Celisa Steele: [00:00:00] Because effort contributes to lasting, durable learning, learning businesses have a responsibility to expect learners to put in effort and to support them in doing so.

Celisa Steele: [00:00:15] I'm Celisa Steele.

Jeff Cobb: [00:00:16] I'm Jeff Cobb, and this is the Leading Learning Podcast.

Jeff Cobb: [00:00:24] Have you ever met someone who seems to master everything with zero effort? Like they were born with skills the rest of us have to work for?

Celisa Steele: [00:00:33] And we intend that as a true reflection question for you, dear listener. Can you think of someone who seems to have mastered something effortlessly? Pause this episode, and take a moment to try to think of an example. It might be someone you know personally. It might be someone you've read or heard about.

Jeff Cobb: [00:00:55] The media is full of stories of apparently overnight successes—the song by the unknown band that rockets to number one, the bestselling novel by a newcomer, the newly discovered artist whose work is going for millions.

Celisa Steele: [00:01:09] Yes, and what the media coverage is often missing is the effort that went into crafting those "overnight" successes—the countless hours of practice and the songs the band wrote that didn't make it onto any charts, the umpteen drafts of the novel and the dozens of rejections from publishers before the acceptance, the long days of art school where the artist studied and honed her craft.

Jeff Cobb: [00:01:34] The person that popped to mind for me when thinking of effortless expertise is Sherlock Holmes.

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Celisa Steele: [00:01:41] I know you like mysteries.

Jeff Cobb: [00:01:43] I love Sherlock Holmes. So often Holmes appears effortlessly brilliant, solving these complex cases that no one else can crack and seemingly with complete ease. But, if you read the stories carefully, Holmes is actually extremely meticulous, constantly studying, paying attention, and being observant, and it's that effort that allows him to crack the cases.

Celisa Steele: [00:02:07] Mozart came to mind for me. He supposedly composed his first pieces of music at the age of five.

Jeff Cobb: [00:02:14] That's about when I was doing it, I think.

Celisa Steele: [00:02:16] By eight, he had composed his first symphony. How old were you when you composed your first symphony?

Jeff Cobb: [00:02:20] I haven't gotten to that one yet.

Celisa Steele: [00:02:22] He seems like the epitome of a born talent. But Mozart's father was a musician and a composer himself, and he had his son studying and practicing for hours every day from a very early age. So the effort was there.

Jeff Cobb: [00:02:38] And odds are, dear listener, that whoever came to mind for you when thinking of that apparently effortless expert actually put in a lot of effort, and you'd probably find evidence of that if you dig into their history a bit. The effortless expert is a myth. Because learning isn't about innate ability. It's about the effort we choose to invest. And so we want to look in this episode at the role of effort in learning and ways learning businesses can help support learners in putting in effort.

Celisa Steele: [00:03:11] This episode is the final installment in what has turned out to be a mini-series. We started in episode 425 with "What's Necessary to Learn," and we talked about motivation, time, and effort. In episode 431, we unpacked motivation in an episode called "Why Motivation and Mindset Matter." And then, in episode 434, called "The Small Matter of Time," we looked at the role of time and learning. And now, in this episode, number 438, which is called "This Is Hard, and That's Not Bad," we're focusing on the role of effort in learning.

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Jeff Cobb: [00:03:50] Effort is a critical part of learning that often gets overlooked. Learning isn't just about showing up or passively absorbing information; it's about the active engagement that we bring to it.

Celisa Steele: [00:04:03] We're going to start with the concepts of effort and attention because attention is foundational. Before we can learn, we need to direct our attention. Effort starts with giving our full focus to whatever the subject or the learning experience at hand is.

Jeff Cobb: [00:04:21] As we've explained in other episodes, this is a matter of working memory. Working memory is where we temporarily hold and manipulate information, and that part of our memory is limited. There's only so much we can put in there. When we divide attention, we reduce the effectiveness of our working memory.

Celisa Steele: [00:04:43] All of this ties into the concept of cognitive load. Cognitive load is the mental energy that we need to process information. The more complex the material—meaning, the harder the subject or the skill is for those of us learning it—the higher the cognitive load and the higher the demand on our working memory.

Jeff Cobb: [00:05:05] To help make sure that we're getting as much from a learning experience as possible, we need to do what we can to focus that limited working memory on the topics or skills that we're working on and not on other things.

Celisa Steele: [00:05:20] Which means limiting distractions that might pull our attention away from the learning experience. For example, trying to read and respond to e-mails while participating in a Webinar or a conference session. I will say I'm guilty of that.

Jeff Cobb: [00:05:35] I've never done that.

Celisa Steele: [00:05:36] You've never done that. Well, good for you, Jeff. But, for me and perhaps other folks like me who have tried to read and respond to e-mails while also in a learning experience, that means we're spending part of our already limited working memory on something not related to learning—we're dividing our attention, which means we aren't putting our full effort towards learning.

Jeff Cobb: [00:05:57] This all comes down to debunking that multitasking myth. I think most people, probably most listeners here, are aware that multitasking isn't really a thing. Despite what we might think, the brain doesn't truly multitask. Instead, what it does is task-switches,

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meaning it shifts rapidly between tasks. Some people can be very fast at doing that to the point that they feel like they are multitasking. But, no matter what, that switching is draining energy, and it's going to reduce learning efficiency.

Celisa Steele: [00:06:29] One small example of this is that I've realized that I shouldn't listen to music with lyrics when I'm reading. I might be reading an article online, or maybe I'm reading part of a self-paced e-learning course, or I'm reading a book, whatever it is. But, for me, hearing the song lyrics interferes with the words that I'm reading with my eyes, and it slows me down because of that increased cognitive load. That's not necessarily the case for everyone. I know that some people seem to be able to treat songs as background sound, and they don't have that sort of level of interference. But, for me, I do, and so this is a realization I've had, and it's something now that, if I'm really focused on learning through reading, I try not to have any music with lyrics or anything that's competing with those words I'm reading. I don't want to be hearing anything else as I'm trying to concentrate on what I'm reading and learning that way.

Jeff Cobb: [00:07:21] Yes, and I've realized I need to have my phone turned on "Do Not Disturb" and face down if I'm trying to do any intensive work in the morning because it is amazing how many texts come in between, say, 8:00 and 10:00 in the morning.

Celisa Steele: [00:07:33] I never send you texts between 8:00 and 10:00.

Jeff Cobb: [00:07:35] Never, never. But you have to ignore those if you want to really focus in and get some actual learning done.

Celisa Steele: [00:07:43] If we think about our role as learning businesses and what we can do to help our learners focus their attention, keep the cognitive load, that limited working memory focused on the content at hand, one of the big things we can do is prune our content.

Jeff Cobb: [00:08:02] Right. Get it down to what really is essential for the learner to be focused on. This is something we talk a lot about in the "Presenting for Impact" course that we've created. If you are a presenter, you know so much; you can often be burdening the cognitive load of your learners because you're trying to tell them everything that you know and taking them down multiple rabbit holes when you need to focus on what is that one thing they need to learn in this particular segment of the course and keep attention focused well on that.

Celisa Steele: [00:08:29] Another important concept related to effort in learning is desirable difficulty.

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Jeff Cobb: [00:08:36] A term dear to the heart of every learning theorist, I think. A learning challenge that requires effort but strengthens learning, that's a good thing. That's the desirable part. It's difficult, but, because it is achieving an aim in being difficult, we characterize that as desirable difficulty.

Celisa Steele: [00:08:55] When we engage in activities that make us work a little harder to recall or understand, our brains are creating stronger connections. That gets at the desirable part that you were talking about, Jeff. That effort strengthens the connections in our brains, makes that information or those skills become more ingrained and more easily called upon. We can talk about a few examples of what desirable difficulty might look like, and we'll end up throwing around some other terms that listeners here are probably familiar with, and, if not, it'd be very good for you to become familiar with them. Effortful retrieval is one of those terms.

Jeff Cobb: [00:09:32] This is a big one. Simple example: When we test ourselves, we're pushing our brains to actively retrieve information. This recall effort strengthens memory and helps us retain what we learn longer. In fact, this kind of self-testing is one of the most effective learning practices that any lifelong learner can have.

Celisa Steele: [00:09:54] Right. And coupled with effortful retrieval, the concept of spaced practice or spaced repetition fits very well. The general idea with spacing is that it's more effective to spread out any review and practice of ideas and skills over time in smaller chunks rather than doing it all at once in a longer session—sometimes called massed practice. Spaced practice helps us move information from working memory to long-term memory. We've already talked about how working memory is extremely limited. Long-term memory is thought to potentially be limitless, and so, as we're practicing concepts and revisiting them, if we can move them out of that working memory into long-term memory, from long-term memory we can draw on them when needed. A big part of effortful retrieval is getting that spacing right. You need to let enough time elapse before you test yourself so that you've done a little bit of forgetting, actually, so that that recall is a little bit harder than if you did it two minutes after you had just practiced the same concept or reviewed the same term, for example.

Jeff Cobb: [00:11:03] Another key example of that desirable difficulty is problem-solving—or we might think of this as problem-pre-solving. When we try to solve problems before learning the answers, we're engaging in desirable difficulties, and figuring it out ourselves makes the learning stick better than passively watching someone else solve that problem.

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Celisa Steele: [00:11:26] Yes, and we made a small nod towards effort when we asked you, dear listener, at the outset of this episode to think of someone who is apparently successful without effort. We didn't necessarily want to give our examples first. We wanted you to have the opportunity to do a little bit of problem-solving or at least answering that question on your own without the examples at first. That's just a small example of a little bit of effort.

Jeff Cobb: [00:11:52] We'll make clear here that not all difficulty is good. We've qualified this as *desirable* difficulty. You don't want to put in difficulty that is going to hinder learning. A simple example: If a slide is blurry, if it's hard to read, that's difficult, but that's not going to help with learning at all. So it's important to focus on difficulties that challenge us to recall, understand, or connect concepts actively.

Celisa Steele: [00:12:20] A personal anecdote I can offer again is learning to snowboard. A few years ago, I put on boots and strapped into a board, and I was slipping around all over the bunny slope and beginning to figure out balance and some other things on my own before the instructor said one word. Did I fall? Absolutely. Many times. Did I learn? Yes.

Jeff Cobb: [00:12:42] You were much more successful at learning that than I was. I fell a lot and finally decided that snowboarding wasn't for me. But I do experience this all the time, for example, in practicing the guitar. I've been working for a while in trying to know the whole fretboard, where all the notes are, how all the scales work, how it all fits together, and, boy, I get frustrated all the time in doing that. But making that effort, doing it spaced out over time, I can definitely tell I'm making progress, much more so than if I just sat down on a Saturday and said, "I'm going to learn this." I would learn nothing doing that.

Celisa Steele: [00:13:15] Dear listener, we're going to encourage you again to put in a little effort of your own, to pause this episode for just a moment and think of a time from your past where doing something difficult helped you learn.

Celisa Steele: [00:13:31] Now, in terms of tips for learning businesses around desirable difficulty, if you make use of professional instructional designers, folks trained in instructional design, they're probably going to be well aware of the value of effort. They're going to be thinking through how to incorporate it. If you rely on subject matter experts, though, you may need to do a little bit of educating them.

Jeff Cobb: [00:13:55] Yes. In the first place, the subject matter experts are going to have to know about the value of effort and why it's valuable. And then, second, they need to build in those

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effortful opportunities and make time for them. This can be a bit of an uphill battle. I think it's at times hindered by our evaluation system, and we've hinted at this in other episodes. We want our learners to like the experience. We want them to enjoy the experience because that's going to help them come back. But sometimes putting in that effort is not enjoyable, and an instructor can end up getting dinged because they did things that were hard for the learners, when in fact it's going to be the most effective over time. In the world of the learning business, there's a challenge around really thinking through this desirable difficulty, and how do you frame it in the best possible way, as an instructor, so that learners are receptive to it?

Celisa Steele: [00:14:48] At Tagoras, we partner with professional and trade associations, continuing education units, training firms, and other learning businesses to help them to understand market realities and potential, to connect better with existing customers and find new ones, and to make smart investment decisions around product development and portfolio management. Drawing on our expertise in lifelong learning, market assessment, and strategy formulation, we can help you achieve greater reach, revenue, and impact. Learn more at tagoras.com/more.

Celisa Steele: [00:15:26] We have a couple more terms and ideas that tie into effort that we want to talk about. The next two are reflection and elaboration. Reflection is about looking back at what we've learned. It's about asking ourselves how well we understand it. It's about considering how the ideas or the content apply to our work or our life.

Jeff Cobb: [00:15:49] One of the keys here is for reflection to be active and to contain a little bit of that effort that we're talking about, not just simply sitting back in a chair and musing but trying to do something with those reflections that you're having. A practical tip: Your reflection might involve something like journaling, in which case you're writing things down, which is helpful, or mentally reviewing key points after a class, after a conference session, after an online module, making the time to do that. This will lead into our next point—trying to make some connections as you're doing that.

Celisa Steele: [00:16:24] That's right. Those connections tie to elaboration, which is where we begin to link new information to what we already know. When we explain something in our own words or when we find examples from our own experience, those are examples of elaboration, and that's helping us to embed that learning more deeply because it becomes connected to things that are already in our long-term memory. We can then pull out the new information more readily because it has that foothold in our long-term memory.

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Jeff Cobb: [00:16:54] We can offer up an anecdote here. Something that we're doing at Tagoras, as so many organizations are doing now, is trying to get our arms around AI (artificial intelligence) and, as part of our approach to learning about AI and implementing it, having some meaningful conversations among staff. We recently had a company meeting here, and we were talking about AI and about when using AI and not disclosing it might be unethical. We made the comparison to a situation in which someone buys cookies, puts them on a platter, buries the box at the bottom of the trash, and presents the cookies at the end of a dinner party as something made from scratch. Which I would never in a million years think of doing. This is purely a hypothetical situation.

Celisa Steele: [00:17:40] What you just shared there, Jeff, uses an analogy, and analogies are a kind of elaboration. When we use analogies, we're connecting new information to concepts that we already understand, and that deepens our comprehension and helps with retention. This is because an analogy helps bridge the gap between the unfamiliar and the familiar, creating this mental hook that makes the new idea easier to remember and easier to apply. In that example, Jeff, it was the store-bought cookies versus homemade when we're talking about AI and uses of AI and when it's unethical. But we can also use it in a lot of other ways.

Celisa Steele: [00:18:20] You could use the analogy of saying that working memory juggles a limited number of items. Then you get that idea of juggling, helping us visualize and relate to this concept of working memory because we have some notion about juggling. It's hard to have a lot of items up in the air, so you get this idea that it's limited. You get this idea that it's a little bit of a difficult situation, that working memory is a little tenuous. And so analogies are a very powerful tool for elaboration, and they actively engage us, as learners, in meaning-making because we're drawing parallels, usually from our own experience. Sometimes an instructor might be giving us an analogy to help us, but, either way, it's helping us to connect new information to something that we're already familiar with. This is the kind of thing that you might be using in some of your learning experiences.

Jeff Cobb: [00:19:10] Maybe we can offer up some tips for learning businesses once again around these concepts of elaboration and reflection. First of all, don't assume that learners know these concepts or at least that they're fully engaged with these concepts and have them front of mind when they're coming into a learning experience. It's worth taking some time to forefront them and explain them and give them some tips on how to use them. For example, something simple like note-taking, which we tend to take for granted, assume people will do this. But we know that, when you take notes, that trying to use your own words instead of copying verbatim is good to do in notetaking. So is adding questions to notes. Questions remind learners of what

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they know *and* what they're still figuring out, and this, of course, can prompt further reflection when you frame those questions to yourself as you're creating those notes.

Celisa Steele: [00:20:07] A simple act that you can do to encourage reflection and elaboration is just to make sure that the learning experiences that you're offering in your portfolio do encourage reflection and elaboration. You can be more or less formal about it. In any particular learning experience, you could simply pose a question, which gets people reflecting. Or you might be slightly more elaborate in the sense of providing a worksheet that helps scaffold the reflection that someone might do as part of a learning experience.

Jeff Cobb: [00:20:39] The bottom line there is you build in the opportunities and build in the time for those opportunities for elaboration and reflection, and don't put that burden wholly on the learner. Help the learner with doing that—helping to find the time and highlighting the importance of those activities.

Celisa Steele: [00:20:56] And then effort, well, it takes effort, right?

Jeff Cobb: [00:21:01] Indeed.

Celisa Steele: [00:21:01] Which means that there are a variety of—what we'll put under the umbrella—lifestyle factors that can be important in supporting effort. We're thinking about things like sleep, what you eat, your physical activity, your stress level, and those types of things. We can touch on each of those briefly.

Jeff Cobb: [00:21:21] Yes, I think these don't get enough attention. Again, it's just one of those things we can help forefront for learners and help them manage this as an aspect of their learning because we don't really think of these as aspects of our learning. But sleep, for example, is essential for consolidating memory. During deep and REM sleep, our brains process and store new information. And, if we're not getting enough sleep, it's a lot harder to both focus on and then retain what we learn.

Celisa Steele: [00:21:47] And then with diet and what we eat, that's tied to brain health. We want to be thinking about eating healthy foods. There's some research around omega-3s and antioxidants supporting cognitive function, but, in general, what we know for sure is that poor nutrition can make us not feel very good. It can make it harder to stay focused, and essentially it can hinder learning.

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Jeff Cobb: [00:22:09] We want to keep that in mind when we're planning those conference meals and snacks and those sorts of things. Then physical activity and mood, which are closely related. Exercise increases blood flow to the brain and releases neurochemicals that can enhance mood. They can enhance memory and focus. Physical activity in general can make us more receptive to learning.

Celisa Steele: [00:22:33] And then stress. Chronic stress can disrupt memory and learning, and so we want to try to minimize that chronic stress for the sake of learning—and for the sake of all sorts of reasons. Chronic stress is not a good thing. We will say that sometimes short-term stress can actually help you focus on learning. Again, if we get back to that example of perhaps asking a learner to solve a problem before you've shown them the steps for the solution, that might create a little bit of stress for some learners. But, again, that's a healthy level of stress. It's the kind of stress that can help them potentially focus on the task. And so there's a little bit of finding the balance. We don't want to overly stress our learners, but there might be times when it's appropriate, where small amounts of stress do make sense.

Celisa Steele: [00:23:21] The takeaway from all of this is that there are a range of factors that support the effort that learners can put in, and very often we, as learning businesses, don't have a lot of control over these factors. But, when we do, we should make smart, evidence-based choices. Jeff, you mentioned menus at a conference, for example—yes, making sure that it's not sugary snacks or sugary snacks only. During a longer session, you might do a seventh-inning stretch to get people up and moving for a moment, for example. Again, you don't always have that control, but, when you do, thinking through some of how these lifestyle factors support learning can be important and helpful.

Jeff Cobb: [00:24:05] Yes, that would be one area of tips for learning businesses to put this into action. Another area of tips would be, when it's appropriate and when you have the chance, to help learners be aware of and think about these factors and what they can control. We should all keep this in mind as learning businesses and as subject matter experts. We've presumably got the attention of people when they're gathered in the room in front of us, and we don't want to get on a soapbox, but some useful reminders that these are important factors and how to think about managing them is something we should be pursuing. For example, on testing days, our schools emphasize the importance of kids eating well before showing up, and our elementary school would provide a snack for all kids before testing took place. Again, connecting this to nutrition and supporting learning through proper nutrition.

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Celisa Steele: [00:25:03] And, again, we can offer learners advice that they pay attention to when they tend to have their own lags in attention or surges in attention throughout the day. If learners are engaging with an online course that we provide, we can help them think through, "When would it be most effective for me to engage in this course? If I happen to be on top of my game in the morning, maybe I need to make sure to try to carve out time to do that course in the morning rather than trying to leave it 'til at night, at home, right before bed," for example.

Celisa Steele: [00:25:36] So what do we know about effort in learning? The short answer is we know that putting in effort contributes to lasting, durable learning.

Jeff Cobb: [00:25:46] Yes, an abundance of good, evidence-based research points to this. When learners do things like ask questions and take notes, they're putting in that useful effort, engaging in that desirable difficulty. When they actively recall information from memory without referring to notes or the text, they're again putting in useful effort. When they try to solve a problem without first being taught how, once again they're putting in useful effort.

Celisa Steele: [00:26:17] Those are forms of effort that involve desirable difficulty, and they therefore contribute to learning. These kinds of efforts are things that we, as learning businesses, can and should support. There aren't overnight successes in learning. Learning isn't about innate ability. It's about the effort that learners choose to invest, and we, as learning businesses, should support learners in investing effort.

Celisa Steele: [00:26:51] Because effort contributes to lasting, durable learning, learning businesses have a responsibility to expect learners to put in effort and to support them in doing so.

Jeff Cobb: [00:27:01] At leadinglearning.com/episode438, you'll find show notes, a transcript, and options for subscribing to the podcast. If you haven't yet, please, please make the effort to subscribe.

Celisa Steele: [00:27:13] We'd be grateful if you would take a moment to rate us on Apple Podcasts or wherever you listen, especially if you enjoy the show. Jeff and I personally appreciate reviews and ratings, and they help the podcast show up when others search for content on leading a learning business.

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Jeff Cobb: [00:27:28] And please spread the word about Leading Learning. You can do that in a one-on-one conversation or e-mail to a colleague, and you can do it through social media. In the show notes at leadinglearning.com/episode438, follow the link to connect with us on LinkedIn.

Celisa Steele: [00:27:45] Thanks again, and see you next time on the Leading Learning Podcast.

[music for this episode by DanoSongs, www.danosongs.com]

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