WEBVTT

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00:00:11.220 --> 00:00:29.836

Karen Abraham: Okay, wanna, welcome everyone to the fourth annual Pti, disruptive innovation and fiscal therapist education summit, challenging our assumptions about teaching and learning creating cultures of excellence and education and practice. We are so glad that you have decided to join us for this event.

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00:00:30.250 --> 00:00:51.419

Karen Abraham: We are very excited about this year's topic, and we have assembled an incredible lineup of speakers for you before we get started. I would like to acknowledge and thank the Di Summit planning committee that put this event together. We have Laurel, Abrazi, Peter Altonberger, Mary Blackinton, Greg Hartley, Steve Tepper, and myself. Karen, Abraham.

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00:00:52.012 --> 00:00:58.880

Karen Abraham: We really have an incredible team. And we I really do think we put something really special together for this weekend

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00:00:59.200 --> 00:01:03.472

Karen Abraham: before we get into the program. I'd like to

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00:01:03.900 --> 00:01:04.700

rusty smith: Anybody's.

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00:01:04.700 --> 00:01:07.064

Karen Abraham: First of all, pull up my slides.

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00:01:08.930 --> 00:01:09.640

Karen Abraham: Beth.

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00:01:15.360 --> 00:01:16.490

Karen Abraham: there we go.

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00:01:18.398 --> 00:01:37.200

Karen Abraham: and also I'm going to turn over the program to barb shape barb is the immediate past president of the Physical Therapy Learning Institute, who is going to share some background about Pti. Our mission and some of our initiatives. Take it away, Barb.

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00:01:38.040 --> 00:02:07.849

Barbara Tschoepe: That's great. Well, welcome, everyone. It's really very exciting to see you all. So on behalf of our incoming pti, President, Dr. Jen Green Wilson, who is in flight to France, as I'm speaking. And all of my other board colleagues, we wanna welcome you all back. For those who have participate in the summit before we're very excited to see you join us again. For this year Summit. I also wanna welcome those new to the summit.

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00:02:07.850 --> 00:02:09.910

Barbara Tschoepe: and expect that you will find

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00:02:09.910 --> 00:02:38.610

Barbara Tschoepe: that are telling a group of presenters are going to encourage thoughtful reflection, lively discussions amongst all of our participants and recommendations. So that we can enhance student learning of our within our respective environments. We're expecting over a hundred 25 participants this year in the summit, as you may know, it is an invitation only summit. Unlike most of our others. And the D. The di Committee

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00:02:38.930 --> 00:03:05.810

Barbara Tschoepe: defines the topic for us identifies all the presenters and leads our discussions in in these next 2 days, and they do all the preparation and all the grant work truly to get this this present, I mean this summit to really become a reality. But then what they also do is they ask each of our board members of Pti to nominate guests, who they who, we expect, really will contribute to the conversation.

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00:03:05.810 --> 00:03:11.260

Barbara Tschoepe: So as our guest, we we have decided. And and we recognize that you all

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00:03:11.635 --> 00:03:33.789

Barbara Tschoepe: our individuals who can motivate others to lead change in our academics, in our clinical communities we look forward to exploring a variety of topics related to learning sciences together in these next couple of days, and hope that you're

gonna return to your own spheres of influence to implement at least one new idea that enhances Dpt

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00:03:34.120 --> 00:03:34.820

Barbara Tschoepe: die

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00:03:34.930 --> 00:03:36.050

Barbara Tschoepe: next slide. Yeah.

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00:03:38.110 --> 00:03:39.330

Barbara Tschoepe: currently.

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00:03:40.230 --> 00:04:04.639

Barbara Tschoepe: Oh, there we go. Currently Pti offers 3 flagship initiatives that affirms our mission and moves us closer to our vision as an organization which is to be recognized for our leadership in driving change, challenging the status quo and collaborating to ignite innovation that will influence physical therapy education as well as research and practice.

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00:04:04.730 --> 00:04:19.720

Barbara Tschoepe: Pti was founded by 2 visionary leaders and trailblazers in physical therapy. Dr. Geneva Johnson, and Dr. Linda Woodruff, who, as dear friends, originally envisioned Pti to be a think Tank

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00:04:19.720 --> 00:04:39.149

Barbara Tschoepe: that would be able to influence, disrupt, and yet encourage collaborative positive changes within our education communities. We are really very proud to continue to move forward, that honors their legacy as we begin to create new opportunities for us. Moving forward in the future.

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00:04:39.150 --> 00:04:58.810

Barbara Tschoepe: We currently host 3 flagship events that serves as our organization's 3 major pillars. We'll be celebrating the eleventh Annual, Geneva R. Johnson Forum, that fosters a space for innovation and incubation of new ideas, and it serves as the keynote

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Barbara Tschoepe: for the Acap and the Academy of Education Education Leadership Conference that's held each October our second pillar honors Dr. Linda Woodruff.

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00:05:10.300 --> 00:05:15.864

Barbara Tschoepe: and it's intended to really affirm and and support her

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00:05:16.957 --> 00:05:26.189

Barbara Tschoepe: to improve awareness and encourage action, to mitigate ongoing professional challenges related to Jedi and anti-racism.

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00:05:26.190 --> 00:05:26.960

Chris Sebelski: Right away.

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00:05:26.960 --> 00:05:27.769

Barbara Tschoepe: This would be.

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00:05:27.770 --> 00:05:28.690

Chris Sebelski: And you guys.

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00:05:28.690 --> 00:05:54.530

Barbara Tschoepe: The Ldw. Lecture as that will be offered this June in 2024, and then this summit is our third pillar of an organization of the organization, and it aims to bring current hot topics and physical therapy education to the table for discussion with the goal, to spearhead plans for both individual and collective actions that will celebrate our current Ptl boards priorities

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00:05:54.970 --> 00:06:01.810

Barbara Tschoepe: between us to who we are and what what we really stand for at this moment. So next slide here

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00:06:02.820 --> 00:06:04.720

Barbara Tschoepe: I want to introduce

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00:06:05.170 --> 00:06:09.639

Barbara Tschoepe: the 25 board members that make all of these events happen

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00:06:09.810 --> 00:06:27.339

Barbara Tschoepe: as you. As you see their faces. I would suspect that many will recognize that. You will see people that have been known in the profession to be very action oriented to be influencers, collaborators, and of course, drivers to ignite change in our professions.

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00:06:27.360 --> 00:06:36.959

Barbara Tschoepe: Some of us have been known to be not only disruptive, but deviance in a variety of ways, and that was both Jeannie and Linda's

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00:06:36.960 --> 00:06:59.200

Barbara Tschoepe: legacy that they passed on to us. We welcome each of you to join us in our journey to continue to influence and shape our future. And I'm sure that we're going to learn from each other in these next 2 days. So I encourage everyone to participate as much as you can, and I also want to thank you for giving of your precious time to join us for this year's summit.

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00:06:59.711 --> 00:07:04.978

Barbara Tschoepe: Thanks again. And, Karen, I'm gonna send it back to you to introduce our speakers.

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00:07:06.740 --> 00:07:07.625

Karen Abraham: Thank you. Barb.

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00:07:08.430 --> 00:07:35.079

Karen Abraham: The theme of this year Summit is teaching and learning and physical therapist education. I think most of us in academic roles would agree that most of us receive very little formal education in the science of teaching and learning. Our academic and clinical teaching practices are often based on assumptions about teaching and learning and new faculty are frequently ill prepared for their roles in teaching, mentoring, coaching, assessment, and others.

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00:07:36.420 --> 00:07:55.859

Karen Abraham: How often do we ask ourselves, what evidence do we have to support our choice of teaching and learning activities, assessment strategies or instructional delivery? Or how are we coaching and mentoring academic and clinical faculty regarding the knowledge skills, and behaviors related to teaching, learning and assessment.

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00:07:56.720 --> 00:08:07.679

Karen Abraham: We believe that teaching is far more than transmitting knowledge or clinical skills and that continuous learning across the learner continuum is imperative. Given rapidly complex and changing

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00:08:07.920 --> 00:08:21.310

Karen Abraham: clinical settings. Therefore, over the next 2 days, we hope to look in the mirror and challenge our assumptions about teaching and learning. By turning to research from the learning sciences, we hope to explore

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00:08:23.110 --> 00:08:27.100

Karen Abraham: teaching and learning strategies, to promote competence and physical therapist practice.

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Karen Abraham: core competencies for academic and clinical teaching, faculty development assessment strategies and more

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Karen Abraham: to kick us off. We are thrilled to have a dynamic duo presenting our plenary session.

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Karen Abraham: We are excited to have Dr. Maria Myelopoulos and Dr. Nikki Woods, from the Institute of Health Policy Management and Evaluation at the University of Toronto with us today to present their talk, entitled

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00:08:51.590 --> 00:08:56.150

Karen Abraham: Designing for Failure and Instructional approach for future Success.

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Karen Abraham: Dr. Maria Mileopolis holds her Ph. D. In human development and education.

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Karen Abraham: She is currently senior scientist and associate director of the Wilson Center for research and Education

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00:09:07.960 --> 00:09:18.030

Karen Abraham: program, director and associate professor and the health professions, education, Research, Ph. D. Concentration at the Institute of Health Policy, Management and Evaluation.

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00:09:18.060 --> 00:09:28.099

Karen Abraham: Associate Professor in the Department of Pediatrics and Curriculum, Scientist and MD. Education at the Timer T. Faculty of Medicine University of Toronto.

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00:09:28.920 --> 00:09:52.229

Karen Abraham: Over the last 15 years Dr. Myelopoulos has successfully led a program of research aimed at understanding the development and performance of adaptive expertise in medicine with a particular focus on identifying the ways in which experts, clinicians move beyond application of their past knowledge when appropriate to address the needs of patients as well as the limits and opportunities of their own context.

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00:09:52.340 --> 00:10:08.999

Karen Abraham: In her work Maria uses a range of methodologies and theoretic theoretical frameworks, from cognitive psychology, clinical reasoning, and the learning sciences to evolve understanding of the knowledge, capabilities, and learning experiences that underpin adaptive expertise.

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00:10:09.300 --> 00:10:22.339

Karen Abraham: The ultimate goal of her research is to translate this understanding to educational design that promotes the development of expert clinicians who are able to handle the complexities and challenges of the healthcare workplace.

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Karen Abraham: Dr. Nicole Woods is the Richard and Elizabeth Curry, Chair of Research and Health Professions education. She is also Director of the Institute for Education Research Tier at University Health Network and Senior Scientist at the Wilson Center University of Toronto.

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Karen Abraham: Dr. Woods leads an internationally recognized research program that uses methods and principles from cognitive psychology to advance medical education, theory and practice.

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Karen Abraham: Her research has significant implications for education across the developmental continuum and various health disciplines.

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Karen Abraham: A fellow of the Karolinska Institute Prize for Medical Education Research. Since 2,019. Dr. Woods is currently a professor in the department of family and community medicine at the University and of Toronto

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00:11:13.050 --> 00:11:21.439

Karen Abraham: in 2,021 Dr. Woods was recognized as one of Canada's top, 100 most powerful women by Wxn.

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00:11:21.730 --> 00:11:30.260

Karen Abraham: Welcome, Dr. Milopoulos and Dr. Woods. Thank you so much for being here today. I will now turn the presentation over to you.

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00:11:34.400 --> 00:11:36.287

Maria Mylopoulos: Thank you, Karen. I'm

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00:11:36.880 --> 00:12:04.766

Maria Mylopoulos: getting that off my screen. Thank you so much. Thank you for a lovely introduction. It's always a pleasure to speak to such an obviously engaged and passionate group of educators. And this event is truly inspirational and listening to how you describe it.

It's history and what you, what you've been doing and what you're doing is exactly the type of thing that Nikki and I just absolutely love. So thank you for inviting us to be part of this conversation and and discussion, and we hope to.

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00:12:05.060 --> 00:12:10.380

Maria Mylopoulos: I I think there's ample time at the end of our presentation to learn from each other. So we're very much looking forward to that.

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00:12:10.790 --> 00:12:15.236

Maria Mylopoulos: So Nicki and I have worked together for

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00:12:16.160 --> 00:12:41.080

Maria Mylopoulos: a a reasonably long time. I just find there's no need to attach numbers to things. And I think that we we really have been quite inspired. Over the last 2 decades or so. Around how to think about the learning sciences, how to think about concepts from learning sciences and education? And think about how they work and and would be applied, and how professions.

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Maria Mylopoulos: and do research in that space, so that we can also then inform back to the theories. That are underpinning learning sciences more broadly. So we think of ourselves as no, we don't think of ourselves. We are people who do apply theory building and it's it's really inspirational to be able to share that with educators, because you are a great part of that work. You are the reason why we do it. And also

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00:13:04.730 --> 00:13:07.300

Maria Mylopoulos: part of how we construct knowledge and understand things.

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Maria Mylopoulos: So today, we're talking with designing for failure and instructional approach for future success. And the idea of learning from failure is that is a concept that has a very long history. In the learning sciences, and we thought it would. It's particularly salient right now. And timely in terms of some of the conversations that have been going on more broadly in the world. And I think that it it has a lot of a lot of potential if it's understood well to really shape and transform the future of health professions.

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00:13:37.150 --> 00:13:59.980

Maria Mylopoulos: So I think, as we, as we work on this concept and think about this concept, it's appropriate to start with John Dewey back in 1933, who said, the origin of thinking is some perplexity, confusion, or doubt, and Dewey is maybe the original constructivist, and I'm sure you've all of a ho have all heard his name? And it it really focuses on on this idea and concept that we need to be.

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00:13:59.980 --> 00:14:24.709

Maria Mylopoulos: We can't just go through the world. Complacent. Everything can't sort of just automatically make sense. And nothing really triggers, any sorts of sense any sense of wonder, or even confusion, or some feeling that we don't understand something, and it's that lack of understanding, possibly a cognitive conflict, possibly tension with something we know we've known before. That really leads to deep learning and understanding. And do we articulated that a very long time ago.

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Maria Mylopoulos: more recently, in the learning sciences. Dan Schwartz and John Bransford talked about this idea of a time for telling, and that if we tell answers too early in in a learning experience of any kind, whether it's in a classroom, in a workplace, or anywhere else, it can lead to superficial knowledge and impede the ability to learn in the future.

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Maria Mylopoulos: And what they're really pointing to is that what you, what you want to do is create that confusion, that perplexity, that that doubt, that struggle? And in order to create the perfect time for telling, for the educator to come in and help resolve that struggle, that that the learner has been experiencing.

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Maria Mylopoulos: so they termed this a time for telling, and I think it's really quite powerful, because we often think about time. The time to tell in the in the wrong way, and we'll we'll talk a little bit more about that.

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00:15:10.920 --> 00:15:32.680

Maria Mylopoulos: So productive failure is really a concept that builds on all of this, and it's just defined as the engaging students and solving problems requiring concepts they have yet to learn, followed by consolidation and instruction on the targeted concept. And I'm going to pause here for just a minute and really emphasize the followed by consolidation and instruction on the targeted concept.

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00:15:32.870 --> 00:15:46.600

Maria Mylopoulos: Otherwise it's not productive, so failure in and of itself is not a powerful learning experience. It has to be carefully designed and and thought about and followed up with a way to have the student feel and

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Maria Mylopoulos: hopefully succeed on an assessment as part of that feeling that they have learned the target concept that you were trying to help them work through.

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00:15:56.020 --> 00:16:19.300

Maria Mylopoulos: So failure must be followed by feedback and consolidation in order to be productive. And I'm belaboring this point because what Nikki and I have found through presenting some of this work in in many spaces is that people always say, but failures and feel that students don't like it? Why would they want to fail? How can we just avoid this whole feeling and experience? And what we're really trying to get at is that when you do productive failure well.

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00:16:19.711 --> 00:16:29.049

Maria Mylopoulos: students do not come out of this learning experience, experiencing it as a failure, they should. They should, if the productive failure. Experience should actually be one of success. Ultimately

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00:16:31.010 --> 00:16:52.110

Maria Mylopoulos: so productive failure can be contrasted quite meaningfully with direct instruction and direct instruction is often how we teach. So we give students some content, and that content can be something we've asked them to read in advance, or it

could be something that they do with us in the classroom. And then we ask them to use that content content and demonstrate to us that they understand it through that use.

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00:16:52.300 --> 00:17:20.280

Maria Mylopoulos: Productive failure, fail failure flips this all around. It says, okay, let's have students first engage in a a challenge, a problem that they are they should not be able to solve. So you have very deliberately calibrated it at a level where they should not be able to solve this problem effectively, and as they struggle, as they generate questions through that struggle, and that can be guided and scaffolded in in meaningful ways. That creates that time for telling where, then the educator can come.

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Maria Mylopoulos: come in and consolidate and provide feedback and answer those questions that students have now generated, and that sort of engagement that is really grounded in that that confusion that John Dewey talked about in that struggle. Is really what creates that deep learning and deep understanding.

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Maria Mylopoulos: so productive failure. And this model of or design of education has been quite prominent in the learning literature from in the K to 12 education space, certainly, and also in higher education. Less so in health professions, education, for many reasons that we can maybe unpack later. But I mean, I think that there, there are probably some cultural elements to it as well. And so we set out back in. I guess it was

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Maria Mylopoulos: papers in 2019, but a little bit before that. To think about how to think how to think about the concept of productive failure in a health professional education, space?

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Maria Mylopoulos: Because people said, Oh, well, the knowledge is different. The learners are different. How would we actually make this work in in where we are. So we embarked on this project with one of our wonderful students, Naomi Steeh, who's a pharmacist? And we designed a productive failure experiment to to see how this concept would play out in a pharmacy classroom. So we had students do. One can one instructional condition which was the productive failure

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Maria Mylopoulos: condition where they were asked to try and work through, and I'll get to what it. What? Exactly. They're asked to work through. Ask, try, and work through a concept and generate generate an answer. That we knew that they wouldn't be able to solve and then the other group got direct instruction. So they were sort of given they were talked through the concept, and then ultimately, at the end of both of these instructional conditions. The key thing is is that they both received the formula. This was crading clearance.

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Maria Mylopoulos: So when they come at the end of these 2 instructional phases, they both receive the correct answer. And there's a practice phase where they practice using the formula.

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Maria Mylopoulos: and then they do an acquisition assessment, which is, how well did you acquire this knowledge? Application? How well can you apply it to some standard knowledge test of transfer? And then a preparation, feature learning, assessment which we care a lot about as we think, and we'll unpack that later for you as well. And that's really the idea that in the stem of the question. There's some sort of information that has implications for how you're now going to solve this this problem, and you need to understand the implications of that new learning in order to solve problems effectively.

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00:19:34.340 --> 00:19:57.310

Maria Mylopoulos: So the the problem was how to use how to calculate Cratin and clearance. And Naomi, who's a pharmacist herself. Talked about how this was a really great one to use. Because what you see is that in pharmacy practice experts often are able to move beyond the specifics of the formula and think about when it doesn't apply, based on patient situation, patient characteristics, whereas novices typically don't.

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00:19:57.320 --> 00:20:08.630

Maria Mylopoulos: So it seems that you know this is a real space where what you're seeing is that typically novices tend to sort of take this formula, try and apply it unreflectively, even when it's really not working. So she thought, Okay, this is this is where I want to do this work.

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00:20:09.860 --> 00:20:22.959

Maria Mylopoulos: And what we found is that participants in the productive failure conditions significantly outperformed, those in the Direct Instruction group specifically on the preparation for future learning assessment and without compromising acquisition and application knowledge.

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00:20:23.240 --> 00:20:45.570

Maria Mylopoulos: And this is really quite key, because what it means is that they still acquire and retain. And all those things that we want traditionally from education, they're able to take the formula and use it effectively. But when introduced with novel content, novel information that should shape the way that they apply this formula to a problem they've never seen before. They're able to understand the implications of that knowledge much better than the group that receives direct instruction.

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00:20:45.660 --> 00:20:47.490

Maria Mylopoulos: And that's really quite important.

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Maria Mylopoulos: And another feature of this study and I know Nikki always hates when I don't put up grass. But another feature of this study is that the participants in the Direct instruction group actually did better in that initial practice phase. So they they did. It was a strong instructional condition. But where they faltered was specifically on their capacity to understand and integrate new knowledge into their problem, solving in a in a situation they've never seen before.

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00:21:09.830 --> 00:21:10.770

Maria Mylopoulos: So

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00:21:11.340 --> 00:21:26.480

Maria Mylopoulos: based on that and based on the learning sciences, literature, and based on what we see in health professions. It looks like teaching complex topics earlier in the

curriculum, using designs like productive failure, can support knowledge, acquisition, acquisition, and application and preparation for future learning.

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00:21:26.630 --> 00:21:49.879

Maria Mylopoulos: and the reason that again, we emphasize this is because we are often told, no, no, they're they're not ready yet. We can wait. We can do this later. We can get to it later. Later, we can focus on the more complex things, and we'll just start them easy. But when you carefully design a curricula, you can really start from the very beginning by engaging students in that meaningful struggle. In order to generate that active active learning and deep conceptual understanding.

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00:21:51.320 --> 00:21:53.399

Maria Mylopoulos: and I will turn it over to Nikki.

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00:21:56.210 --> 00:21:59.409

Nicole Woods: You. I mean you would if Zoom would let me hang on.

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00:22:00.400 --> 00:22:04.809

Nicole Woods: It's not letting me kick you out. Can you stop sharing, and then it will let there we go.

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00:22:05.170 --> 00:22:05.980

Nicole Woods: That's it.

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00:22:08.090 --> 00:22:12.190

Nicole Woods: Okay? So hopefully, that worked. Can you all see my screen?

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00:22:12.860 --> 00:22:14.370

Nicole Woods: That's it. Okay, group.

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00:22:14.650 --> 00:22:38.479

Nicole Woods: So one of the things we wanted to do today is to share with you. Our work on productive failure. And we could just stop there and tell you, trust us. This works. We've done it a million times. We could also cite other researchers. Kapor has done a lot of work on productive failure. You'll just have to take us for our word that it is a fairly robust phenomenon. And we're confident that it's high quality education, so we could just stop there if we wanted to.

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00:22:38.758 --> 00:22:45.169

Nicole Woods: But you'd be very unsatisfied. Because when you go to actually implement any of the work that you see in the learning sciences.

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00:22:45.170 --> 00:22:49.040

Nicole Woods: You have to take it a step further. If you're really going to make it work for you in practice.

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00:22:49.040 --> 00:23:08.760

Nicole Woods: it's one thing to say, okay, yes, this is a concept that has been shown to be effective. But if you're going to actually implement it in your own schools, in your own classrooms with your own students. The next step is understanding why it works. Because if you understand why it works, then you can play with the concept, play with the construct and actually use it in your own practical environment

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00:23:09.060 --> 00:23:31.340

Nicole Woods: without an understanding of why you're kind of stuck if you can't exactly teach preet and clearance the exact way we did in the study. So what I'm gonna walk you through is some of the underlying learning mechanisms. And I'm gonna be up front. If you had somebody else coming in, they might tell you another version of the mechanisms you're gonna get our specific version. So what we're trying to explain to you is this particular finding

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00:23:31.340 --> 00:23:41.729

Nicole Woods: we have demonstrated, and of course work has demonstrated, that productive failures, supports knowledge, acquisition, it supports knowledge, application, and it prepares students for future learning.

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00:23:41.730 --> 00:24:07.860

Nicole Woods: And so what we wanna understand is, what's the mechanism by which it actually does this? And so there's probably a multitude of ways that you can support acquisition that you can support application. And so when you start doing this type of work and trying to unpack mechanism, it's really easy to just trying to jump to the task, the orienting tasks that the students are doing and try to guess and say, Okay, well, what is that task doing for the student. What are they benefiting from it?

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00:24:07.860 --> 00:24:15.249

Nicole Woods: And when you look at something like productive failure, you might want to really analyze the activities that the student's engaging in the moment.

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00:24:15.560 --> 00:24:27.849

Nicole Woods: But because you're listening to the Nicki and Maria show, we're gonna not focus on the activities we're gonna focus on the underlying learning and memory mechanisms that are really driving the value of that activity. Because

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00:24:27.860 --> 00:24:46.150

Nicole Woods: spoiler alert. We're cognitive scientists and cognitive psychologists. So for us, these are the principles that are going to matter the most. It's going to be these type of learning and and memory mechanisms. And so if we're trying to understand this, we have a wealth of other literature that we can draw from. To really understand this kind of memory trajectory.

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00:24:46.380 --> 00:24:58.339

Nicole Woods: And so the piece that we think is most useful. Here is understanding really early work from cog psych on levels of processing. And so there are literally decades of work that look at the way students process content.

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00:24:58.340 --> 00:25:20.227

Nicole Woods: and how the impact and the depth of that processing can lead to better memory and better retention. And one of the most kind of just seminal findings in cog psych is work that was done by Craig and tolding, showing that if you were just asking students to do basic memory work. Just kind of learning to memorize a list of nonsense syllables, or even a list of

114

00:25:20.640 --> 00:25:46.950

Nicole Woods: The memory list of words. What you see is that you can ask them. You can provide an orienting task that really just orients them to the structure of the word so maybe they just look at whether or not the word is spelled correctly. Maybe they just look at how to use the word find a rhyming word something like that versus you can have them process the information a lot more deeply. You can get them to find meaning in the word. That would be semantic processing.

115

00:25:46.950 --> 00:25:52.479

Nicole Woods: And what you see over numerous experiments is that the deeper you process information.

116

00:25:52.480 --> 00:26:09.619

Nicole Woods: the more likely you are to remember it the better you are learning it. And so you can start to think, okay, what does that mean for education? It basically means that any task that encourages deeper processing is going to encourage better learning and long term learning that you also see in some of the settings.

117

00:26:09.970 --> 00:26:35.820

Nicole Woods: And so this graph I do hate when Maria doesn't include graphs. So I include graphs as often as possible. And so this graph is actually an aggregate of a whole bunch of experiments. And what you see across all of them is that if I give participants again an orienting task, so either give them a list of words, and I say, just check the spelling of the word, which is just surface level processing versus use the word in a sentence and reflect on its meaning.

118

00:26:36.130 --> 00:27:03.080

Nicole Woods: That's the other orienting task. Then I can also add another manipulation where I tell one group you are going to have to learn this, so try to remember it versus the other group. I don't need to tell them what they're gonna do. I just give them the orienting task and what we can look at, and what we see over all of these studies is, even the students who didn't intend to learn the words will learn it better if the orienting task requires deep processing.

119

00:27:03.100 --> 00:27:25.380

Nicole Woods: So what that tells us is virtually any task that we create as instructors. Whether or not the students like it, whether they want to be there, whether they're enjoying it as long as they are engaging in the material in a deep way, they will, in fact, have a better chance of learning that material down the line. So active learning generally does work. It's grounded in cognitive psychology.

120

00:27:25.670 --> 00:27:50.780

Nicole Woods: Here's the thing, though, we were talking about productive struggle. And so what I would argue from this body of work is that really any guided or unguided discovery approach would actually promote deeper processing. For sure I'm pretty you don't have to do productive struggle to get deeper processing. There's lots of different ways to produce deeper processing. And most of those ways would probably support acquisition and application.

121

00:27:50.780 --> 00:27:55.700

Nicole Woods: because those types of knowledge are best linked to what I was just describing in the Craig and holding studies.

122

00:27:55.800 --> 00:28:21.839

Nicole Woods: But what we saw in the study that we were showing you is that productive struggle gives you this extra thing, gives you this extra piece of preparing learners for future learning and preparing them to learn novel content. And that's the piece that we think is key. So let's unpack that a little bit more. What does it take to not only get acquisition application, but also prepare students for new learning. And so we have a series of studies that look at this. I'm gonna just show you one of them.

123

00:28:21.910 --> 00:28:37.510

Nicole Woods: We look at 2 groups of students. These students are learning to diagnose neurological neurology cases. So these are undergraduate medical students. One group is an integrated instruction condition. So they're learning the basic science of these general categories of neurological disease.

124

00:28:37.520 --> 00:28:47.009

Nicole Woods: The other students are in the clinical group. So they're learning the same categories without the basic science. So no biochemistry, no anatomy just these are the clinical features and the clinical associates.

125

00:28:47.140 --> 00:28:54.839

Nicole Woods: We have both students learn these 2 sets of materials, really boring the adaptive lectures. Nothing active, but they're learning different types of content.

126

00:28:55.340 --> 00:29:01.129

Nicole Woods: They then complete an initial assessment which test their ability to diagnose those 4 different broad categories.

127

00:29:01.350 --> 00:29:19.879

Nicole Woods: We then challenge them to learn something new. So this is our common learning part where we give them a brand new set of diagnostic categories that are related to the earlier ones. But it's new content for them, and then we assess them on their preparation to learn that new content

128

00:29:19.880 --> 00:29:47.479

Nicole Woods: and what we see in this study is that the students, when we look at their initial performance, there's no difference between the groups. But when we look at that preparation, feature, learning, assessment. It's the students who had that integrated understanding, the students who had the biochemistry, the anatomy, the physiology, deeply connected to the signs and symptoms, they outperform the students who only understood the clinical science on that Pfl, a a assessment.

129

00:29:47.730 --> 00:29:54.899

Nicole Woods: So what that tells us is that integration of basic science can actually better prepare students for future learning.

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00:29:55.750 --> 00:30:21.359

Nicole Woods: Why does that matter here? It's giving us a hit with the integration of basic science does is provide a very specific type of knowledge. That type of knowledge is what we call basic science or conceptual knowledge. So if we're again, I come from a cognitive psychology background. This is not specific to medicine or dentistry, or or Pt, or anything. This is a concept that would apply across the board to pretty much any form of knowledge.

131

00:30:21.360 --> 00:30:31.210

Nicole Woods: all the form of knowledge can be said, considered, organized in what we call a semantic network. There are 2, and I had an example here of just a basic one that would apply to any everyday category.

132

00:30:31.530 --> 00:30:47.930

Nicole Woods: The key thing to keep in mind of all of these concepts is that in a semantic network there's always 2 components. So it's this broad network of boxes and and lines. You can consider them here. It's all of these abstract concepts and specific experiences in memory.

133

00:30:48.680 --> 00:30:53.889

Nicole Woods: There are nodes which are the boxers, boxes, and there are lines which are the connectors.

134

00:30:54.060 --> 00:30:57.860

Nicole Woods: The connectors hold the whole network together.

135

00:30:58.040 --> 00:31:12.399

Nicole Woods: And the connectors are the basic science. So it's those connections that are key to holding the network for together and allowing the network to grow every time you learn something new you add a new connector

136

00:31:12.410 --> 00:31:16.369

Nicole Woods: and a new box that's being prepared for future learning.

137

00:31:16.400 --> 00:31:30.139

Nicole Woods: And so what we've seen from many of these studies. Again, we're just showing you one of them. But what we've seen from many, many different studies is that it's this addition of connections that is really helping students to continue to learn new information

138

00:31:30.300 --> 00:31:32.079

Nicole Woods: after their initial instruction.

139

00:31:32.390 --> 00:31:50.119

Nicole Woods: So we know from this work is that productive failure has one very specific purpose, and one very specific advantage that would go beyond other active learning

methods or methods. And what it does that other methods don't do is allows you to build conceptual knowledge.

140

00:31:50.350 --> 00:31:56.969

Nicole Woods: So productive. Failure gives you those connections that you need that hold the semantic network together.

141

00:31:56.980 --> 00:32:09.879

Nicole Woods: other forms of guided discovery, other forms of unguided discovery. You run the risk of students spending lots of time playing with nodes and building more and more nodes that are unconnected and aren't really linked to one another.

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00:32:09.960 --> 00:32:17.890

Nicole Woods: It's that opportunity to deeply think of a mechanism that you're really benefiting when you use a productive failure. Approach.

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00:32:18.930 --> 00:32:46.919

Nicole Woods: Having said that, there's a lot of still a different way. There's a lot of different ways to play with productive failures. The idea here is to give you some understanding of what's that core element. What's the core building block? The core building block is this idea of building around conceptual knowledge. So now that we have this understanding, that productive failure is going to build conceptual knowledge. We have a huge design space that we can actually work with. And we have a lot of other questions that we can play with.

144

00:32:47.190 --> 00:32:51.900

Nicole Woods: I'm gonna pause here and turn it back to Maria.

145

00:33:00.730 --> 00:33:02.400

Maria Mylopoulos: Okay. So

146

00:33:03.680 --> 00:33:10.239

Maria Mylopoulos: as you're coming along our journey with us, so here's the next step. Why does it matter?

147

00:33:10.450 --> 00:33:13.877

Maria Mylopoulos: So if it's really about doing well on an assessment?

148

00:33:14.340 --> 00:33:27.989

Maria Mylopoulos: you know we can do well on assessment in many different ways. Is it really about that like, why, why are we trying to support the development of conceptual knowledge in our students? What does that afford us in terms of the future health professionals that we're we're we're supporting in our training.

149

00:33:29.780 --> 00:33:30.740

Maria Mylopoulos: So

150

00:33:31.760 --> 00:33:43.719

Maria Mylopoulos: I'm gonna put up this quote. Eventually, they'll quit being novices without her having to do anything about it. The important question is, what will they become? Will they become experts in their lines of work, or where they swell the ranks of being confident or mediocre?

151

00:33:44.300 --> 00:34:03.960

Maria Mylopoulos: And what this quote draws our attention to is the fact that not every education trajectory is the same and not every case. Educational experience is the same for the outcomes that we're looking for. We are looking for exceptional health professionals who are experts in their domains of work and are able to be dynamic and adaptive and handling the problems. That are

152

00:34:03.980 --> 00:34:06.979

Maria Mylopoulos: while handling the challenges that patients need them to handle

153

00:34:07.410 --> 00:34:08.330

Maria Mylopoulos: soap.

154

00:34:08.810 --> 00:34:27.479

Maria Mylopoulos: How do we ensure the right trajectory? If it's possible that we can get it wrong. How do we ensure that correct trajectory? And we've been talking about productive failure and ensuring that we're developing conceptual knowledge. I'm gonna zoom gonna

start at the other end and part of ensuring the right trajectory is understanding what an expert is. So what is it that we need our experts to be able to do in healthcare.

155

00:34:28.230 --> 00:34:36.590

Maria Mylopoulos: We know that experts do what normally works. So they have a lot of knowledge, and they apply that knowledge effectively. They've seen many, many problems before.

156

00:34:36.980 --> 00:34:47.149

Maria Mylopoulos: They must be efficient and routinized. So we can't have people constantly reinventing the wheel every single time they encounter a particular challenge there. There must be some efficiency routinization.

157

00:34:47.650 --> 00:34:55.679

Maria Mylopoulos: And so they must have procedural understanding and knowing what to do in many, many different situations that they might encounter. And that's important.

158

00:34:56.610 --> 00:34:59.000

Maria Mylopoulos: But fast isn't going to be the only goal.

159

00:34:59.890 --> 00:35:01.980

Maria Mylopoulos: Simple isn't going to be the only goal.

160

00:35:02.470 --> 00:35:15.440

Maria Mylopoulos: and inevitably there'll be problems they haven't seen before, so it doesn't matter what we do. As educators in any professional domain, we cannot possibly expose our students to every single variation of a situation they're going to find themselves in in their work life.

161

00:35:15.530 --> 00:35:18.299

Maria Mylopoulos: So there will be problems they haven't seen before.

162

00:35:18.520 --> 00:35:29.680

Maria Mylopoulos: There will be novelty, there will be ambiguity. There will be complexity, and people will feel uncertain in their professional lives, and that has to also be understood as fundamental to expertise

163

00:35:29.810 --> 00:35:32.079

Maria Mylopoulos: rather than a challenge to expertise.

164

00:35:33.570 --> 00:35:46.870

Maria Mylopoulos: If it's not, then the risk is that experts and and professionals in any domain inappropriately try and fit unknown problems into known solutions because they're supposed to know. And so if you're supposed to know, I should know. And I'm gonna try and and make this work

165

00:35:47.271 --> 00:35:51.850

Maria Mylopoulos: but it can lead to many errors and definitely leads to mediocrity.

166

00:35:52.410 --> 00:36:12.610

Maria Mylopoulos: Conceptual understanding is key to getting out of this. So it's knowing why you're doing what you're doing. And if you know why you're doing what you're doing. If that initial, what solution isn't gonna fit or isn't gonna work in this situation, you're able to be more adoptive and flexible in figuring out how to serve that underlying. Why, even in the absence of the usual solution that you would have.

167

00:36:12.930 --> 00:36:23.370

Maria Mylopoulos: So the deep conceptual understanding is actually core to being able to support flexibility, creativity, and innovation in moments of uncertainty, complexity, and ambiguity.

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00:36:24.890 --> 00:36:34.669

Maria Mylopoulos: I wanna just emphasize that we talk about conceptual understanding, conceptual knowledge as being really crucial and important. And that's the sort of innovation side of adaptive expertise.

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00:36:34.670 --> 00:36:56.090

Maria Mylopoulos: But efficiency also matters, too. The thing is is that education already emphasizes efficiency. We're already getting a lot of procedural knowledge. We're already getting our students repeating things on tests and memorizing and telling us some. You

know the steps in the checklist and the guidelines, and this is how everything works. But we're not getting enough of is the conceptual understanding, and we're not getting enough of the whys into how we're preparing our future experts.

170

00:36:56.520 --> 00:37:14.079

Maria Mylopoulos: So adoptive expertise really is a construct that encompasses both the what's and the whys and reminds us that we have to be able, through education, to support the development of adaptive expertise by tending to both of these dimensions of how we need to know in order to be able to perform in healthcare settings.

171

00:37:14.370 --> 00:37:18.260

Maria Mylopoulos: And that's why we bandicize the conceptual knowledge piece.

172

00:37:18.330 --> 00:37:31.139

Maria Mylopoulos: So here's a really technical definition of adaptive expertise. It's procedural fluency. So that's that procedural knowledge complemented by explicit conceptual understanding that permits new learning and invention in situations of novelty, ambiguity, and uncertainty.

173

00:37:31.750 --> 00:37:39.480

Maria Mylopoulos: So what we have is is a construct of expertise that is much more encompassing of the realities of the daily work that health professionals will find themselves doing

174

00:37:40.540 --> 00:38:02.959

Maria Mylopoulos: and core to this and one of our, the person who helps us with our slides and said this. So I thought I'd repeat it because I thought it was really quite interesting is what you know helps you in moments that you don't know, and that that's what it really comes down to. So in moments that you don't know if you're armed with that deep understanding, you're armed that with that conceptual knowledge you're much better able to come up with a new solution in that moment of not knowing.

175

00:38:03.040 --> 00:38:06.580

Maria Mylopoulos: So you're not stumped. And you're and you have a way forward.

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00:38:08.400 --> 00:38:30.470

Maria Mylopoulos: So conceptual knowledge is necessary for both the development and performance of being prepared for that future learning that we've talked about and emphasized. And that's really core to adaptive expertise. I wanna pause for just a second and say, Katherine, Lucy put this very nicely back in 2,013 and said, you know what enduring social systems, biomedical and behavioral constructs must be masked by students to help them understand the human condition.

177

00:38:30.470 --> 00:38:55.060

Maria Mylopoulos: participate in continuous improvement of healthcare and prepare for lifelong learning. And the reason I mentioned this is because when I say that the student need to have deep conceptual understanding what domains that's in how we define the basic science of the health professions is constantly evolving and changing. And we've done some work that's shown that if you include social science, construct sociology, constructs behavioral constructs, and how we understand why a patient is presenting at a certain point in time with a certain set of

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00:38:55.060 --> 00:39:01.459

Maria Mylopoulos: clinical signs and symptoms that's extremely powerful. Particularly as we work to serve everybody in our communities.

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00:39:01.560 --> 00:39:14.649

Maria Mylopoulos: So it's that broad conceptual knowledge is necessary for adaptive expertise, not just the basic science. Or actually, it's not even not just the basic science. It's redefining the basic sciences to include those things as being fundamental to the health professions

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00:39:16.280 --> 00:39:36.869

Maria Mylopoulos: so productive feeler supports the development of conceptual knowledge, and in doing so supports the development of adaptive expertise. And that's why it matters. That is the important part here. It's not just about the classroom based success. It's not just about success and clinical placements. It's about what kind of expertise and what future it's supporting for our health professionals

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00:39:38.570 --> 00:39:40.459

Maria Mylopoulos: and, Nikki. I'll turn it back to you.

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00:39:51.540 --> 00:39:53.230

Maria Mylopoulos: Nikki. You're still muted. Yeah.

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00:39:56.390 --> 00:40:21.040

Nicole Woods: Thank you hopefully. At this point you're convinced of a few things. So the first is, you should be all proponents of productive failure. So at this point everybody's all on board the productive failure train. We're all going to try to incorporate this and think about how we can utilize this on our own everyday practice. We also understand at this point that one of the reasons we want to do this, one of the reasons that we think this is going to be important is because

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00:40:21.040 --> 00:40:27.810

Nicole Woods: we recognize that productive failure is one way to get us to bridge conceptual understanding and rich conceptual knowledge.

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00:40:27.810 --> 00:40:41.410

Nicole Woods: and that rich conceptual knowledge will better prepare our students for feature learning, which is a key capability of adaptive expertise. And so hopefully, everyone is on board. With that I won't take a poll. I'll just take trust that everyone is in agreement.

186

00:40:41.700 --> 00:41:08.829

Nicole Woods: So now we want to leave you with a way forward, so acknowledging that this is what we all want to do. How are we going to implement this? And this is sometimes the spot that is less well articulated in the literature. But we've done a little bit of work until we're going to share our work as well as the work of some colleagues that will help us better understand what are the key things you have to keep in mind if you want to implement productive failure into health professions, education.

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00:41:09.880 --> 00:41:19.669

Nicole Woods: So the first piece is about carefully selecting the problem solving task. So, as Maria showed you at the beginning, the way this works is, you have the students being challenged

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00:41:19.670 --> 00:41:43.279

Nicole Woods: to solve a problem with concepts that they haven't already learned, acknowledging that they don't know how to solve this problem. That's the whole point. It starts off from a position where you are confused, where you're unsure. You're starting off in a spot where you're supposed to be challenged. The key thing, though, is that you can't make the task or the problem so challenging that the learner gives up.

189

00:41:43.750 --> 00:41:58.099

Nicole Woods: So this is the tricky spot we want them to feel challenged. We are acknowledging up front. They're gonna fail. But we have to choose the problem carefully, so that they actually engage in the task and don't just give up before they ever get to the conceptual knowledge.

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00:41:58.310 --> 00:42:03.499

Nicole Woods: So this early phase of really carefully choosing that problem is critical.

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00:42:04.170 --> 00:42:33.019

Nicole Woods: The other thing to keep in mind is that you need to choose a problem solving task that actually allows for multiple solutions, multiple strategies, multiple problem representations. This isn't a game where the students just have to guess the right answer. It's not a guess what I'm thinking. Game, right? What happens is you want the students to

be able to really play with the problem. And there should be multiple angles in, because it's in the pursuit of those multiple angles that the students develop the rich conceptual knowledge.

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00:42:33.020 --> 00:42:40.679

Nicole Woods: We want them trying something, not quite getting it, trying another path, not quite getting it. And so you really have to choose a problem

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00:42:40.960 --> 00:42:47.499

Nicole Woods: that allows for that, and not every problem, in fact, allows for that kind of play with the concept.

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00:42:48.310 --> 00:43:09.120

Nicole Woods: The other thing is that we really want to be activating the learners prior knowledge in solving the problem. So when we showed you that semantic network that's really a representation of the knowledge that the student already has when they enter the problem, solving space when they enter the the instructional setting. Whether it's a specific session or an assessment setting.

195

00:43:09.570 --> 00:43:23.930

Nicole Woods: they do have some knowledge coming in. They're not a blank slate. And ideally, you want to be activating that knowledge. I want to activate their existing semantic network so that they can build on it. I'm not trying to create a new mini one every single time.

196

00:43:23.930 --> 00:43:47.689

Nicole Woods: The idea behind a semantic network is that it's supposed to be idiosyncratic. It's dynamic, it grows, it shifts. And our job as instructors is to create these tasks, create these learning opportunities that support that dynamic growth and cha nging and shifting in every student's semantic network. So we want to choose a problem that actually activates the learner's prior knowledge.

197

00:43:48.980 --> 00:44:05.849

Nicole Woods: The other thing we want to keep in mind, and this is one of the most important pieces, and it's the one that we've studied the most in our lab. The other work that I just showed you is largely drawn on the work of a new kapoor. But what we've been really looking at is whether or not the student needs to personally experience the failure.

198

00:44:05.850 --> 00:44:25.980

Nicole Woods: And I'll tell you why we highlight this as a really important question. It's because no one likes to do this right as much as really a colleague of ours always says, learning isn't fun, learning, fun. Things is fun. Learning, boring things is boring and learning hard things is hard, productive failure is hard. So often students don't want to engage in it.

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00:44:25.980 --> 00:44:29.810

Nicole Woods: And so we really need to understand. Well, do they have to?

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00:44:29.820 --> 00:44:51.959

Nicole Woods: What if I just tell you about the failures. What if I let you observe other students failing? Can I actually take some of that kind of personal struggle out of this and still get the benefits. And so we wanted to actually test this. And I won't go through the entire design, because, Maria, I had too many graphs, but I will quickly explain the general approach to the setting.

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00:44:52.290 --> 00:45:08.429

Nicole Woods: So we did a replication of that original study that looked at productive struggle versus direct instruction. And this time what we did is we have one group that experiences productive struggle exactly the same way. So they're developing. They're trying to figure out the formula for granting clearance.

202

00:45:08.460 --> 00:45:29.989

Nicole Woods: We have another group which doesn't have to do the failure themselves. It's called the Indirect Failure Group. And what we actually did in designing those materials is, we took the failed examples from our previous experiment that the students and the participants generated, and we gave it as instructional materials to the students in the indirect failure setting.

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00:45:30.290 --> 00:45:56.299

Nicole Woods: And so basically, they can see the the errors of their colleagues. But they don't actually have to personally experience the failure. We then have. Both groups go through the exact same design. They go through the instruct, the initial assessment phase, and they go ahead through the application and assessment and preparation, feature learning assessments. And what we saw in that study is that failure is only productive

204

00:45:56.300 --> 00:46:16.419

Nicole Woods: when the students experience it personally. So the students in our indirect failure condition. They did not get the benefits on that preparation for future learning assessment. Yes, they all got the acquisition. Yes, they could do the application, but they did not show the same gains on the production, the preparation learning.

205

00:46:16.440 --> 00:46:32.350

Nicole Woods: So what we've learned from that is, it's this active generation of the failure. That's what deepens the conceptual understanding. So it's really working with the students own semantic network and not simply exposing them to somebody else's that matters.

206

00:46:33.230 --> 00:46:52.619

Nicole Woods: So with all of this, if we pull the thread through the entire last few minutes with us together what we really wanted you to take from this. And what we hope you're gonna take from the entire time that you're at this conference is that curriculum design really should be guided by an understanding of the knowledge and capabilities of health professions as experts.

207

00:46:53.210 --> 00:47:16.039

Nicole Woods: productive failure really supports the development of conceptual knowledge, preparation, feature, learning and adaptive expertise. So that's really why we're advocating for this particular instructional methodology, acknowledging that there's many others, and we could also play with many of them in many ways. But the reason that we like this one, and the reason we're advocating it advocating for it as a disruptive innovation is because we know it has all of these benefits.

208

00:47:16.690 --> 00:47:41.900

Nicole Woods: but we wanna caution everyone that productive failure has to be deliberately designed and carefully, carefully calibrated. So failure for failure sake, not good. And also, we wanna acknowledge this is difficult to do. So. I think the next step, as you work through the implementation is to think carefully and work collaboratively to think about how to really make this work for your learners and in your context, while outside of our lab.

209

00:47:42.480 --> 00:48:05.649

Nicole Woods: So I think we've left some time for for questions, and we're hoping we can all chat about how we would play with this and how we would push this further. But I'll just really quickly thank a few folks. So we run a lab called the Excel Lab at the Wilson Center University of Toronto. And so that's all of our graduate students and postdocs, and we spend a lot of time just chatting about these things and pushing each other's thinking. And many of the students. Work was reflected in the the work that we described to you today.

210

00:48:05.893 --> 00:48:29.239

Nicole Woods: We've been funded from a number of different groups, and we listed all of them here on the screen, and we're gonna give a special shout out to Doug Buller, who creates our beautiful slides. So the one thing you cannot ask in the question. Session is how we made these slides because we did not. We do not know how to, so we can't tell you. But Doug makes the slides. He also has an amazing Youtube channel called, Say something where he teaches you his approach to academic presentations, and you're welcome to teach.

211

00:48:29.240 --> 00:48:41.219

Nicole Woods: Take a look at that and learn from Doug. There. We always like to have ongoing conversations. So we've included our email addresses and our link to our lab, and so we hope this is just the start of a conversation, and we welcome

212

00:48:41.220 --> 00:48:47.260

Nicole Woods: any sort of questions or comments that you have for us today or in the weeks and months moving forward. Thank you.

213

00:48:50.110 --> 00:49:15.210

Karen Abraham: Thank you. That was incredible. Just so excited. You know about your presentation. And to continue this conversation. So we are going to open it up for questions? To our 2 presenters. So if you're interested in asking a question or making a comment, raise your hand, and I will call on you. So our first is rain, Osborn.

214

00:49:17.780 --> 00:49:21.840

TELEPHONE_USER: Thank you very much for the presentation. Really enjoyed it. And

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00:49:22.330 --> 00:49:25.299

TELEPHONE_USER: yeah, I think that was gave me a lot of thoughts

216

00:49:25.740 --> 00:49:42.839

TELEPHONE_USER: one of the like questions I had just on your last point about having to experience the failure yourself. Does that also apply in like small groups, like, if you experience the failure as a small group of students does that still personally experiencing it? Yeah, how does that? How does that work.

217

00:49:43.160 --> 00:49:59.809

Nicole Woods: Yeah, we haven't tested that exact one, but we've done a little bit of that. I think if it's a small group activity, it would be fine. I think you just have to run we, and we've done a little bit of this in our curriculum. It will work as a small group, provided everyone is engaged in the activity. So we all know that the reality is in small groups.

218

00:49:59.970 --> 00:50:25.229

Nicole Woods: Sometimes. They're not really engaging in the activity. So somebody's doing it, and everybody's watching. That's not the same thing. Everybody kind of dividing up the activity and you do your part, and you do your part. And then we come together. That's probably not gonna work. But there's nothing about the fact that you're working in a group that necessarily means you can't experience the failure you can. You just need to make sure that everyone's actively participating and actually contributing to the activity.

219

00:50:27.540 --> 00:50:29.559

Maria Mylopoulos: 1 one thing sorry. Go ahead.

220

00:50:29.560 --> 00:50:31.220

Karen Abraham: No go ahead. Alright. Yeah. Sure.

221

00:50:31.220 --> 00:50:41.639

Maria Mylopoulos: It's also ensuring that the activity is a group activity. So I think that's a great way to avoid people carving it off and making it an individual activity. So there's been some work on that as well.

222

00:50:43.390 --> 00:50:44.920

Karen Abraham: Okay, Laura, you're up next.

223

00:50:45.720 --> 00:51:13.950

Laura Plummer: Great presentation. I have so many questions. So at our in our curriculum. I'm I'm from the Mj Institute of Health Professions. We do an integrated curriculum, so that all of the sciences and clinical stuff is all you know combined into these 4 week intensive courses. And you, having acknowledged before that. You know many of our faculty are their clinicians. They don't have a background in in education, and you know, I think about sometimes the

224

00:51:14.406 --> 00:51:20.093

Laura Plummer: one of the most challenging things I find in when students struggle and try and come up with

225

00:51:20.500 --> 00:51:42.460

Laura Plummer: their solutions to things is then the ability to make the connections, and I know you talked about that and I just wondered if you could speak a little bit more to that, because I find that. It's in our curriculum, too. It's quick. They go from 4 weeks to 4 weeks to 4 weeks is how they build those connections, and how we can really think about explicitly making sure that students are building those connections.

226

00:51:44.560 --> 00:52:02.539

Nicole Woods: Yeah, I can add a few things to let Maria chime in. I I think this is the part where it's really important to remember both halves of the productive struggle. So it's the struggle, and it's the follow up right? So it is having that time for consolidation feedback. And I think those are the moments where you have to make those connections explicit.

227

00:52:02.860 --> 00:52:17.470

Nicole Woods: That's the moment to just say, this is how these things are linked. Remember this thing we saw yesterday, and actually giving them the correct answer and giving them a chance to actually see how things put together. I think one of the biggest mistakes we make is educators, and probably it is because we don't have

228

00:52:18.080 --> 00:52:27.379

Nicole Woods: training and education is simply assuming and simply overestimating the ability of a novice student to see the connections because we see them.

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00:52:27.380 --> 00:52:46.009

Nicole Woods: So when you're an experienced faculty member, your experience based assigned, you see how these things are connected. The novice doesn't. And so that's one of the biggest mistakes we make is not taking the time to simply point it out. And sometimes it feels like again. If I go back to this idea of active versus passive learning, people worry. Well, shouldn't they just figure it out themselves?

230

00:52:46.010 --> 00:53:00.190

Nicole Woods: You've given them the chance to struggle the benefit of the activity. Learning wasn't just to struggle for the struggle safe. They've done the part of it that was supposed to

be active. They've experienced the struggle. Now it's your chance to just tell them and make the connections really, really clear.

231

00:53:01.120 --> 00:53:01.859

Laura Plummer: Thank you.

232

00:53:03.830 --> 00:53:21.063

Maria Mylopoulos: And and, practically speaking, and Nikki usually says this, she didn't this time. It. You can ask why? So some of the ways to get at some of the connections is is a simple why question? And remembering to not stop at the what questions which I think we all do, I mean? I do it, my kids, and what what do you do next? I'm like, oh, wait a minute. I should be saying why?

233

00:53:21.723 --> 00:53:27.099

Maria Mylopoulos: Because some of the times that will help make the connections much more explicit. To faculty as well.

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00:53:27.700 --> 00:53:53.810

Nicole Woods: Yeah, that's a really good point. I think. Sometimes we also think that that consolidation feedback has to be something really in depth. It might not be. It might be just taking a moment to a occasionally ask why questions, and that will tell you. Did they make the connection or not? And then you can just go from there. It doesn't have to be a whole long drawn out thing. These are things you can do quickly at the bedside. You can do them quickly in the clinic. You can do them in the hallway like it's not something that has to require a full on learning session.

235

00:53:56.280 --> 00:54:07.635

Karen Abraham: Okay, great before I let Gail ask a question. I do have to give a shout out to Gail Jensen. Gail is part of the Pti group, and she is the

236

00:54:08.010 --> 00:54:16.539

Karen Abraham: the she has a human rolodex. She has a human rolodex and when we were thinking about this as a topic.

237

00:54:16.879 --> 00:54:30.669

Karen Abraham: For this summit immediately. Gail was like, I know who we have to get, you know. And she immediately said, we need Maria and Nikki, and so we owe this incredible presentation in large part to to Gail. So thank you, Gail.

238

00:54:30.670 --> 00:54:53.330

Gail Jensen (she/her): I. I keep a folder with your papers Nikki and Maria so, and and they also have agreed that we're we're gonna get paper out of this to to get into our literature. So that was a great presentation is really good. I I I have kind of a 2 part question. One is all the health, you know. We're in the move of competency based education which

239

00:54:53.480 --> 00:54:56.869

Gail Jensen (she/her): one of the liabilities it could become too procedural.

240

00:54:57.574 --> 00:55:02.219

Gail Jensen (she/her): That's one of the risks. And and this this second.

241

00:55:02.360 --> 00:55:15.639

Gail Jensen (she/her): So what what do you recommend? And then the second piece is, we're we're moving to assessment, which would be Epas and trust more professional activities in the workplace. And it it seems like there's a lot of

242

00:55:15.870 --> 00:55:24.590

Gail Jensen (she/her): predictive failure in the workplace. That's it's guided because you want to keep your patients safe, because that learning is very robust, correct.

243

00:55:26.940 --> 00:55:30.030

Gail Jensen (she/her): so productive failure can occur in the clinic. Is that right? And.

244

00:55:30.030 --> 00:55:46.732

Maria Mylopoulos: Yeah, yeah. So we've done. We've done some work. In particular with colleagues from Denmark who are looking at this and and thinking about supervision in workplace settings. That would support the development of adaptive expertise and the productive failure. One really comes up

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00:55:47.060 --> 00:56:02.900

Maria Mylopoulos: sometimes when there's an actual struggle in the problem, solving that a student is experiencing, but also sometimes by creating struggle in a very routine situation, just by asking what if questions and making it hard? So you know, you can have a very routinized patient situation. Say, okay. But what if I change this?

246

00:56:02.900 --> 00:56:26.133

Maria Mylopoulos: And what would that? What would that? How would you then approach this? So basically taking simple moments when you might actually have more time? And making them more complicated. So so that's one of the one of the thoughts that we've had and some of the things that we've observed in in clinic settings. Which is, I mean, we're actually doing a talk at Amy about this Mickey case, you remember? And then

247

00:56:26.740 --> 00:56:31.240

Maria Mylopoulos: and then, in terms of the EPA's I I mean I and CD more broadly.

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00:56:31.850 --> 00:56:54.960

Maria Mylopoulos: I honestly think that that's it's a curricular modality that can be utilized in in ways. If we, if we pay attention to the mechanisms that Nikki has outlined so nicely, and also the pedagogical approach of of productive failure, I think we can do it in the structure of EPA's and competency based education. But we have to redefine what we're assessing. We have to redefine what we're observing, we have to redefine what we care about.

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00:56:55.253 --> 00:57:24.719

Maria Mylopoulos: So if competency based, education is really about mastery and reproducing superior behavior, and that's sort of the deliberate practice model. We're not

going to get to adaptive expertise just by doing that. But if we can try and make it about adaptive expertise, about those moments of uncertainty, and how people perform in those moments when they encounter something new, or when encounter something ambiguous, then I think we still could leverage some of the affordances of Cbe and EPA's, and all everything that comes with it to do that work. I'm not saying it's easy, but I think we can do it.

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00:57:28.640 --> 00:57:30.620

Karen Abraham: Okay, Julie, you're up next.

251

00:57:31.930 --> 00:57:54.972

Julie Tilson: Thanks. Thanks so much for the talk. Marianne Nicole. My name's Julie Tilson from the University of Southern California. My question is around learner reaction to this type of struggle. So I've had the fortune to get to try this a lot with my learners, and we tell them it's supposed to be hard. We make sure we have lots of processing time, so that they feel successful at the end.

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00:57:55.360 --> 00:57:56.370

Julie Tilson: And

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00:57:56.530 --> 00:58:04.140

Julie Tilson: it is, I think it is our my own struggle to have them feel good about the process right like.

254

00:58:04.488 --> 00:58:16.319

Julie Tilson: There's an expectation that you know you're going to teach me what I need to know, and I don't feel like I'm learning it right now, and I've seen some evidence around how to help students

255

00:58:16.390 --> 00:58:28.332

Julie Tilson: feel good about this and get the benefits of learning. But I'm just curious, like how much you all, especially when it's not one learning activity in a lab, but is, you know, a semester long course or a 3 year long program.

256

00:58:29.273 --> 00:58:36.130

Julie Tilson: Manage the student Angst with what ultimately has better outcomes with

257

00:58:36.555 --> 00:58:39.920

Julie Tilson: you know, trying to make it feel good in the moment.

258

00:58:41.010 --> 00:58:54.800

Nicole Woods: Yeah. And I think this is something we've talked about so many times that I'm just seeing some of the comments in the the chat. I think sometimes residency and fellowship programs in themselves are built around very many ways that failure that doesn't feel good

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00:58:54.800 --> 00:59:13.040

Nicole Woods: like. Often residents feel like they're just wandering around the board. They really want more support. This doesn't feel good. I feel like I don't know what I'm doing, and that's the worst feeling in the world. So whether it's on the board or in the clinic or in the classroom, no one likes to feel like they have no idea what they're doing here. And so I think the key piece with all of this is that consolidation.

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00:59:13.040 --> 00:59:16.062

Nicole Woods: So almost any of us can exist with

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00:59:16.500 --> 00:59:41.900

Nicole Woods: A momentary feeling of Oof! I'm not quite sure what to do, and that's what's supposed to happen with productive failure. But there is supposed to be an Aha! Later on there's supposed to be an Aha! Where now I get it, and it's okay. If the Aha doesn't come in 2 min, maybe it comes in a little bit, but we need to balance out those moments of kind of Aha and getting it. I feel like this is moving forward, and all of us have experienced that. I mean, we do this on our own teaching. We do this in our own

262

00:59:42.360 --> 00:59:56.600

Nicole Woods: graduate teaching or student health all the time. Oh, now I get it. Okay, fine. Now I get it. And it's those kinds of moments that we have to make sure there's room for and we also get to asking questions that's letting the students tell us when they're not getting it.

263

00:59:56.680 --> 01:00:24.989

Nicole Woods: So it's the making sure that we're checking in and confirming that they are actually learning things in the end. And it's not just them running around and experiencing

the failure and never experiencing those moments. It's our assumption sometimes that as long as you've gone through it you must have learned it, and everything's fine. We have to stop that and pick moments where we're going to actively investigate and make sure and check in that. People are feeling like their knowledge base is moving forward.

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01:00:25.495 --> 01:00:31.379

Nicole Woods: I think the other piece of that is the calibration of the task, though not everything. If we, if you make it too difficult.

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01:00:32.090 --> 01:00:35.850

Nicole Woods: it's gonna be just demoralizing and defeating, and nobody wants that.

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01:00:37.090 --> 01:01:05.140

Maria Mylopoulos: The only thing the only things I would add is that some of the work at hammer at ut, some medical school. We've also had some learners who've experienced the curriculum. Come back and talk to their their colleagues in the first and second years. And that's been very helpful, because they will say, Oh, we didn't really like it. But then we eventually actually, we understand. Now we see what what they were trying to do. And we did, well, and it's okay. The second thing is, we are is, we are a past scale school which actually does help

267

01:01:05.803 --> 01:01:23.729

Maria Mylopoulos: so that. That's that's sort of a big picture piece. But it does alleviate some of the stress of the specific little assessment that they're more formative now across the curriculum. And the third thing is having faculty also model. Some of that uncertainty and not knowing and struggling so.

268

01:01:26.570 --> 01:01:28.190

Karen Abraham: Okay, Michael, you're up next.

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01:01:28.963 --> 01:01:43.650

Michael Mckeough: If if the purpose of the productive failure is to produce the cognitive dissonance, that's a prerequisite for this new applied learning, is it not then really important to help examine?

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01:01:44.188 --> 01:01:45.819

Michael Mckeough: Why did it fail?

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01:01:46.260 --> 01:01:52.590

Michael Mckeough: Understanding, understanding why that strategy didn't lead to the successful outcome?

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01:01:53.010 --> 01:02:01.289

Michael Mckeough: And and is is your answer to how you get them to do that is to ask, why? Why do they think it failed.

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01:02:04.350 --> 01:02:16.389

Nicole Woods: So it can be both. So you can ask why it it can be asking why it, Bill. They can also also be asking why, the right answer is the right one, and that can kind of illuminate, or one of the many right answers, what makes them right?

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01:02:16.898 --> 01:02:38.660

Nicole Woods: So sometimes you don't want to spend too much time delving into what you did wrong, but you can show them. And this is where the conceptual knowledge piece comes in. It's when understanding why? The right answer is the way. Right? Answer. That's what helps you build the conceptual knowledge. So when you get to that time for telling, it makes it easier. And this is one of the things that people miss. If you don't do the productive struggle.

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01:02:38.940 --> 01:02:47.000

Nicole Woods: if I just give you the right answer off the bat. Often people miss the why they gloss right over it, because it seems obvious

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01:02:47.060 --> 01:03:04.749

Nicole Woods: we've all experienced that when an expert just tells you something, and you haven't experienced yourself. You're like, Oh, yeah, I get it until you try to do it yourself. And you realize actually, I don't understand this at all. I don't understand what's wrong. And so it's in that struggle and getting it wrong. When then they show you what was right. You're like. Oh, that's what I was doing correctly.

277

01:03:04.800 --> 01:03:08.089

Nicole Woods: And so that's kind of the the distance that you're trying to

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01:03:08.240 --> 01:03:09.050

Nicole Woods: crook.

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01:03:14.480 --> 01:03:15.590

Karen Abraham: Okay. Mary.

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01:03:16.270 --> 01:03:39.932

Mary Blackinton: Alright. Well, also, thank you very much for the presentation it as you were speaking, and I was thinking about what what I would do to put in place, to prepare students to engage in a different form of learning, right where where discomfort is capitalized upon. I thought about when I was worked in a problem based curriculum

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01:03:40.320 --> 01:03:48.059

Mary Blackinton: part of their orientation, I created a funeral for lecture-based learning, and we, symbolically went through this. Like

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01:03:48.060 --> 01:03:53.500

Mary Blackinton: all of the things. Oh, I'll miss falling asleep with a 3 h lecture. Whatnot?

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01:03:53.948 --> 01:04:03.359

Mary Blackinton: Similarly, I started a hybrid program, and we we really were very thoughtful about creating an orientation to normalize a new

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01:04:03.866 --> 01:04:22.620

Mary Blackinton: to to establish a new normal. And I know Julie started asking you about that. But have you thought of a way to create a mental model and orientation in programs or something, whether it's selected readings, etc, to help students understand the why.

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01:04:22.880 --> 01:04:26.130

Mary Blackinton: With this particular technique.

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01:04:29.680 --> 01:04:53.419

Maria Mylopoulos: I mean. The short answer is, yes. Does it work? I don't know that they that part is so. I mean, what we've tried to do is right from the beginning of orientation in in our medical school curriculum. I do a lecture, for example, and I've talked them through this. And why? Why this matters, and why our curriculum is is built this way, and why it's sequenced in these way, and why? And so we have them look at the weekly schedule and say, Okay, so where do you see that we've now

287

01:04:53.420 --> 01:05:12.650

Maria Mylopoulos: purposely put you in a cycle of productive struggle? We kind of call it struggle instead of failure sometimes. So how? How are you seeing the how? The design is informed by this pedagogy? And can you? And we do actually have them trying to actively generate ideas about where they're seeing it in their own curriculum. So to try and get them really engaged in it.

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01:05:12.650 --> 01:05:28.486

Maria Mylopoulos: I think it might help. I I don't know if it helps everybody. I think you know it. Covid hasn't helped, because that that lecture was poorly attended to. Be honest with you. When it was in person and mandatory it was a little bit easier. So there's that but I I do think that.

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01:05:29.130 --> 01:05:48.250

Maria Mylopoulos: they were trying to help them know. And we're providing online resources for them to know. We have. We're ensuring that our faculty are well versed and able to explain why they're doing what they're doing. And again, that somebody was saying in the chat that you have to think about culture. That's true. So not every faculty members on board. So that's a problem.

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01:05:48.507 --> 01:06:03.680

Maria Mylopoulos: So all of those pieces, I think it takes time. But we're still committed to it. So I think we're gonna continue to do it. We believe it works. We believe it. It helps our students in the long run, and our students in the long run seem to think it helps. So that's that's actually very reassuring.

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01:06:05.060 --> 01:06:13.820

Nicole Woods: Yeah, I think what those things might do. And again, they might, we say, does it work like again? The orienting task is what matters, so as long as they engage in the activity.

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01:06:13.990 --> 01:06:22.680

Nicole Woods: this will all work just fine. But in terms of providing them, these other supports, those that might be what they need to not give up.

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01:06:22.810 --> 01:06:33.750

Nicole Woods: And if that's the goal like that again, I think, understanding the mechanism, the goal of providing these other things isn't so much to alleviate all the distress and discomfort because you can't. But it might just help them keep going

294

01:06:33.770 --> 01:06:49.742

Nicole Woods: and not give up on the task, and that's me. Might be just the best you can do. I'm not sure there's a way to set this up so that everybody's running around loving it. I I don't think that's possible, but they certainly shouldn't walk around feeling like it's a failure all the time, like those are. We don't want that

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01:06:50.180 --> 01:06:58.649

Nicole Woods: We want people to walk away feeling like they are learning and it's just making sure that they continue to engage and not just shut down.

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01:06:59.370 --> 01:06:59.916

Mary Blackinton: Thank you.

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01:07:01.880 --> 01:07:03.160

Karen Abraham: Alright! Alan!

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01:07:03.900 --> 01:07:05.919

Alan Lee: Hi, thank you for your presentation.

299

01:07:06.327 --> 01:07:22.309

Alan Lee: You kind of mentioned that a bit about culture of the faculty. But could you talk a little bit about assessment of the learner, of maybe their culture, their age, maybe regional differences or international differences. What you we as faculty, be aware of. Thank you, Anna, thank you for the smiles.

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01:07:22.980 --> 01:07:47.840

Nicole Woods: So I think I think there's a lot of people like, I think it depends on where it matters where your learners are coming from. Like we, we're coming from the we're at the University of Toronto. This is a highly competitive medical school. The students who are coming from our program are coming from highly competitive programs. And often in the natural environmental sciences where they're used to getting the right answer. they're not used to multiple pathways, and they are they want to know. This

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01:07:47.840 --> 01:07:55.459

Nicole Woods: was what I was supposed to do, and they will say, Why don't you just tell me what the right answer is, that's the background that they're coming from

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01:07:55.460 --> 01:08:13.690

Nicole Woods: as opposed to. If you were bringing students who are coming from many of these background social science backgrounds where they might be a used to there no being a single right answer. And maybe a little bit more flexible on not always getting a perfect score like, I do think that there are some kind of prerequisites that you have to keep in mind.

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01:08:14.083 --> 01:08:36.809

Nicole Woods: But I also think it's more important to think about that in terms of again calibrating the task, thinking about their prior knowledge. There's not a lot you can do about like everyone can change their medical school admission or their Pt. School of mission and get in. Only, you know only art students. That might be something to consider. But at the end of it I think it's just providing the right support, so that people don't don't back down

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01:08:37.330 --> 01:08:39.300

Nicole Woods: a number. If you want to add anything.

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01:08:40.270 --> 01:08:48.798

Maria Mylopoulos: No, only that our rehab sciences, our Ptole and Slp is also extremely hard to get into arguably harder. So it's the same group. Students.

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01:08:51.120 --> 01:08:52.120

Karen Abraham: Okay, mark.

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01:08:52.790 --> 01:09:10.608

Mark Bishop: Hi, everybody! Thanks. That talk was awesome. Appreciate the opportunity to be here, and I have a question that's a little bit related to Julia's comment over here in the chat. I'm thinking about faculty, I think about myself a lot. It's my favorite topic, and thinking about

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01:09:11.350 --> 01:09:21.160

Mark Bishop: the the whole failure part. So 2 things with the culture. So if faculty don't see themselves as an expert who

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01:09:21.569 --> 01:09:41.280

Mark Bishop: doesn't struggle or shouldn't struggle, how? How can we navigate that part. And the second thing I like Julie's question here about, should we emphasize more in faculty, junior faculty training or new faculty training the failure struggle part. And would that help as they move to teaching students?

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01:09:43.370 --> 01:09:44.289

Mark Bishop: Do you think.

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01:09:44.880 --> 01:09:46.390

Maria Mylopoulos: I mean, I haven't

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01:09:46.600 --> 01:10:02.889

Maria Mylopoulos: so. Yes, I think so. I it's me my my short answer. So the the adaptive expertise piece of this is is, it could be a talk in and of itself, as could the integration piece making and all the, you know, levels of processing memory. So but what? I'm

313

01:10:03.270 --> 01:10:17.849

Maria Mylopoulos: the constructs of expertise that are still quite dominant, particularly in in spaces like health professions are still very much rooted in knowing and certainty and not struggling and not failing. And I think Covid shook that I do

314

01:10:18.119 --> 01:10:47.779

Maria Mylopoulos: and I think it should get hopefully, productively as we move forward. Because I I do think faculty need to start seeing themselves as adaptive experts, which means making room for not knowing and making room for struggling and making room for that as part of your expertise, so that it doesn't challenge your your feelings of self efficacy. And it doesn't bring about that feeling of, you know lack of resilience and burnout that that often is accompanied by those the idea that I don't know what to do. I'm not good at this. I don't want to be here. I you know those moments.

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01:10:47.950 --> 01:11:11.910

Maria Mylopoulos: So there's I think there's some room in faculty development to think about constructions of expertise, and how they link to all of those elements of what it means to be an expert in a particular domain. And I wonder if you're right, maybe a nice faculty development exercise that's Rick grounded in, you know, bringing some of your failures. And let's talk through them and think about how they're actually learning opportunities or what you were able to do in response to that

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01:11:12.302 --> 01:11:28.090

Maria Mylopoulos: might might not be a bad idea, but focusing on the knowledge rather than the affect cause. I mean cause. We come from the cognitive sciences. So I I would focus it on as a learning opportunity rather than managing people's effective responses to those moments which is a different thing and and can have its own space.

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01:11:31.180 --> 01:11:46.200

Nicole Woods: Yeah, I think that's also kind of related to Jennifer's comment in the the chat. I do think there's a piece here about kind of the dose of the failure. The struggle doesn't have to always be a really big, huge. Oh, my goodness, I didn't accomplish this like if you just think, even to the experiment we did.

318

01:11:46.210 --> 01:12:15.859

Nicole Woods: They were asked to try to figure out the formula. They didn't figure out the formula. Nobody was walking away crying like it was fine. They just didn't figure out the formula. We kept it moving. The point is that it's just doing a task we call it failure because you didn't succeed at the task. That's all. It doesn't always have to be. We're not talking about people failing courses. We're not talking about something that has to be really, really difficult and traumatic. And as experts, we all have experienced that we all know at the end, even though it doesn't feel good, we know, for well, we make mistakes sometimes we don't know the right answer sometimes, and we

319

01:12:15.920 --> 01:12:17.322

Nicole Woods: we do that

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01:12:17.840 --> 01:12:21.899

Nicole Woods: So it doesn't have to be really, really huge failure. I really wanna

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01:12:22.220 --> 01:12:30.439

Nicole Woods: push that sometimes it might just be a small activity that someone did. And they didn't quite get the answer, or just asking them a question that they didn't know the answer to.

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01:12:30.760 --> 01:12:38.219

Nicole Woods: That's fine. It doesn't always have to be something that would require management of the app. To be honest.

323

01:12:40.280 --> 01:12:41.820

Karen Abraham: Great. Thank you, Lee.

324

01:12:44.370 --> 01:12:49.802

Leigh Langerwerf: Hi, my name's Lee. I own a clinic in Northern California and

325

01:12:50.490 --> 01:13:04.029

Leigh Langerwerf: I I've had 82 interns in my career. I know that because I've had to number them because I'm getting older and can't remember when they were here anymore. But the intern who I have right now who we're gonna go see a patient in 20 min with

326

01:13:04.830 --> 01:13:11.690

Leigh Langerwerf: He's one of the first ones who came to me and said, You know, I'm really a kinesthetic learning. I really need to try it on patience

327

01:13:11.780 --> 01:13:16.500

Leigh Langerwerf: and and see it in the moment there. And and that's one of the first

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01:13:16.550 --> 01:13:18.780

Leigh Langerwerf: students I've ever had like that.

329

01:13:19.115 --> 01:13:30.969

Leigh Langerwerf: And I said, Okay, when we were talking about his learning strategy and everything, I said, Okay, then I'm gonna like, Give you feedback in the moment it's it might sound harsh. I might sound like a jerk. I I don't know but

330

01:13:31.367 --> 01:13:41.522

Leigh Langerwerf: that's just what we have to do to for you to learn to keep the patient safe and to make the treatment productive. And he's been great with it. I mean, just this morning we had a patient

331

01:13:41.820 --> 01:14:01.470

Leigh Langerwerf: who are seeing pro bono just because he went over his benefits and he still has a little bit more to do, and he was doing a treatment technique on him. And I said,

No, you need to move this tool this way so that you get the optimal effect here, and I mean the wrong student that could have been like, Oh, gosh! He's challenging me, and he's making me feel bad. Blah! Blah! Blah!

332

01:14:01.470 --> 01:14:23.419

Leigh Langerwerf: This guy just takes it head on and just rolls with it. And it's great. So I think, really, the big thing is knowing. And I have that conversation with all my students when they start. What kind of learner are you? Because that's important. So I can give you the proper feedback at the right time to understand this. So I think we have to be honest. We have to create that space for them to learn. But then we have to know how they learn best.

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01:14:25.500 --> 01:14:45.012

Maria Mylopoulos: Yeah, I I think that some of the some of the work we've done in our colleague Ryan Bridges, is really intrigued by this space. I I think I would call that co regulation of learning, and I I and I think that having a sort of shared idea of what exactly is going to happen here. And it isn't. Gonna so it's not about the learner preferences, only it's also about

334

01:14:45.280 --> 01:15:02.709

Maria Mylopoulos: both of you being on the same page in terms of what this learning experience is going to be about. And not everyone is going to be the same. But I think that that's that's a it's a good point. And you can't really leverage the learning experiences in clinical settings unless people are all sort of understanding what they're there to do together from a learning perspective?

335

01:15:03.130 --> 01:15:03.790

Maria Mylopoulos: Yep.

336

01:15:07.140 --> 01:15:08.110

Karen Abraham: Where? Am?

337

01:15:09.650 --> 01:15:34.669

Anne Mejia-Downs (she/her): Hi, thank you. Andy. Hea Downs from the College of St. Mary. So I use this concept of production productive failure successfully in teaching ekg. Interpretation, for example. But can you speak to the evidence and the application of using this concept for something less objective, like cultural competence or teaching about therapist patient interactions.

338

01:15:38.190 --> 01:15:53.958

Maria Mylopoulos: Nikki do? I can. I can start I I think that. So I I wouldn't point to a specific study. I would point to the the broader work that we've done around thinking about the different domains that matter. For expertise in in health professions.

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01:15:54.280 --> 01:16:22.679

Maria Mylopoulos: and some of the work in particular. That reminds me of what you're describing is in psychiatry, where you know you. You have a struggle, and you're struggling because it's truly an uncertain space, like the ambiguity, is a real feature of this particular clinical problem, solving space. And so you're on not really giving people certainty. What you're giving them is the best explanation that the knowledge can provide them at that time, and pointing perhaps, to some of limitations of that. So I don't think there's a problem with that. And the reason I say that is because

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01:16:22.690 --> 01:16:48.840

Maria Mylopoulos: that's also a reality of health care. That, you know, we can only do our best with what we have at the at a given moment in time, and that those explanations and those underlying wise might actually change the other thing that's come up in psychiatry is that those psychiatrists will say well, that there are different competing models of why, in terms of in terms of understanding some of the some of the ways that patients present. So maybe sometimes it is presenting some of that uncertainty as the answer, because that is the answer.

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01:16:49.177 --> 01:17:08.529

Maria Mylopoulos: So I I think not. Shying away from spaces where ambiguity is inherent. Is probably really important, particularly as we think about expertise in that way that makes that part of part of your expert practice. It's okay. I don't have to be certain here. This is not that space. So I think that feedback and consolidation can happen even without certainty.

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01:17:09.230 --> 01:17:09.830

Maria Mylopoulos: Yeah.

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01:17:10.390 --> 01:17:35.230

Nicole Woods: Yeah. And I think it also adds to what Maria was talking about in the presentation, too, I think what we've seen is that this idea of conceptual knowledge. It it it yes, it lends itself well when you're talking about Ekg diagnosis or developing a a formula. But we would argue, it applies equally well in the spaces that you just described. So there is a conceptual knowledge base to understanding collaboration that might be social justice.

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01:17:35.230 --> 01:17:47.974

Nicole Woods: Maybe the maybe the conceptual knowledge space is an understanding of power, like I think it still applies. So even if you were looking at some of these other concepts, I still think you would be able to play with it. It's just being flexible with what is, what is your goal?

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01:17:48.482 --> 01:18:02.139

Nicole Woods: What's the conce conceptual knowledge and what it is the procedural knowledge. And this is why we're saying understanding. The mechanism makes easier to design the tool, because you're no longer stuck with kind of the peripheral instantiation. And you could think about what am I really trying to get at.

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01:18:03.100 --> 01:18:04.199

Anne Mejia-Downs (she/her): Great thanks.

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01:18:05.931 --> 01:18:15.650

Karen Abraham: Thank you so much. Unfortunately, this is good to stay on task and to stay on track, and to be respectful of everyone's time. This gonna have to be our last question. So what a way to end with Susie.

348

01:18:16.800 --> 01:18:40.369

Susie Deusinger: You, and thank you both for an exceptional presentation. I'm Susie to Sam at Washington University, in St. Louis. I'm interested in unplanned failure as well as the ideas of productive failure which are essentially planned, and wondering whether you're rolling in the unplanned failure that occur in the clinical practice or in the teaching or in our lives.

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01:18:40.510 --> 01:18:48.319

Susie Deusinger: into that, as a as a way to extend the deep learning and development that adaptive expertise.

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01:18:51.750 --> 01:18:54.850

Maria Mylopoulos: I think that's a great question. I I I think

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01:18:54.980 --> 01:19:20.870

Maria Mylopoulos: you it's I would see it as an opportunity absolutely to to take that on plan failure and use some of the techniques that you would use in a plan failure, situation, to navigate it and to make it a meaningful and productive learning experience. Otherwise I think it runs the risk of not being a very productive learning experience, which is which is the the real issue there. I don't know that we've I mean in the clinic. Yes, absolutely unplanned.

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01:19:20.870 --> 01:19:29.899

Maria Mylopoulos: It really could happen all the time. And I think people are are navigating and and and working through that. But in classroom basis I don't think we've looked at that as much.

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01:19:30.235 --> 01:19:46.190

Maria Mylopoulos: I still think you could do it. I think you run the risk. If some of that calibration might be missing some of the psychological safety that it requires that setup

might be missing some of the co regulation. We're all here to do the same thing might be missing, so it would raise some challenges. Definitely.

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01:19:46.270 --> 01:19:48.420

Maria Mylopoulos: But again. It's better than leaving it

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01:19:48.770 --> 01:19:50.100

Maria Mylopoulos: unproductive.

356

01:19:50.320 --> 01:19:51.190

Maria Mylopoulos: So.

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01:19:52.420 --> 01:19:53.699

Nicole Woods: I think the way

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01:19:54.130 --> 01:19:54.930

Nicole Woods: to literally.

359

01:19:54.930 --> 01:19:56.920

Susie Deusinger: Learning activity that we develop.

360

01:19:58.550 --> 01:19:59.180

Susie Deusinger: No, go ahead.

361

01:19:59.525 --> 01:19:59.869

Nicole Woods: Tizzy.

362

01:20:00.210 --> 01:20:13.642

Susie Deusinger: I I was just gonna say, the learning activity that we've been that we had been using at least at Washington University is is an assessment of what really did. It has to be pre,

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01:20:15.520 --> 01:20:29.289

Susie Deusinger: You have to. You have to have faculty, be willing to disclose their own experiences in the clinical practice, and assess what it is that occurred, what the conditions were. Why, what did you feel like? What did the patient

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01:20:30.030 --> 01:20:42.819

Susie Deusinger: do or not do, and all the whole literature about disclosure and analysis of of unplanned errors, I think, could could really add to the work

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01:20:43.080 --> 01:20:45.740

Susie Deusinger: before they're in the clinic.

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01:20:46.390 --> 01:20:56.789

Susie Deusinger: so that they do have psychological safety, but they also know that we are vulnerable in air, regularly in our in our work.

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01:21:03.530 --> 01:21:19.712

Maria Mylopoulos: Yeah, we we have a chair of learner wellness heather, you know, Heather and Nikki. She's doing something like this where she's developing. She wants to do a podcast series, interviewing clinicians around these exact moments and and sort of normalizing all of this in in clinical practice.

368

01:21:20.030 --> 01:21:33.454

Nicole Woods: I mean, obviously one of the greatest things you could do is flip on his head. What people think they're supposed to do after an unplanned failure. So you know. Yes, you want to make sure that it doesn't happen again. You also want to manage

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01:21:34.036 --> 01:21:52.430

Nicole Woods: wanna manage the emotion of it. You wanna manage the clinical knowledge aspect. But I think it's keep in mind. That's also a time for telling like, just thinking of an unplanned failure as a time for telling and then restructuring what you're going to tell would be really key. It's an interesting way to think about it, for sure.

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01:21:54.780 --> 01:22:15.149

Karen Abraham: Okay. Well, I'm really sad that our our time has come to a close here. But thank you so so much, Maria and Nikki for an incredible presentation and for sharing your thoughts and and expertise with us. You know we are really really excited to have you had you here. So

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01:22:15.878 --> 01:22:21.740

Karen Abraham: thank you. And I am gonna reshare my screen here.

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01:22:23.350 --> 01:22:24.840

Karen Abraham: and

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01:22:27.820 --> 01:22:34.760

Karen Abraham: we're going to talk a little bit before we sign off here, just about what's what's to come.

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01:22:34.920 --> 01:22:35.885

Karen Abraham: So

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01:22:37.170 --> 01:23:04.979

Karen Abraham: again. Thank you so much. Nikki and Maria, you know they have they're gonna provide a handout for on this presentation, and that'll be posted on the Ptl. Website. Sometime in the next few days, and I'll be sending additional information in a post event

email, you know, with ways to access recordings of the sessions and and lots of materials. After the event.

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01:23:06.745 --> 01:23:23.319

Karen Abraham: Including in that is we did put out a call for platform submissions. We were excited to receive 5 different platforms. In the email that I sent you earlier this week and then recent earlier. Today, there is a link

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01:23:23.809 --> 01:23:48.279

Karen Abraham: to view those platform presentations. They are from our colleagues that are implementing, you know, innovative ideas around the 3 conference topics, you know, in at their institutions. And so I hope that you will take advantage of the opportunity to to review those platform presentations either before tomorrow's

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01:23:48.280 --> 01:23:53.490

Karen Abraham: or afterwards. To continue to further the conversation.

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01:23:56.487 --> 01:24:21.270

Karen Abraham: And so what are we? Up in for tomorrow. So we have a super exciting day plan for you. Tomorrow we'll start promptly at 11. Eastern we have 3 different topic sessions. Each one is structured. Similarly, the first one is around the application of the learning sciences to Pt. Education, the second one is around faculty, preparation, and development.

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01:24:21.270 --> 01:24:34.410

Karen Abraham: and the final one is around assessment practices. Each of those will start with some presentations to get us started. And then, if you've attended our sessions in our conference in the past.

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01:24:34.786 --> 01:25:03.373

Karen Abraham: We're gonna try something a little new. We really want to make sure that we hear from all the voices and engage as many voices as possible. So we're gonna do one of those uncomfortable things, you know, is we're gonna put everybody in breakout rooms and and we're going to give you some guided questions. Ask you to use a jam board. We're gonna stretch our technological capabilities.

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01:25:03.990 --> 01:25:30.029

Karen Abraham: and comfort tomorrow and then each small group will. Then we'll bring everybody back together, you know, for a large group discussion. After each of the the end of the 3 topic sessions. We will have a final sort of reflection and large group sort of broad discussion about all the themes. You know that we have explored throughout the 2 days and really hope to move towards.

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01:25:30.200 --> 01:25:39.400

Karen Abraham: you know, some individual and maybe collective action items. And so we hope that you know we we get there. This weekend

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01:25:41.332 --> 01:26:06.935

Karen Abraham: just a few reminders and ground rules. just when you're when you're in the waiting room. If you'll use your screen name, have it. Reflect your actual name, you know.

We are. Gonna try and make sure that, as before, we enter you that you know we recognize your name, and make sure that those are registered, and try to avoid any uncomfortable situations with people who don't belong.

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01:26:07.932 --> 01:26:13.910

Karen Abraham: in this in this session. I've had that happen. Unfortunately, you know where. Suddenly there was

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01:26:13.920 --> 01:26:43.259

Karen Abraham: random body parts, you know, in on the screen. So we're gonna try to avoid those things. Try to remember to mute unless you're speaking. We are gonna record all of the presentations. Tomorrow we will not be recording the discussion. And so those presentations will be again posted to the Pti website. We purposely are not recording the discussion because we want to make sure that people feel comfortable. And because we're gonna post it, you know.

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01:26:43.670 --> 01:26:47.779

Karen Abraham: Really sharing, you know their, their true thoughts and ideas.

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01:26:49.720 --> 01:27:13.059

Karen Abraham: just mentioned that. Again, we're gonna use the same procedure, you know, during the big group discussions tomorrow to raise your hand to get in the queue, to speak again. Everybody's been respectful. You know today and in the past. But just we ask that. Speakers limit their responses to 2 min. Just make sure that all those that want to speak have that opportunity.

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01:27:13.442 --> 01:27:37.527

Karen Abraham: And we are gonna like we did today turn off the chat during the speaker presentation, so that everyone gives those speakers who have prepared presentations. Our full attention. And we also ask that, that are we? What we really want? Is everyone to actively participate in the conversation as much in the live conversation as much as possible.

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01:27:38.224 --> 01:27:52.070

Karen Abraham: The chat can sometimes take on a life of its own, and and sometimes it's hard to engage in the chat and in the live conversation. And so, you know, we encourage everyone to engage in the live conversation as much as possible.

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01:27:52.692 --> 01:28:12.210

Karen Abraham: And like, I said, at the end of the day we will, you know, have a summary session where we'll try to do some take homes and really hopefully moving to some some action items. Again, whether that's individually for you to go back to your institution, you know, implement some strategies, you know, or if there's some collective action. You know that we can identify from the group

392

01:28:13.730 --> 01:28:26.810

Karen Abraham: alright and we also, before we want to sign off, want to thank rehab essentials. They have generously sponsored this year's event, and so we are very thankful to rehab essentials for their support.

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01:28:27.620 --> 01:28:29.090

Karen Abraham: I think that's it.

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01:28:32.650 --> 01:28:34.190

Karen Abraham: Well, we'll see you tomorrow.

395

01:28:38.210 --> 01:28:38.760

Mark Bishop: Buying!

396

01:28:38.880 --> 01:28:41.940

Karen Abraham: Goodbye. We'll see you tomorrow at 11 Am. Eastern.