



Learning Isn't Content with Dr. Tessa Forshaw

Leading Learning Podcast
Transcript for Episode 480

Celisa Steele: [00:00:02] If you want to grow the reach, revenue, and impact of your learning business, you're in the right place. I'm Celisa Steele.

Jeff Cobb: [00:00:10] I'm Jeff Cobb, and this is the Leading Learning Podcast.

Celisa Steele: [00:00:16] Learning isn't just content. It's a neurobiological process. But, according to our guest, the way most workplace learning is designed doesn't recognize that reality.

Jeff Cobb: [00:00:27] Our guest in this episode, number 480, is Dr. Tessa Forshaw, cognitive scientist and faculty member at the Harvard Graduate School of Education, where she studies how people work, learn, and create in the flow of their work.

Celisa Steele: [00:00:42] In our conversation, Tessa walks through five principles grounded in science—from the fact that learning is biological and social to the importance of situated learning, productive effort, and transfer. And she explains what each principle means for how learning experiences should be designed.

Jeff Cobb: [00:01:00] You and Tessa also explore why learning businesses may have some surprising advantages when it comes to applying these principles and where to focus if you want your programs to make a real difference in how learners perform on the job.

Celisa Steele: [00:01:13] Yes, and Tessa makes a strong case for metacognition as the single most impactful thing you can build into any learning program to improve retention, durability, and transfer.

Jeff Cobb: [00:01:25] If you design, deliver, or lead learning experiences, and you want to better align what you do with what the science actually tells us about how adults learn, then this conversation with Dr. Tessa Forshaw is for you.

Celisa Steele: [00:01:44] You're the faculty chair of the Workforce and Workplace Concentration at the Harvard Graduate School of Education. You're also directing the Workforce Learning and Innovation Initiative. Tell us a little bit about that initiative and your role with it.

Dr. Tessa Forshaw: [00:01:59] Education schools have spent decades studying how people learn, and there's an incredible amount of expertise at HGSE amongst my colleagues who studied education and learning for such a long time, but rarely has that expertise been pointed at workforce learning. It's not like you turn 18 and don't continue into a university, and then, magically, your brain learns differently and all the principles change. That's not true. This initiative is focused on how do we make sure that we're extending and applying all the science

that we know about how people learn that is deeply embedded in HGSE into this very high-priority population. There are three streams associated with the program. The first is this idea of preparing—a concentration in the master’s program in workforce and workplace learning. It’s like a major for students in the master’s program, and it’s about how do we prepare the next generation of workforce learning leaders.

Dr. Tessa Forshaw: [00:03:01] The second component is what we’re calling “equip,” and that’s focused on professional certificates in workforce and workplace learning. We recently did the first cohort of that earlier in the year; we have another one coming up in July. Again, that’s the first type of workforce-learning-focused certificate at HGSE. So that’s very exciting. And then the third component of the initiative is what we call “discover.” That’s about applied research partnerships with organizations, where we partner with them to do typically design-based research in real organizations, in real contexts, focused around real problems of practice. We apply research methodologies to uncover what’s working, what’s not, and then share that with the field.

Celisa Steele: [00:03:48] I’ve read that you’ve asserted that workforce learning still doesn’t really match what we know about how people learn. I would love to hear what you see as some of the biggest mismatches between that science of learning and what we know and then the way that adult workers are commonly taught or the way we design learning for those adult workers.

Dr. Tessa Forshaw: [00:04:13] I love that that’s what you’ve gleaned from my work. I definitely think that. When I talk to a lot of learning leaders, learning is often discussed as content delivery. They will talk about learning as the content that is being created or the event that is being held. But it’s really important that we remember that learning isn’t content. Learning is a neurobiological process, and that process is influenced by chemicals in our brain and hormones in our body that are shaped by the environment and the context that we sit within. When we understand learning in that lens, it both opens up where learning can happen and what it looks like, but it also puts the responsibility of establishing the conditions that create and foster those positive neurochemicals and hormones to incite learning and alleviate the ones that don’t. And it puts that responsibility on L&D teams or on organizations providing learning experiences in a way that it hasn’t typically been considered before.

Celisa Steele: [00:05:27] You were saying, before we got started, that one of the things that you talk about in the certificate are five principles for the future of workplace learning. Could you outline and briefly explain those five principles?

Dr. Tessa Forshaw: [00:05:43] Yes, I absolutely can. The five principles that we talk about start with this idea: Learning is biological. We understand that behavior change comes from changes in the mind, which comes from changes in the brain, which comes from changes in the cell. I’m sure you’re familiar with those games that were really popular about 10 years ago, where they were all like, “Neuroplasticity!” There was a lot of fake going on there, but there is a seed of truth or a grain of truth, and that is that neuroplasticity is the foundation of learning. The ability for us to create a new neural pathway between two neurons is the foundation of all learning. When we understand that the cell influences the brain, which influences the mind, which influences behavior, that helps us think about how we can create learning in organizations,

especially because so many workplaces are full of things that make that biological process harder. They're full of cortisol. They're full of cognitive overload. They're full of constant context switching. They're full of being triggered and having your amygdala hijacked when stress takes over, and your brain doesn't operate at its peak performance anymore. When we understand learning is biological, we can also start to understand that learning at work is very rarely about effort or attention, and it's much more about the conditions in our bodies, in our environments that are blocking this cellular change from happening. So that's one component.

Dr. Tessa Forshaw: [00:07:16] The next principle is that learning is social. We know from decades of research on expertise development and the nature of learning that people become experts by being around people who are further along in that area of expertise. Having people more experienced share mental models, expose their reasoning to you, and foster that traditional romantic idea of apprenticeship that we have from hundreds of years ago. So learning is very social, and it happens in relationships with others. The third principle is that learning is situated. This is focused on the idea that pulling people out of work to go and learn is a tough design choice because the brain encodes skills along with the context in which they are learned in. A lot of people don't realize that our environment plays a huge role in the retrieval of learning because we associate different knowledge and skills, practices to the physical environment in which we learn them. When we're in those environments, they can help us cue it forward. If we learn something in an abstracted classroom in a beautiful L&D center that's off-campus, and then we're supposed to go back and apply it on a factory floor, that's going to be very hard because the environment isn't cueing that knowledge that we've learned to be brought forward, and those retrieval pathways aren't yet strong because it's new knowledge.

Dr. Tessa Forshaw: [00:08:55] The fourth principle is that learning takes effort. We talked a little bit about learning being a biological process and there being the creation of a pathway between two neurons. If you could imagine a bank of sand, and you have a stick at either end, and you want to create a pathway between the two of them that stays, you have to really dig into the sand and put some effort in there. That's the same in your mind—you actually need effort to forge that pathway. Learning takes effort. Being easy and super fun isn't necessarily what we're going for. We're going for experiences that provide opportunities for effort. Finally, that learning has to transfer so that the point of learning is that it can be applied in future contexts. That means that when we're—especially today, where those future contexts are often ambiguous, and we don't know how they're going to change—that means that when we think about learning, we have to think about designing opportunities to expansively frame all of the different ways things could be applied, and, again, that's part of helping that encoding in a way that's much easier for us to retrieve it at that moment of need. So those are five principles.

Celisa Steele: [00:10:10] As I've shared with you, most of our listeners work in what we call "learning businesses," and so they are all about trying to support learners, and they want to help them improve on the job, at work, as professionals, but they don't tend to have direct access to their learners on the job. I'm wondering how these principles might inform how folks like that, who have a little bit of a distance between them and their learners' workplaces, think about building courses, creating programs, other learning experiences. Are some of those

principles more or less relevant when thinking about learning businesses rather than corporate L&D?

Dr. Tessa Forshaw: [00:11:01] That's a great question. In the first version of the program, we had some people from learning businesses, as you describe them, and, in the discussions that I've had with each of our participants since, one of the things that came up was particularly this first one of learning being biological. When you have a separated environment, and that is just the reality of your business, that's a huge win for creating and controlling the culture of the environment in a way that can support the biology. For example, you have the opportunity to pace the experience in such a way that assumes your learners are coming in tired and distracted. You have the opportunity to alleviate some of that time pressure to provide them with space, to make sure that there's food available to them because, if you're hungry, your body releases hunger hormones, and hunger hormones shut down neuroplasticity. You have these sorts of opportunities to help lean into the design of the biological requirements and control those in a way that's very difficult in a team meeting on the go at work, where the manager is trying to teach somebody to support that.

Dr. Tessa Forshaw: [00:12:16] With the relationships component, you also have a huge opportunity to create environments of pure accountability, of bringing in experts who are not people that they might otherwise be exposed to, who they can build relationships with. There's still a lot that you can do around the social nature of learning and make it about learning between humans and with humans. It doesn't have to be learning with the person who sits next to them. So there's a lot that can be done there.

Dr. Tessa Forshaw: [00:12:47] I think the situated component definitely is one of the things that comes up as a little more challenging. When I was chatting to this participant, what we spoke a lot around was how do you think about providing opportunities to map to practice or providing opportunities for them to do activities. They might have something that they take back and give them the instruction of "Do this in your work environment and notice...." Encourage them to be metacognitive and notice, "What about the environment is important to this particular activity that we're learning?" And then bring that back into the class and into the discussion. It's not situated in the sense that it's physically happening in a space that it occurs, but the situated nature of where the skills and the learning need to be performed is inherent in the discussion and is part of the consideration so that you're still building associations to some of those features and realities. That was interesting.

Dr. Tessa Forshaw: [00:14:00] The last one, effort is the same. But learning being situated and being needed to transfer can often be in tension with each other. Because, if something is situated, it's easier to cue forward in the moment of performance in which it was designed to be used. But that makes it really hard to dis-embed it and transfer it to a future context that you don't yet know. Does that make sense? If I learn something on my job in this specific context, and I'm applying it all the time because it's deeply cued by the physical environment that I'm in, that can make it harder for me if my job gets disrupted, and I have to take on a brand-new role. It can make it much harder for me to understand how those skills could apply in that new context where they're not being automatically cued. External learning organizations have a big role to play in the transfer piece because they're not as burdened by the situated, which is

important (as we've already discussed) but in tension, and they have the opportunity to expansively frame.

Dr. Tessa Forshaw: [00:15:03] What I mean by that is to help learners learn a thing and then provide them examples of all the different kinds of places and contexts that these skills functionally would have relevance. A great example of that is, if you're teaching coding, instead of bringing in the alumni who's the software engineer in the code that you taught—which is often what we see with coding boot camps and things like that—what about bringing in the five other alumni who didn't go on to do anything specifically with being a software engineer but instead are using the skills that they learned in this program in diverse ways? They've used the idea of logical thinking and syntax to design their own personal training business, or they've used coding to help them expand their skill set and enter into marketing automation at work. They've not become the exact thing. And so, as an organization who is not as proximate to where the learning is happening, that's a huge asset.

Celisa Steele: [00:16:13] Transfer is something I did want to talk about because it is so important, and you gave some great examples there about maybe not showing how someone can use this learning experience to achieve the more expected goal of a coding boot camp (become a software coder) but also how the way you begin to think when you're going through that boot camp can apply in other situations. Do you have other things that you've learned about what helps adults transfer learning into those new roles, new projects, new performance situations?

Dr. Tessa Forshaw: [00:16:48] Great question. I've come off a six-year focus of learning transfer. I went down a very deep rabbit hole. I want to share a little bit about my own journey with that and how it changed how I think about transfer change if that's okay. When I went into this, I understood transfer as being you learn something, and then you're able to immediately apply it. Often that learning happens in a classroom or a formal environment of some kind, and then the next day or whatever, you can apply it. That view of transfer has been historically what we've had for about 100 years from very old scholars. Thorndike has a theory called "common elements"—that if something had common elements, you could transfer it to it. And they would do these tests where you would put a student in a learning environment that was like a math class, and then the next day they could apply the principles of the math class to a novel problem in front of them. Lo and behold, this didn't work. There've been entire books written about "transfer on trial, "the elusive transfer doesn't exist"—these kinds of headings. I came to realize that's because we have a very narrow view of what transfer is. And we were measuring transfer as the person only being able to apply exactly what was given to them 10 minutes before. And we were also, in that scenario, assuming that the thing that they were taught 10 minutes before, they were taught well, which isn't necessarily true.

Dr. Tessa Forshaw: [00:18:34] What I started to notice, as I stepped back from transfer in this sort of view, was that people are able to transfer in things to approach novel problems that aren't necessarily the thing that we taught them. There was this study done by Dan Schwartz—who's the current dean of the Graduate School of Education at Stanford—about 20 years ago, and there's this one paragraph in it that is so illustrative of this, where they were trying to teach students about bald eagles. They then got them to do a project on bald eagles. And what they noticed was that, while students didn't use exactly what they were taught, they were drawing

from parts of knowledge that they've acquired throughout their entire 13 years of schooling to solve this problem. Of course they are. We don't have control over how somebody's neuro-architecture looks, about what cues forward what knowledge for them. But what we can do is make sure that we help people to surface and use what knowledge they already have, to look at them as assetful, that they already have a lot to work with, that they've learned in their life, in their professional life, in their schooling, in their personal life, and to bring that forward to approach novel tasks that they have never done before. That's how I started to change my view of transfer to be much more about how do you bring forward whatever it is you have to approach a novel task and to start to solve it.

Dr. Tessa Forshaw: [00:20:12] You might not get 100 percent of the way, but you're definitely going to have some sort of first principles, some basic knowledge or analogies from your life that you can bring forward that are relevant to get you going. And so, through that line of inquiry, we decided to do a study that looked at a place where this novel role transfer happens with great frequency. That's because sometimes, when we're looking at something that's elusive, as I said, it's good to go birdwatching—you go to the habitat where you know the bird will be to study it, rather than walking outside and looking up and hoping to find that bird in your sky. That's what we did. We studied 75 consultants in the early parts of their career, where they do different jobs in one year, one person. It'll be like, "I'm doing quality assurance testing for an Oracle software implementation. Now I'm doing a due diligence assessment for a private equity takeover of an online retailer. Now I'm doing a go-to-market strategy for a knee reconstruction device. Now I'm helping with the change management plans for the leadership office for an M&A of a company." Really different jobs. To anybody outside of consulting, you'd be like, "Don't you need entirely different degrees to do those?" But one person is doing all of these. We looked at how is it that they do them to a reasonably successful level, and there are no formal training interventions in between each one?

Dr. Tessa Forshaw: [00:21:57] What we found was that there were a series of individual practices that these consultants often demonstrated. There were a series of environmental features that were present in the two different consulting organizations that we looked at. And there was also a set of managerial practices of the new manager, that was on the novel role. We took all of those, and then we designed interventions focused on the individual practices and the managerial practices. Ultimately, what we found over the series of design-based studies was that only the managerial practices had a predictive outcome on if a learner was able to successfully transfer knowledge to a novel project and novel task, as measured by their managing director's evaluation of their performance and time-to-competency in their novel role.

Dr. Tessa Forshaw: [00:22:55] First, I would caution that we're talking about elite consultants who probably went to elite universities, and so that often means that some of the effect of the personal practices might have been negligible for us to detect because they were already all performing them to such a baseline, based on who they are and how they got there. Whereas, if we intervened with the personal practices in a different context, my question is would we also see that as predictive? I don't want people to take away what I'm saying as individual practices around transfer don't matter; it's to say that, in this context, we didn't see that as being

predictive. But the manager's piece is something that is interesting, especially for learning businesses like you're talking about and the audience here, because they don't always have control over what the manager does. But the manager plays a hugely outsized role in a learner's ability to transfer and apply learning on the job.

Celisa Steele: [00:24:05] That's interesting. Like you said, it's a potential challenge, but it does suggest there might be some interventions or resources that could come along. "Okay, here you are as an individual coming to this course, this conference. Here are some materials you might take back and share with your manager when you get back," perhaps to prime that manager to be most supportive of that learner applying and transferring knowledge.

Dr. Tessa Forshaw: [00:24:31] Yes, and one very specific behavior that was outsized in the set was the manager's role in helping them connect prior learning to the novel context. They would say things like, "Hey, so you know how you went to that conference, and there you did that whole session on"—I'm going to make something up here—"how to structure unstructured data to make it effective in AI models? Some of those things could be really interesting to how we're approaching this problem. I'd love you to go away and explicitly do that mapping." By helping them, by inviting them, firstly, to do that (again we talked about cueing), the manager is then cueing the learner to start going, "Oh, I have to go back and retrieve all of these things and bring them here, and now I'm going to start making connections between this thing that I'm doing and those prior things that I've learned."

Dr. Tessa Forshaw: [00:25:29] Remember, learning is about creating a connection between two neurons. That is one really important practice as a manager: taking responsibility for guiding the learner to think about how the things they learn in x context apply to the specific task that you're doing, and sometimes that also means helping them with that reasoning. That might mean having them do that thinking, bring it back, and then engage in the reasoning with them to help them get it right. Remember, we talked about how we transfer prior learning—sometimes you're only going to get 80 percent of the way there based on everything that you already know. So the manager is quite important in making sure that we don't have what one of my colleagues calls "overzealous transfer," where you are overexcited, transferring forward things that shouldn't apply to this novel context.

Celisa Steele: [00:26:23] It's also making me think that there's the potential for a learning business that would have, for example, a history of what a learner took in terms of courses or attended conferences, at least with that learning business. There would be some potential for cueing based on, "Hey, you remember when you took course x last year? Think about how that might apply now in this current course." So it does seem like there's some potential. It's not the managerial role per se, but some of that cueing could still potentially happen.

Dr. Tessa Forshaw: [00:26:53] Yes, absolutely. For my own teaching practice, a lot of this work changed how I teach myself. I had that tough moment in the mirror where I was like, "Oh, some of this needs to change based on these findings." And one of the things that I changed was in every class—I know that this is hard because we're all time-pressed—but I make intentional space of three or four minutes of "Okay, today we're going to be talking about creative problem-solving." I teach a lot of skills that are creative and cognitive skills. "We're going to

talk about creative problem-solving. I want you to spend the next three or four minutes bringing in what do you think creative problem-solving is? Where are some examples of creative problem-solving? Where are some examples that you've seen of problem-solving that wasn't creative? How are those two things different?" What I am doing in that moment is helping them transfer in everything that they know from it doesn't matter where, like I said—it could be they learned creative problem-solving in an improv class that they did at a mother-daughter event at their kids' school. It doesn't matter where it comes from.

Dr. Tessa Forshaw: [00:28:04] Bring in what they know and help them start to reason through it. And so they're starting from this place of "I already have some things that I know about what we're talking about." But the other benefit is, then, as we start to engage in learning over this course of this experience, they are more able to connect the new knowledge to existing knowledge, which means it's going to be more durable and easy to retrieve because the more connected it is and the more associated with existing retrieval pathways it is, the easier it is for us to recall. That's a massive win for the durability. And then the second piece is that, if there's anything in their existing mental model that I want them to unlearn, I'm bringing that forward so that this new knowledge can help with that reorganization. And it means that, if they ever default to the old way of thinking that I needed them to unlearn, this new knowledge is also attached to it. And so they might go, "Oh, I need to do it—actually, no. I've got to do this other thing too. That's right." So it's a really helpful practice that I've extrapolated.

Celisa Steele: [00:29:23] I want to go back to the principle around the role of social relationships and learning. Those can be more formal mentorships or more informal relationships with others who are doing similar kinds of work or thinking. I am again thinking about our listeners who primarily don't necessarily have access to mentors on the job for those learners. But what can they still do on the social side that might tap into some of those relationships and the way that they can help make sure that the learning gets to take advantage of that importance of the social role in how we learn?

Dr. Tessa Forshaw: [00:30:02] It's a fascinating thing to me that, in corporate learning and learning businesses and stuff, we talk a lot about cohort and community, but sometimes we don't recognize that it's not nice and makes the environment great and good for a network, but these sorts of features of cohort and community make learning more durable. Because, when we learn things through a story that someone else tells us, that starts to engage our ability to have empathy. Empathy is one of the most effective neurological experiences that we can have to help us reorganize preexisting mental models. We tend to be able to do that much more fluidly through empathy than in other ways, without empathy. That's one example, but there are so many. The other things are, by hearing different people's ways of speaking and things like that, we start to be able to engage in understanding if there's a language and a discourse of the community that we're trying to be part of and to speak in their terminology. Those things happen socially and informally. It's a whole discipline of literature. It goes back hundreds of years—Vygotsky really believing that learning was this socio-relational process, and it's very true.

Dr. Tessa Forshaw: [00:31:29] I would encourage organizations to think about community, cohorts, and things like that, not in a way of "How do we help them network, or how do we

make sure that they have a WhatsApp group to organize drinks?” but to think about the design of those as part of learning and essential to learning. Sometimes that means needing to facilitate and model what those interactions need to look like at the beginning. That can mean giving buddies within cohorts that are around affinity but helping them by structuring the beginning of that relationship so they get used to it and get good at it. It can also mean simple things like providing individuals opportunities to share their mental models, even if it’s not in an effort to be buddied up. But you’re in a classroom, and everyone’s sitting there, and you say to someone, “I’d love it if you could share your mental model of how you’re thinking about that thing you described,” and, if they do that, then other people are engaging—that’s a socio-relational aspect of learning. There’s a lot that can be done but thinking about it as a necessary requirement for learning and as a design principle in that way. As I said, the community and cohort piece is really important. It changes what you come up with. It changes how you think about those experiences in your program—how you value them, the time you give them, and the weight you give them.

Celisa Steele: [00:33:10] That makes a lot of sense. I feel like sometimes we have, as you said, this idea of cohorts, but what it comes down to is this group of people who happen to be going through the class at the same time. But, if you leave it only at that, then it’s not doing the work of the cohort. Thinking about how to more intentionally create those meaningful exchanges so that one peer can hear from another how they’re thinking about a particular situation or topic is incredibly powerful. I underline what you’re saying about making time for that and making sure that it’s part of the design.

Celisa Steele: [00:33:45] I’m thinking about listeners who are looking to improve their workforce-relevant offerings. They have courses where they are trying to make their learners able to do better on the job, in the profession. If you’re thinking about what they might be able to do in the short term to better align their programs with what you know about how adults learn at work, what might be a suggestion that you encourage them to think about or try out and test?

Dr. Tessa Forshaw: [00:34:15] I would be encouraging them to make time in their offerings for learners to be metacognitive. Often we expect learners to do that separately, or we know it’s nice, but we try to make them do it at the same time as being cognitive. You can’t learn something and have cognitive attention to that thing you’re learning and be metacognitive about it at the same time. It’s not possible. So making intentional moments for learners to think about things like, “As you enter this experience, what are strategies that you find helpful to your learning and your attention? What do you need to do right now to adjust your environment to make sure that you’ll show up in a way that meets your goal for this session?” Even things like. As you’re in the middle of the learning environment, inviting learners to surface things that are very clear to them and feel very crystallized and stuff that still feels very uncertain and that they don’t feel like they have a complete understanding of yet. Pausing in the middle to help them do that and help them come up with strategies for how they might adjust how they’re thinking, et cetera. If they’re holding on to something strongly, which happens a lot with adult learners—we have very deeply automated or routinized perspectives

sometimes, and helping them notice when that's as a result of a bias that might be inhibiting them to learn.

Dr. Tessa Forshaw: [00:35:51] What I mean by bias, cognitive bias. For example, we as humans succumb to dozens and dozens of cognitive biases every day and for good reason; they help us use less metabolic energy. So there's a really good reason for them. We don't want them to go away, but it's good to notice them. One might be like, "Are you resisting the new principles that we're teaching right now? And is that coming from a place of genuine critical thinking and skepticism, or is that coming from a place of status quo bias? Is that because right now you're resistant to this because you feel like the way it's done, the way it's always been done, feels comfortable, feels easier, feels like it would take less effort, and that's inhibiting your ability to engage in what we're discussing right now?" Inviting these conversations into learning experiences is essential because the data on metacognition is unambiguous, in that it results in better performance, better durability, better transfer of the skills. It's the single thing that I would do if I was trying to improve my programming and improve the learners' ability to apply what they're learning in my context to work.

Celisa Steele: [00:37:17] We always love to ask folks who come on the Leading Learning Podcast about their approach to their own ongoing learning. I would love to hear from you if you have specific habits, practices, or sources that you use to continue to grow professionally personally.

Dr. Tessa Forshaw: [00:37:34] I live in this funny tension sometimes where I know there are things I should do, and then I catch myself not doing them, and then I get mad at myself—disaster spiral. But something that I personally find helpful, every so often, as an educator, is to sometimes intentionally go out and learn something new and to practice some of the things that I use as educational tools for others, or instructional tools for others, myself. For example—this is very esoteric, I apologize—I'm currently learning to become what's called a "champagne specialist," and that's because I was like I'm going to go learn about something that I don't really know a whole lot about that seemed like it would be fun. And I was looking for something that had a very social kind of component to it. I do try to practice these intentional moments of metacognition myself.

Dr. Tessa Forshaw: [00:38:32] I try to think about regulating my own learning. Was I paying attention in that class? What was bothering me? How will I change for next time? If I come in next time after having also been tired and frustrated, what are some steps that I could take to adjust how I'm showing up? I try to interrogate that. In addition to being really good as being a lifelong learner, to have really good awareness of how you learn as a person. I also think it's important—from a human-centered practice—to remember what it means to be a learner when you're an educator and to notice what's tricky, what's easy, what instructional moves you've been doing for a long time that don't work, that do work. So it can be a good practice.

Celisa Steele: [00:39:32] That's an excellent point about your own continued learning, especially if you are someone who spends a lot of time educating others, to put yourself back in the shoes of those folks you're working with. It gives you that empathy, which—you were talking about earlier—is such an important part of how we learn and the neuroplasticity piece. We've covered a bit of ground in our time together today. If you were to stress a point or two points or three

points for listeners, what is it that you are hoping they take away from listening to our conversation?

Dr. Tessa Forshaw: [00:40:07] Especially for folks who work within learning businesses, I would be remembering that of the five principles, even though one of them is situated, don't walk away from this saying, "Oh, well, we can't do that." Remember that you actually have a superpower in terms of your ability to control for the neurobiology, in terms of your ability to expansively frame, and in your ability to intentionally craft social relationships that are unique and assetful as compared to learning that happens in corporate L&D or in the flow of work context. So please don't at all be disheartened. I want to underscore that. There are real assets to lean into. That would be one. And, if I can have a second small one, that is also to recognize and cut yourself some slack because learning right now and the world are in such a state of flux, and there's so much ambiguity in the business. There are tools that are coming up every day, and it feels like if you haven't read every single *New York Times*, *HBR* article, and tried the three new things that launched last week by 10 a.m., you're already behind. And that's not true. The fundamental principles of how humans learn are the same with or without AI. Just hold on to the fact that you don't need to get caught in a rat race, and you're doing well.

Jeff Cobb: [00:41:48] That wraps up our conversation with Dr. Tessa Forshaw, the cognitive scientist directing the Workforce Learning and Innovation Initiative at the Harvard Graduate School of Education. Stay with us for our recap.

Celisa Steele: [00:42:00] You'll find show notes and a transcript for this episode at leadinglearning.com/episode480, along with links to Tessa's profile on LinkedIn and where you can learn more about the initiative and the certificate program in workforce and workplace learning.

Jeff Cobb: [00:42:16] If you found this episode valuable, we'd be grateful if you'd share it. That helps more people benefit from the conversation, and it supports the work we do with the podcast.

Celisa Steele: [00:42:26] Tessa opened our conversation by reframing what learning actually is—not content delivery but a neurobiological process shaped by brain chemistry, hormones, and environment. That shift in perspective is the foundation of five principles for designing effective learning experiences.

Jeff Cobb: [00:42:45] Those principles—that learning is biological, social, situated, and requires effort and must transfer—give learning designers a science-based lens for evaluating and improving their programs.

Celisa Steele: [00:42:59] And she left us with a clear and quite easy-to-implement tip: Make intentional space for metacognition in your programs. The data, she says, is unambiguous—when learners have structured time to reflect on their own thinking and learning, then performance, durability, and transfer all improve.

Jeff Cobb: [00:43:18] Thanks again for listening—see you next time on the Leading Learning Podcast.

[music for this episode by Moarn]