If you're trying to create e-learning that's more engaging and effective,

or if you're just trying to become an instructional designer, then you should

learn more about how to apply Mayer's principles for multimedia learning.

So, Mayer's principles are research-backed and science-driven, so by applying these to your e-learning projects, it's a really safe way to make them more engaging and

Effective. I'm going to be giving a primer here, but a really good way to learn more about this and learn more about the science behind e-learning and multimedia learning is in this book right here E-learning and the Science of Instruction and this is by Clark and Mayer. So, definitely check that book out, I will link it below, but that dives into the research and the boundaries of how you can apply these principles, but for now let's take a look at each of them and talk about how you can start applying them today to your e-learning projects.

Multimedia Principle

So first up we have the multimedia principle. So this one says that you should use words and graphics instead of words alone. So the idea here is that you can use visuals to enhance the learning experience and kind of show people instead of just telling them. And Mayer makes some distinctions between graphics that are there to decorate the page or just to represent something so for example if you're talking about pumping like how to pump a bike tire, including a picture of a pump maybe not super useful but instead that Clark and Mayer say to include graphics to help people understand and organize information. So, you know like conceptual organizers, we're showing how information relates to other information or, you know, diagrams of how things actually work if that's what it is that you want people to understand, or process diagrams, we're showing step one, step two, step three, like those are the type of graphics that are most useful. So that's the multimedia principle make good use of graphics.

Contiguity Principle

Next up we have the contiguity principle. So, this says that you should align words to the graphics that they describe. So, this is aligning in time and space, so you'll see what I mean. So spatial contiguity so we want to put the labels for things very close to whatever it is that we're labeling, and I'll show an example of that right on the next screen, but there's also temporal contiguity and that says that we should explain the graphic or animation as it's occurring. So instead of, you know, showing someone an animation and then afterwards explaining what happened, that you know, or putting the explanation like far away from what we're actually showing them, even though it's right after. Instead, we should show them what's happening and as it's happening, we explain what's happening and why so we don't want to just like show someone a visual and then you know separate that from the labeling or the explanation, we want to do those things at the same time or as close as possible,

So here's an example of how this plays out spatially so this is just some random little

widget or whatever that I made so if we wanted to label these blue pieces this is a common mistake and you might see this a lot in textbooks or online or in different places but we label things with maybe different letters or different numbers and then you have to look off to the side and look at the key to see what it is that's going on so I'll look at the triangle see okay that's A and then I look over at the key and say okay that's the regulator same thing with B oh yeah where's B oh that's the modulator so that's fine but that adds cognitive load because people have to continuously go back and forth searching for what it is that we're labeling or what that thing actually is yeah so instead if you're following the contiguity principle you're just going to put

these labels closely to what it is that they are labeling so there are other applications of this again check out the book I recommended but just start keeping an eye on these things like feedback is another example rather than putting feedback on like a separate screen after someone answers the question you know just keep that feedback as close as possible to the answer and the questions so that people can quickly reference it and they want to spend time searching for it so there we have it.

Modality Principle

Next up we have the modality principle so this says that you should describe graphics with narration rather than on screen text so if we're looking at a graphic

we don't want a big text explanation it's more effective if you can narrate what's going on with that graphic especially if it's like an animation so and the idea for this is that we don't want to overload the visual channel so this is a cognitive information processing principle saying, you know, your visual channel is one thing what you're looking at and your auditory channel is another so if you're hearing that narration that's going in through your ears and if you're looking at the visual that's coming in through your eyes so it's a less cognitive load overall since those two channels are handling those two different tasks if you want someone to be paying attention to a

graphic while you're you know presenting text to them then they're kind of scanning back and forth, trying to pay attention to both and that can add to the cognitive load and make it easier to miss things. Clark and Mayer do make a distinction here saying that if the words are complex or unfamiliar or really technical or really important that you bring attention to them you may want to show the words on the screen so again if it yeah if it's this jargon that people aren't familiar with you may want to spend some time showing those words that they can you know get painted

get a mental picture of those words see how they're spelled and just retain that a little better that's the idea there but overall modality principle use narration

when you're describing graphics not on-screen text. Oh and one final point like obviously the budget, if you're doing a text-based e-learning project and you don't have access to narration you have to make do with what you've got but if you can narrate those graphics or animations even better.

Redundancy Principle

Alright the redundancy principle this one is closely related it says to explain visuals with narration or text but not both so we don't need to have this this visual graphic here with narration and with text running on the side like I see this mistake a lot I mean I've seen a lot of e-learning and some e-learning people just want to you know they'll have their visuals they'll have paragraphs and then they'll have voice over just reading the paragraph that violates this principle and makes for a not very good learning experience so the idea here is don't add text to the screen when narrating graphics again with the same exception if it's an unfamiliar word or very important phrase or concept you can highlight that but otherwise just avoid it. You can narrate the graphics just fine and again if you don't have if you're not using narration that's fine again text or narration not both that's the idea with the redundancy principle.

Coherence Principle

Alight getting into the coherence principle so if you're an experienced or somewhat experienced instructional designer this one is probably going to be pretty intuitive but adding extraneous material can hurt learning or negatively impact the learning experience so extraneous in this case it just means unnecessary or unrelated so avoid that unnecessary information and don't include any distracting graphics okay so if the visual will distract from what's going on with the learning experience don't include it not a good idea and again if you've seen my video about creating good learning objectives you'll know that you want every single part of your learning experience to be aligned with those objectives and if it's not supporting one of those objectives get rid of it so I'll link that video below and in a card in the top right of this video so check that one out but as long as you're keeping everything aligned

to your learning objectives you're probably not going to violate this coherence principle.

Personalization Principle

Alright this one right here is my favorite this is the personalization principle so the idea with this one is to use a conversational style a human voice and polite wording so the idea is that you're emulating a human to human conversation so rather than you know using textbook speak like you don't want to use this academic formal textbook language, you want to use conversational language like you're talking to your friend or something because there's a lot of research showing that people learn better when it's that conversational tone so again I recommend checking out the book but conversational tone is what you want to go for that's the main takeaway with this principle.

Embodiment Principle

And it pairs very nicely with the embodiment principle which says that you should use on-screen coaches and characters to present this information relate to the learner help the learner navigate tough situations or maybe even giving feedback so I love using these mentor characters in the learning experiences I developed where

you can turn to when you need help answering a question because it hits on this embodiment and this personalization principle really well when you have this like peer or mentor character giving you this feedback or yeah I usually use these characters to give feedback but when they're giving you this feedback in this conversational tone I think it makes a big impact and it's very different from oh no try again you got it wrong for this reason, well that's kind of personalized oh no try again but you get where I’m coming from and Clark and Mayer say that with this principle it doesn't need to be some realistic photo of a person illustrated coaches and characters work just as well so completely okay to use illustrations.

Segmenting Principle

all right the segmenting principle so this one again should be pretty familiar to instructional designers but the idea is that we're breaking one continuous lesson into bite-sized segments so that we're not overwhelming someone all at once so me applying this principle would probably be to do an individual video on each one of these principles and dive deeper into the examples rather than just giving this one 10 minute or so video where I throw it all at you at once but it is what it is so the idea is you had a chunk the information and the lessons and the content based on the learner's background knowledge and the complexity of the content so rather than

trying to fit everything into a one hour session splitting it up into you know 12 5-minute sessions or experiences may be much more effective especially if the the content is more complex.

Pretraining Principle

Alight pre-training principle this one I don't see leveraged as well as it could be but the idea is to introduce key terms and concepts before the learning experience so you might give someone a one-page handout or something where you have key terms listed maybe give a little bit of context and just orient the person to what it is that they might be learning and then when they when they show up to that learning experience whether it's online or in person they they're a bit more primed for the experience and they're not going the idea is that there won't be as much cognitive load when you're using those terms and discussing those concepts in the experience because the person has already been pre-trained on them so they can focus more on what it is that they have to actually accomplish so this is a very good one to take advantage of if you are able to do so.

Signaling Principle

all right and the signaling principle so the idea here is to guide attention with visual cues so this can be highlighting things like here's the example we underlined it we add an arrow pointing to it it can be highlighting you know zooming in on things having a glow around them but I mean it's pretty self-explanatory you want to add these little cues to direct people's attention to whatever it is that they should be paying attention to alright and that is all I have for you I hope that you enjoyed this video and if you did please go ahead and like it and drop a comment letting me know if you're watching this because you want to become an instructional designer go ahead and check out the full my full guide to becoming an instructional designer which again I will link below and thank you for watching to the end I will see you in the next video.