more meaningful to them

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right, they could see the strategy involved. They could imagine what was

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happening and why the players had their pieces

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positioned the way they did. And to further support this idea, they did a

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follow-up study,

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and the follow-up study, they showed chess players pictures of

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randomly arranged chess boards, and that's the picture here. Now to you or I,

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or to a beginner chess player, these might look basically the same.

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I mean, yeah, the pieces are in different places, but for the most part they might

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be equally difficult to

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to remember, right? To an expert, though, we found big differences when presented

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with a randomly configured board.

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Once it was random, experts no longer had an advantage

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in remembering pieces because it wasn't meaningful to them.

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But because there's no meaningful arrangement in the second piece,

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right, they lost that advantage, which again is just further evidence that we

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store information in terms of meaning,

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and not according to a sensory mode. And this basic finding by the way has been

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extended to other contexts, everything from chess to basketball to computer

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programming

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and to dance. We store information in terms of meaning and not limited to

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particular sensory modes.

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So that's the first reason. Another reason why this learning styles theory doesn't

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pan out

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is that, you know, the best way to teach something or to learn something

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really depends on what it is you want to learn, right, or

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depends on the content itself. Now if I wanted you, for example,

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to know what a bunch a different song birds looked like, the best way to teach

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you that is to let you look at pictures of those songbirds or to let you see

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them in real life, right, but know that that's true for everybody.

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That's not true just because you're a visual learner, that's because

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looking at them is what I'm asking you to do is to remember what they look like.

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On the other hand, if I wanted you to remember what they sounded like

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or to be able to distinguish between different songs of different song

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birds,

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then letting you hear them would be the best way.

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But again that applies to everybody, just like if I wanted you to know what different

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flowers smell like.

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The best way to teach you that is going to be it to let you experience those

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flowers by smelling them,

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right, but that doesn't mean you're an olfactory learner or that you learn

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everything better through smelling.

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I mean take a minute to imagine what that would look like in a math class

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or in an anatomy class, right, or a physics class,

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right, and as absurd as that sounds, it's really important to remember that the

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same problems,

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the same criticisms, apply whether we're talking about so-called



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olfactory learners or whether we're talking about auditory learners, or

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visual learners,

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or even kinesthetic learners, right, the last three might see more palatable or

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more reasonable,

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but the same issues apply. It really depends on what I'm

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asking you to learn. The best way to teach it. But that also brings me to

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another point, and that's this idea that many things can be taught using multiple

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senses,

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so it's not just limited to one, for example. So, stay I wanted you to learn the

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game of football,

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probably the best way to teach you football's going get you out to be, to

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get you out there and play football, right, to actually practice and having that

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physical experience playing. But you'd also probably benefit from being able to

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watch a football game

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or being able to look at schematics or drawings of the different

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formations and the different positions,

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just like you'd probably also benefit from hearing coaching or hearing feedback as

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you're playing,

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right? You're getting the kinesthetic experience, the visual, and the auditory.

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Similarly, if a music teacher wanted you to know the different parts of a

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symphony orchestra,

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they, yeah, going to an orchestra, and listening to one would be beneficial,

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but it would also add to the experience if you had the capability to touch the

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instruments or maybe to learn how to play them,

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right, or to actually watch one live. Again, it's not that different modes make it

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meaningful to different people based on their

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learning style; it's not like, oh, the visual learners are only going to learn by

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seeing it.

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It's because incorporating multiple sensory experiences into one

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or into one lesson makes it more meaningful.

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So then you might be wondering, why did this myth persist? And there's a few

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different explanations, and the first one is quite simply

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that everybody believes it, right. It's so common that you never even think to

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question it.

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How could so many people be wrong? If so many people believe it, how is it

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possible that it's wrong?

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But as you know, just because something is commonly believed

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doesn't necessarily make it true. Remember, just as an example, at one point

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we used to think that the Earth was the center of the universe,

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until scientists like Copernicus and Galileo proved us otherwise.

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Likewise, there was a time in which some people actually believed or were

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worried that polio might be caused by ice cream,

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which we now know is nonsense and, unfortunately, even today,

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one unfortunate myth that still persists is this idea that vaccines cause autism,

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despite the lack of any scientific evidence.

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Just because a lot of people believe it doesn't make it true,

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and that might seem really obvious to you, but again the key is, the key idea is,

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that when something is so pervasive,

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it doesn't even occur to people to challenge it. We need to be willing

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to critically reflect on beliefs,

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even if they're commonly believed. Another reason why this persists is

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quite frankly,

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the idea of learning styles is sexy. It sounds good, it

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feels good. Saying people have different learning styles

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is another way of acknowledging that people are different and differences are

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important,

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especially when it comes to the classroom. But me saying that

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learning styles

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don't exist, I'm not saying people are the same. People do differ in

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many important ways.

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Learning styles just isn't one of them, and just because some ideas sound really

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good,

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just because we really want something to be true doesn't make it so.

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We have to remember that even when we're talking about something as

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appealing as

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Santa Claus, unicorns, bigfoot, or learning styles.

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And last but not least, another reason why this belief persists

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is something called confirmation bias, and this is this natural tendency that

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we have as humans

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to want to be right. People don't like to be right,

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so when, or don't like to be wrong I should say, so when people have this

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belief,

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or any belief, we tend to look for information that fits our

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beliefs,

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and we ignore information that doesn't fit our beliefs. We don't really very

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frequently try to prove ourselves wrong,

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right, more often than not, we try to prove ourselves right. We look for

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evidence to support whatever it is that we think,

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and sometimes, this is deliberate, right, sometimes this bias is very deliberate, so you all

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know that person

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who deliberately closes their eyes or plugs their ears and says lalala, I'm not

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listening and I don't want to hear that and turns their back.

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But more often than not, this is unintentional,

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this is sub-conscious. We don't even realize that we're doing it.

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How many of you, for example, have ever been thinking of someone

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only to have them call or text you? Or how many do you have experience deja vu

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or had a dream only to have it come true, right? And you start to think, whoa,

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I've got something going on here, right, right, some extrasensory perception,

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telepathic powers, right? Again, I'm sorry to say you don't,

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right? That's been studied frequently, too, and there's no evidence

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to suggest that we have these tele-communicative

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powers to talk to each other, right. But the problem is it that we notice every

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time it happens.

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We notice every time we're thinking of someone and they call us

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because it's

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a cool coincidence, right, it's kind of exciting. We notice when we have that

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moment of déjà vu.

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We don't notice all the times that we're thinking of someone and they don't call

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us.

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Or we don't really think about all the dreams that we've had that don't

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come true.

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It's just like that other common belief that full moons are somehow associated

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with crazy behavior or increases in emergency room visits.

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This has also been something that people have scientifically studied,

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and again, despite common belief, there's no significant correlation there

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between full moons and emergency room visits.

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So now you might be wondering, why does it matter?

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Who cares? So, yeah, learning styles don't exist, hopefully you're buying that by

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now.

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And I see why it's still so common, though, but who cares? Why not

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believe in learning styles?

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And I would argue there's at least two important reasons why we need to stop

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believing this and stop spreading this idea

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that people have learning styles. The first one is that we're wasting valuable

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time

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and resources. Valuable educational resources. Teachers already have a

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momentous

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task of accommodating students from all different backgrounds,

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of different ability levels, different disabilities in their classroom,

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different interests and motivations. That's not easy.

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The whole fact that learning styles doesn't matter to some extent should be

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a relief

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because it's one less thing that teachers have to worry about. But at the very least,

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we can't afford to be wasting our time and resources

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trying to promote learning styles when there's no evidence that it

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actually helps learning, especially when there are research supported

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strategies,

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things that we know we can do that actually do impact learning.

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So that's the first reason. The second reason is this whole idea that labeling

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yourself

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as a learner, or labeling a student as a learner can not only be misleading, but it

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can be dangerous.

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If I as the teacher think that you have a particular learning style or

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that you only learn in one way, that might prevent me from trying

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other strategies that could otherwise help you learn the information better.

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Likewise, if you as the student believe that you have a particular learning

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style

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that could cause you to shut down or lose interest when a teacher

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isn't teaching in a way that's consistent with your preferred style,

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and that might actually perpetuate your failure, but it's not because you

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couldn't learn that way.

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It's because you gave up, and you stop trying.

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This whole idea that learning styles don't exist in many ways should be further

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good news because it means that

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all of us are capable of learning in a variety of ways.

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We are not as limited as sometimes we think we are. So in conclusion,

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when I teach about this topic in my classes and even when I talk to other

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professionals and colleagues, the

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first reaction I get is usually a little bit of surprise. Surprise that

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something that's so common and so ubiquitous

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isn't actually true, but that's often times followed by a little bit of

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defensiveness.

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I am sure there are some of you out there right now thinking, okay,

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I hear what she's saying. I don't really care, though. I know how I learn.

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I know that I still have a learning style. People don't like to be wrong.

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And belief change is really hard, especially when it's a belief that

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you've held

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for a really long time or one that's central to your identity.

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But again, it's really important that we're willing to let our guard down

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sometimes

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and to challenge our beliefs and to truly consider other perspectives or

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different ideas.

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How often do we get defensive when we hear information or hear ideas that we

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don't like to hear

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or that go against our beliefs? How often do we surround ourselves

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intentionally with likeminded people just so we don't have to face

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different perspectives?

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And in a day and age when information is more readily accessible than ever before,

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how often do our Google searches take us to “show me I’m right.com”

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rather than unbiased evidence? Thank you.