

Day 17 - Dual Coding

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All right. Technique number five in active learning, dual coding.

Now the principle dual coding states that learning and memory are more effective. When information is presented in multiple modes. Such as visually and verbally showing and telling is better than either perceptual or verbal modes alone. As principal reflects the fact that our brains have multiple different memory stores and we learn information better when it can be entered into more than one area of storage.

So essentially this means learning things with more than one sense at a time. So learning something visually and auditory. So that a story is easier in our brain.

Now, before we jump into the science of why this is so effective, let me remind you that this is not learning styles. When we discuss verbal and visual material. It does sound like we could be referring to learning styles. However, it's important to remember that a great deal of research has shown that assessing your learning style and then matching your study to that style is not very useful and it doesn't improve learning.

So regardless of any learning style that you may or may not possess or think that.

Matching the specific way you are studying to the style will not actually improve your learning.

He may have a preference for verbal materials or visual materials, but that does not mean that you learn better with those with just those types of materials. Instead, people learn better when they combine visual materials, like a picture or a diagram with verbal materials, like words from.

Dual coding refers to the idea that we create separate memory traces for pictures and words.

So let's give it a quick example of this. If you were learning about the primate mandrills. If I were to tell you that they have blue, red, and yellow coloring on their faces, and also give you a picture of a mandrill, showing that the blue, red, and yellow coloring on there.

You would get two opportunities to store this in your memory. First, you heard the auditory version of me describing what the mandrills coloring is. And then you were also exposed to an image of its meaning.

This creates an additional mental pathway to store the information, helping you to remember.

And this really works as an effective study method in one study, students who saw images while learning concepts perform better on memory and problem solving tasks than those who did not see the.

Now the reason this is so effective is because when you're presented something both verbally. The brain stores this in multiple representations in the memory because verbal and visual is stored in different parts of the brain.

Now, this gives you multiple shots at later, digging this information out of storage. When you're trying to remember it,

furthermore, if you're only given a name or a verbal description, Your memory will be vastly improved. If you can visualize by forming a mental image of the concept, not only will you create a second type of representation, in addition to the verbal material itself. But the mere effort of visualizing the described object or seen on hands is subsequent memory.

So what are the results for you? If you start using this, as we just mentioned, it gives you more retrieval cues for you to remember something.

Additionally, our million years of evolution have made us especially adapted for learning things that are vivid, visual and experiential.

Think back to your days when you were learning as a student in school, even if you were lucky enough to study something very visual, like medicine or engineering, what percentage of your learning would you call vivid, visual and

experiential. And compare that to what percentage came from boring textbooks and rambling lectures.

Thanks for that matter about the most recent thing that you attempted to learn, even if it was outside of school, how did you be in approaching that?

And how do we apply the concept of dual coding at Plato university? More material is presented in multiple formats, including video and audio. Additionally, we have you practice what you are learning through experiential exercises, which caused you to practice in various different modality.

now? How could you start using this concept of dual coding in your learning?

Well, first off, you can start with the materials that you're learning from. Anytime you're learning a concept, try and get both something that you can hear your auditory or through reading it, and a visual representation of that.

Like over the thing that you're reading or over your notes, and then look at the visuals and compare those to the words that you're reading. Additionally, you can look at different visuals, diagrams, or charts and explain in your own words what they.

Or you could go the other way and look at an article that you're reading or concepts that you're hearing in a podcast and take that information. You're trying to learn and draw a visual to go along with the material that.

And these visualizations could be anything from an infographic to a timeline, to a cartoon strip, or a diagram of all the parts that work together

And as you start to learn these concepts, go back to active recall. And try and recall these concepts from your memory as you're drawing a diagram of them.

One exercise of this concept is creating a mind map.

Which is a visual way to lay out ideas in indicate how they are related to one another.

You can think of a mind map by the analogy to the hubs and spokes of a subway system, where there is a central station, which represents the core knowledge or.

And from that station, it connects smaller stations which represent related knowledge or skills, and then individual branches that extend to particular destinations, which represent specific knowledge or skills.

Now, mind map has a specific type of visualization known as a chart and in general charts try and organize qualitative information, making it clear what the relations are among the.

Charts are also particularly useful for illustrating how our sequence of events unfolds over time.

For instance, the familiar flow chart can be used to layout a physical process, a set of social interactions, or even events that have discreet.

So by creating such a chart, not only will it lead you to think clearly about the relationships among the entities, but also to recall both the verbal descriptions and the illustrator.

The principle of dual coding can also be drawn upon by creating diagrams, which are abstracted pictures of an object or an event

diagrams. Typically just show the most important aspects of the object, leaving out the sorts of details about the surface color. You would find in a photograph.

Now, if you're trying to understand quantitative relationships, you could also induce dual coding. By creating a graph.

And this allows you to visualize the different numbers and concepts related to those numbers.

Now, if you're reading something and you're not anywhere that you could see a diagram or a picture of what you're reading, you can induce the principle, dual coding by supplying your own picture or visualizing and creating a mental picture in your mind's eye.

Now we can take this concept of dual coding even further by introducing some of the other senses as we're learning, for example, smell and taste.

And the reason for this is because how we developed as humans. Using these different senses to understand our environment and learn about our environment,

see smell and taste, which are connected senses in the brain are among the first to develop. In fact, they predate even the mammalian brain and are hardwired into the much older, deeper reptilian.

And this is why when someone passes out smelling salts will wake them up, even when sound or touch failed to do so.

It's also why smell and taste are by far the most memorable of the senses.

For an example, just head over to the department store and see if you can find the cologne or perfume that your first love used to wear. As you smell it, you'll be instantly taken back decades to, to the thought of them, whether you like them or not. And the same idea applies to your mom's home cooking.

Anytime you smelled a special recipe, it takes you back to that.

So if you can interweave smell or taste into something that you're learning, it's going to bring you just one more link that you can have in your long-term memory. And an extreme example of this is from Jordan Belfort. When he was learning his sales pitch to sell stocks. Or anything else that he was selling? He used smell as a way to anchor both the sales script and the emotional confidence that he would have so he could deliver it.

So what he did was when he was learning his sales script and before he went to go give a pitch, he took an, a big smell of these extreme essential oils called boom, boom, and then went in and delivered the. And what this did is an anchored boat, the script and the emotional confidence that he had when delivering that pitch.

So that every time he delivered that pitch in the future, he just took a smell of that boom, boom, and was able to go into the room with confidence, deliver the pitch, and be able to sell the product.

Another way that you can induce dual coding is by evoking emotion while you're learning something. When you're leading someone to feel an emotion, when experiencing an event genuinely, they will be able to recall the event a more effective.

And the reason for this is emotion focuses attention and also causes the brain to devote extra resources to storing that information.

So you can do this by learning some material and creating a visual story by drawing out pictures and then retelling it to yourself. So you learn it in an auditory way, try and weave in different emotions with that, and really feel the story that you're creating. All of this is going to help to create more links within your brain to remember that material.

Now our activity today to practice, do a coding. if you're only listening to this on the podcast, and what I want you to do is get onto our Play-Doh university platform. It's free to join and you can go back and watch this lesson and watch the video that comes with it this way. You'll be learning both visually and auditorily the concepts about dual coding.

Now, if you're already on the platform and you watch the video and you listen Walton 10 today, you've already engaged in dual coding, but maybe you want to practice another way.

So I recommend maybe going, listening to another podcast and trying to draw out the concepts that they're talking about on a piece of paper this way, you'll encode it by listening to them, but also engaging.

And something known as the generation effect, which we'll cover much later on, but creating something new visually in order to embed it into your long-term memory.

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