

Ep. 041: Concept Maps

As we continue to explore *How Learning Works*, Dr. Julie-Ann McFann joins Jim to talk about learning, leaping, and... Wile E. Coyote. Learn how concept or mind maps can help students organize their experiences for deep, critical thinking.

Podcast: <https://prodev.illinoisstate.edu/podcast/2018/ep041.shtml>

Transcript

JIM: Hi there. I'm Jim.

JULIE-ANN: And I'm Julie-Ann.

JIM: Let's Talk Teaching.

JIM: Welcome to Let's Talk Teaching, a podcast from the Center for Teaching, Learning and Technology here at Illinois State University. I'm Jim Gee. Joining me today, once again, Dr. Julie-Ann McFann. How're you doing, Julie?

JULIE-ANN: I'm doing well. Thanks for inviting me back.

JIM: I'm happy to have you, and Julie-Ann, you are our team lead for programming this? What we're going to talk about today is right in your wheelhouse?

JULIE-ANN: Absolutely. And I've already been forewarned that we don't have three days for this.

JIM: Right? Right.

JULIE-ANN: I'll try to keep it concise.

JIM: Well, and, we're gonna we're gonna talk about the basics of this topic today. And then we can always do a little bit more of a deep dive into some of the techniques that we're talking about.

JULIE-ANN: You can count on it.

JIM: Exactly. So, what are we talking about? Well, today, we're continuing the conversation that we started in a previous episode with Claire, our director, based on the principles that are outlined in the book, *How Learning Works*, which is a book, and we'll link to that on our show page today, of course, but this is a book that you use a lot.

JULIE-ANN: I love this book; I use it a lot with the... I call them the mentoring groups, there are early career professional development circle and our future Professor professional development circle. And I love this book, because it really is a nice introduction on how

to teach college if I were still teaching courses on how to teach college, this would be one of my textbooks.

JIM: It is organized into chapters that have little case studies, just little narratives at the beginning. And today we're talking about organizing student experiences, the first little narrative at the beginning of that chapter of the book. I had to laugh because we probably should print it up, print up a T-shirt or something like that. The- in fact I'm gonna pull it out here, the the title of it was, 'that didn't work out the way I anticipated.'

JULIE-ANN: Oh, always.

JIM: Which sums up my teaching; my growth as a teacher. So, and and that straight talks about someone who presented a whole bunch of information over the course of the semester, and students were complaining it was too much memorization. And didn't, it wasn't they weren't learning. They were just trying to keep up in that story. So So talk a little bit about what are some of the challenges? What are the challenges that this principle in this concept is trying to address?

JULIE-ANN: I think the main thing we need to remember is that we are the experts on our subject matter. We are the expert learners; we are the professional learners. This is why we do what we do. And we forget that our students don't have that same level of knowledge. And we just assume that they can follow along with us. And we make all these cognitive leaps that we don't understand why they're not following along with us. I kind of think of it as you know, we're the superheroes, leaping from building to building and, you know, all that kind of stuff. And we look behind us. And our students did not make that leap with us. And—

JIM: And while, and they wily coyote down to the pit. Yeah, right.

JULIE-ANN: Yeah, yes.

JIM: Exactly. When Claire and I were talking about exploring this book for our pokey little podcast here, we made the decision very early on that we wanted to do these principles in order, unlike the last set that we did that the Seven Principles for Good practice and undergraduate education, which was more of a a monograph is their likes to call it, it, we kind of jumped around different topics, you know, whatever kind of matter fancy we put off timely feedback until for as long as we could.

JULIE-ANN: Until it was no longer timely.

JIM: I—Yes, yes. Until it no longer timely, exactly. In this case, though, the chapter preceding this is talking about assessing prior knowledge. Yeah, in students. So. So this is a natural next step, once we know what they know, what they don't know, or how they're interpreting what they know. Now, we can, as you kind of said, kind of temper our expertise, and we understand what we need to go back to the basics, and whatnot. Yeah. So that so it's really easy from here on out. How do you do that?

JULIE-ANN: You know, you just stand at the front of the room and speak in a monotone voice and they'll, they'll eat up every word.

JIM: Well, no, no, no, probably not. Although, although, although we have to recognize that some students kind of may be trained to think yes, that's how learning is supposed to work. Yes. So one of the challenges we always face as as instructors on the university level is beyond just delivering the course content and helping them to learn is to help them break out of those habits that they may be bringing in.

JULIE-ANN: Correct. So, part of... part of helping students learn is to help them expand what it means to learn. And again, it goes back to that novice versus as expert learning learners, we know how to approach information from multiple directions. Whereas our students, they just have that one way of approaching it. And they don't know how to branch off from it. And they don't know how to come in from different ways. And then they do the wily coyote thing while you're leaping from building to building.

JIM: So, so what are some of the signs that we can pick up on to realize that they're not leaping along with us?

JULIE-ANN: That's a great question. Aside from Desplat, oh, yeah, no.

JIM: May be our first episode with sound effects. I might have to edit that in.

JULIE-ANN: Well, this is actually where formative assessment comes into play. And I'm sure we can link back to the podcast where we talk about formative assessment. My other thing that I just love talking about, if we do low stakes, getting feedback from them, and if they're not able to answer correctly, or answer deeply, or they play the I'm trying to read the professor's mind, or you kind of answers or, my favorite is if you ask them a question, and they all suddenly become interested in tying their shoes, and you see a roomful of the top of their heads, then you know that they're not following along with you.

JIM: Okay. Okay. So, what do you do then?

JULIE-ANN: Well, gosh, Jim. I had a whole spiel, going in there.

JIM: All right, we'll get to the spiel. Look at that spiel, I mean, we're talking about organizing experiences, and you are incredibly well, I'm looking at all your notes here, you're very well organized. That's why I need to do I can play I can play a little bit.

JULIE-ANN: We have more than I needed more than one stand for this today. Right? You asked me what we can do. Well, I think the most important thing is to try to remember what we don't know, what we didn't know, when we first started out.

JIM: Ah, okay.

JULIE-ANN: And that is so incredibly hard, because once you know it, you don't unknow it. I think that's where a lot of that struggle comes in. Because we forget what it's like to not

know. And so, it's kind of like dialing it back quite a bit of something I noticed a lot when I'm working with new professors that are straight out of grad school is in their teaching, like a freshman level survey course. They end up teaching it at a graduate level, because that's where their mind is at. And they have forgotten how to dial it back.

JIM: And there is a- this concept of rigor is something that's hard, hard for us to grapple with sometimes that we feel like we should make them work harder, because rigor is a good thing. But if we're but- rigor can also just be making it harder for the sake of being harder if we're not learning,

JULIE-ANN: Correct, yeah, we don't want to frustrate them. We, there's, you know, having high expectations, and then there's the roadblock that there's no way they can achieve. So.

JIM: So, when we're talking about organizing experiences for students, what we're really doing is we're talking about when we're when we're when we're in the teaching mode, making sure that they can get a good handhold on this information, and they can embrace it, and then they can do what they need to do with it, to actually learn from it. So, what are some of the different approaches to that?

JULIE-ANN: Well, before we talk about approaches, without you, yeah, I want to build on what you just said. So, there's this, there's this word called encoding. And it sounds, you know, so highfalutin. And basically, what it means is taking information and coding at trying to organize it and putting it into long term memory so that you can retrieve it. And so, so often we focus on Oh, we want to help them recall the information, get that information, write it down, do a test, whatever. But we don't think about how to help them... put the correct file label on the the information.

JIM: To file it a way in the right place.

JULIE-ANN: Correct. Yeah, you know. I don't know if everybody is as guilty as I am of using the Mac search feature. And so, I don't always label my files correctly. Very well. And so then, I spent, you know, 40 minutes trying to remember what did I call that?

JULIE-ANN: What did I call the file, yeah.

JULIE-ANN: And so that's an example of not encoding it correctly. And that's what our students do a lot of times A lot of times they think they are putting the correct label on it, and they're not. So how can we help them put that correct label on. So, there's a couple things you can do besides just, you know, the teaching tip kind of things. One is be overt; model for them how you are thinking about the information, as you are showing it to them. So instead of saying, well, here's a formula, and this is you do this, this, this and this, and here's how you get to the answer. Walk through and say, okay, here is this step. And as I look at this step, I think about, here's all the factors that could matter. Here's all the things and next step, and, you know, just step by step and thinking out loud, so that your students can see how an expert thinks about it, right. So modeling is one example being overt. And then there's other things like Do not give

your students a complete copy of your lecture notes. Do not give them the PowerPoint things.

JIM: And students will often ask for that-

JULIE-ANN: Oh, they beg for it. Yeah. They just like, I wish my professor gave me that right. And so Professor caves, but that really impacts your student's ability to learn, because they're not engaging fully.

JIM: Because at best, they're just going to try to memorize what's on each slide.

JULIE-ANN: Correct.

JIM: And you're not doing anything. So, in other words, you have to do something with the information in order to make it stick.

JULIE-ANN: Correct. You have to-

JIM: You have learned?

JULIE-ANN: Yes. Oh, come on, Jim. Do something in order to learn?

JIM: I know. I know.

JULIE-ANN: Oh, concept maps, do we have time to talk about concept?

JIM: Oh, no, I think we should talk about concept maps, because I think that that's a technique that can be used, I think it can be used in more disciplines than it is. In other words, I think it's something that that breaks all the boundaries.

JULIE-ANN: Yes. Yeah. Apparently, I'm becoming known as the concept map queen.

JIM: Oh really?

JULIE-ANN: Oh, well, as I keep leading workshops on how to use concept maps, well, but but I think they're an amazing tool. So, concept maps, and its sister brother, mind maps, are a way of visually organizing information, and seeing how things are interconnected.

JIM: So, concept maps I'm familiar with, but mind maps, what are those?

JULIE-ANN: Mind maps are more of a... uhm... Well, I don't wanna say visual thing, because concept map is visual also. But instead of using words, you use images?

JIM: Oh, okay?

JULIE-ANN: And it's less geometric, and looks more like neurons going around, and you got tree trunks. And I think it's wonderful for people who, like my husband, who are very picture oriented. He's an artist, so that helps him. There's people who love mind maps

and hate concept maps. And then there's others who look at mind maps and go, No, mind maps don't come naturally to me. So, I'm a little nervous about misrepresenting them. Okay.

JIM: Well, we'll we'll try to look into it a little bit more, maybe we can put some links on- On our show page. And, and, you know, we can always do another episode on it... we do a little more research. But anyway, the idea is not to get too far, right? The idea that the concept maps or mind maps are ways of, of doing what?

JULIE-ANN: Of taking that core information, your concept, and then branching out from that. And if you, for those of you listening, I'm moving my hands in all sorts of ways that you can't see. But branching out from that core concept and figuring out, okay, here are the five important things you need to know about this concept. And for each of the nodes that branched out from that core concept, what are the five important things I need to know about that particular thing? And then how did those things connect with the other things and so you may end up with a concept map that may be kind of boring looking, where there's not lots of arrows going around different places. If you are, say, in nursing, you're going to have arrows going all over the place. Because you want your students to know how things interact.

JIM: Yeah, the interconnectedness; gotcha, gotcha. Okay.

JULIE-ANN: Did that even make sense?

JIM: I think it does make sense I think that is this best used as a technique when you're introducing new concepts? Or is it best use for review how- Would you use it?

JULIE-ANN: All the time? So, one way you can use it is to find out their prior knowledge. You have everybody do concept map, tell me everything you know about prior knowledge. And they draw all their little things and you have them turn it in and you look at it, and you see how complex their thinking is about that topic of prior knowledge, for example. And then you give it back to them and/or have them create a new one. And as you are going through the lesson, then you have them complete the concept map and how things relate. And you could have them share theirs with a partner. Compare, what what do you have that your partner doesn't have? And and vice versa? And then you can also use it as review? What is missing from your concept map? And what do you think will end up on an exam or a paper, you can use a concept map to help organize your thinking for a research project or paper, or...

JIM: That's how I I guess, work with students? And we talked about concept mapping in the in the basic speech course. Because, you know, how do you how do you how do you come up with a focused enough topic? Yes, you can make a good argument about that. And, and it also helps you understand what are the qualifiers? And what are the right potential rebuttals against an argument, right, you're gonna make so.

JULIE-ANN: I mean, my dissertation had the, you know, my topic was in the middle, and my five chapters branched out from there. And, you know, you can write a dissertation with a

concept map. Well, wow, okay. Yes. This makes for easy reading for the committee. Yeah. They wanted me to elaborate a bit more. Yeah, I don't understand why.

JIM: Oh, gosh.

JULIE-ANN: And then I know, I have not done this. But I know that there are some professors on this campus who actually use concept maps, as an exam, instead of having a multiple-choice exam or something, they because they want to see that their students understand all the interconnectedness between all the different aspects of that topic. And they have a rubric and that sort of thing to determine that you can't run that through an OpSCAN machine. But right, you know, we hear so often that we want our students to demonstrate deep critical thinking, and this is one way to do that. So, and there's so much more I could talk about concept maps.

JIM: I think, actually, that's probably a good place to stop for today. And we're gonna- we'll we'll put some more information about concept maps up on the Show page as well. And we'll continue on in our next episode and talk about some of the other strategies that are associated with with organizing student experiences. So, Julie-Ann, thank you so much.

JULIE-ANN: Thanks for having me.

JIM: That's all the time we have for this week's episode of Let's Talk Teaching. Find out more about our show by going to our website CTL.Illinoisstate.edu. Click on the podcast link in the upper right of the page. For Dr. Julie-Ann McFann, and for all my colleagues here at the Center for Teaching Learning and Technology, until we talk again, Happy Teaching!