



Leading Learning Podcast Episode 275

Ruth Colvin Clark (00:00):

I always would recommend err on the side of having shorter amounts of content or slides or screens in a topic. I myself, even in my pleasure reading, I'm more and more drawn to books that have short chapters. I just find it a whole lot easier and more enjoyable to read and review it. I think in learning, when you have relatively short little topics, you feel a sense of achievement, and you don't feel so overwhelmed by the long, lengthy lesson.

Jeff Cobb (00:28):

I'm Jeff Cobb.

Celisa Steele (00:33):

I'm Celisa Steele, and this is the Leading Learning Podcast.

Jeff Cobb (00:41):

Welcome to episode 275 of the Leading Learning Podcast. This is the fourth episode in our seven-part series on the learning sciences' role in a learning business. We're focusing this episode on two conversations: one with Ruth Colvin Clark and one with Myra Roldan. Both Ruth and Myra are evidence-based learning designers who combine a nuanced understanding of learning theory with years of hands-on experience developing solutions. We'll begin with Celisa's conversation with Dr. Ruth Colvin Clark, principal and president of Clark Training & Consulting. Ruth has spent her career as an instructional psychologist, working with diverse organizations. She's the author of many articles and books, including *Evidence-Based Training Methods*, and she co-authored *e-Learning and the Science of Instruction*—both of which we highly recommend. Celisa spoke with Ruth in May 2021.

Ruth Colvin Clark (01:44):

As an undergraduate and master's, I was in the sciences—chemistry and biology. So science has always been a particular interest of mine. And so, as I migrated into the learning domain, the role I gradually adopted was that of a translator. What I do is review research articles, research presentations usually from academic professors and researchers, and then I translate those through books and through workshops into practical guidelines, particularly applicable for adult learning.

Celisa Steele (02:19):

And so I know that that has been a big focus of yours—taking that research around learning, and then making sure that it's translated and available to practitioners to apply. How do you explain or describe the value of evidence-based practice?

Ruth Colvin Clark (02:37):

I think, in the workforce learning, we're investing a lot of money in learning events. The largest part typically actually involves the staff time that they devote to learning events, and everybody's very busy. So I think, whatever limited time you have to deliver training events, you want to maximize the value of that training. And I think one of the best guidelines then is to draw on instructional methods that have actually been empirically researched and proven. So that I think is the main value, is to get a return on investment.

Celisa Steele (03:23):

Well, that return on investment really speaks to the organizational value—they're spending these dollars; they're making staff available; they're allowing the learners this time to learn. Do you also see, or how would you describe, the value for the learners themselves in being able to engage in something that is developed according to evidence-based practices?

Ruth Colvin Clark (03:47):

Right. I agree. Learners can get a lot more value from a well-designed and empirically based set of instructional methods. They may or may not appreciate it at the time, but, often in traditional types of training, we have lots of long lectures, and the learners are very passive, and I think learners will get much more engaged by using the appropriate instructional methods.

Celisa Steele (04:14):

Do you see more practitioners making sure that their decisions and their designs are backed up by solid research than you did, say, maybe a decade or even two decades ago?

Ruth Colvin Clark (04:24):

Yeah, I go back several decades, so it's a good question. I think the answer is yes and no. One of the things that happened in the '90s was the emergence of evidence-based medicine. As off spin of that, practitioners in the allied health sciences, in the training part of it and in medical schools, began to attend a lot more to evidence-based learning. So I think that gave us a boost, at least in that professional arena. However, at the same time, in many cases, training organizations have high turnover. And in many cases, they have limited numbers of professional guidance. By professional, I mean people who have maybe master's or doctorate degrees or extensive experience in instructional design and instructional psychology. So I think in some ways, we've moved forward, but we still, I think, have large gaps and probably an ongoing challenge with promoting and disseminating the concepts of evidence-based learning.

Celisa Steele (05:30):

How do you personally keep up with new research and developments in learning science and then the implications of that learning science and those new developments on learning design?

Ruth Colvin Clark (05:41):

This is one of the things that I really enjoy doing. I have a list of about 10 to 12 journals. These are mostly academic journals that publish fundamental research, and I check through these journals every month, look at their table of contents. And I have maybe 10, maybe 20 themes that I particularly monitor—for example, the best use of graphics or evidence-based techniques for engagement. And so then I file those. And then when I get ready to prepare a chapter or a book, I can draw on those. I will say this takes quite a bit of time. And I think most practitioners don't have time to look up and read original academic research. And so I'm hoping to fill a gap there by doing that reading for learners and summarizing that information.

Celisa Steele (06:38):

Well, it is a great service. I know from having spent time with some of your writing just how useful it is to have you pull together from these various sources the evidence and then spell out the implications of that. Maybe you are already getting at this by saying that a lot of folks don't necessarily have the time to do what you're doing, in terms of keeping tabs on these different journals and checking in monthly and reading and figuring out the implications of that. That can be hard. But do you have advice for learning businesses that are looking to stay on top of learning science and learning-related research? Any tips for how to do that effectively and efficiently?

Ruth Colvin Clark (07:19):

Right. I think there are some organizations—like yours—that their business is about making these kinds of translations. Some of the professional societies, like ISPI and also one I'm involved in recently, Learning Development Accelerator, have publications, Web sites, conferences (online and in-person) that try to translate this research into practical guidelines and illustrations for practitioners. So I would advise people to take a look at books and online conferences, Web sites, discussion forums on LinkedIn that are grounded with evidence-based practice.

Celisa Steele (08:02):

I'm most familiar with the book that you co-authored with Richard Mayer, *e-Learning and the Science of Instruction*, and, as that title suggests, it really focuses on the mode of e-learning. How different is it to design effective learning for different modes? What are the salient differences when designing for e-learning versus classroom instruction, for example?

Ruth Colvin Clark (08:26):

That's a great question about how best to exploit the features—or what we call “affordances”—of different media. The good news is, for all media, there is a common body of research that, whether you're in the classroom or whether you are designing for e-learning, you want to apply those guidelines. But as far as differences, I think one of the main things in e-learning is the difference in learner control. So if you are in an asynchronous e-learning, you have the opportunity to go at your own pace, to go back and review something else compared to, in the classroom typically, you're going along at the instructor's pace, not necessarily your own. So I think that's a major thing to keep in mind with e-learning—the learner control aspect. Also, in technology, you have an opportunity—perhaps it's a little easier to do things like simulations. And one of the latest things now is immersive virtual reality and those kinds of things.

Ruth Colvin Clark (09:35):

So I think you have some opportunities in e-learning, but the classroom also has great opportunities as far as just social presence. You have individual people there, and you can get them engaged both with one another and also with yourself. So I think all media have strengths and weaknesses, and perhaps sometimes the best solution is a blended solution, where you combine some asynchronous e-learning maybe with synchronous classroom-led training.

Celisa Steele (10:07):

To pick up on what you were just saying there, that all these media have different strengths and weaknesses, I'm going to ask a direct question I'm pretty sure I know the answer to, but I just want to ask. Is there a gold standard in terms of mode? Is there, if you have the choice, always go with X, whether that's classroom or e-learning or some other mode?

Ruth Colvin Clark (10:29):

Well, it's interesting, having tracked this—some professional organizations actually have published for probably 20 or 30 years, maybe more like 20, the proportion of use of e-learning versus classroom. And I had some colleagues way back who said, "Oh, e-learning is going to overshadow everything, and classroom instruction is going to go away." Well, that actually has not turned out to be the case. And some of the more recent data I've seen shows, yes, e-learning has steadily grown in terms of the proportion of its use, but there are certainly also examples of classroom training. I think what we try to do is blend the best of all worlds and involve classroom as well as e-learning. And, by the way, when we say "classroom," it doesn't always have to be the physical classroom. We have technology now for the virtual classrooms too.

Celisa Steele (11:25):

Right. It's an excellent point, of course, that these modes begin to blur, as well as potentially the intentional blending. But it is interesting as technology makes more possible—and we've certainly seen that over the last year or so as more people have been forced or had the opportunity to engage in doing more online.

Jeff Cobb (11:53):

If you're looking for a technology partner to help you effectively engage learners online, check out our sponsor for this series. SelfStudy is a learning optimization technology company. Grounded in effective learning science and fueled by artificial intelligence and natural language processing, the SelfStudy platform delivers personalized content to anyone who needs to learn, either on the go or at their desk. Each user is at the center of their own unique experience, focusing on what they need to learn next. For organizations, SelfStudy is a complete enterprise solution, offering tools to instantly auto-create highly personalized, adaptive learning programs, the ability to fully integrate with your existing LMS or CMS, and the analytics you need to see your members, users, and content in new ways with deeper insights. SelfStudy is your partner for longitudinal assessment, continuing education, professional development, and certification. Learn more and request a demo to see SelfStudy auto-create questions based on your content at selfstudy.com.

Celisa Steele (13:01):

I'd love to dig into some of the research-based principles that you promote. So would you tell us about the coherence principle? And then, if you have them, I'd love to hear any suggestions for how to avoid the pitfall of adding extra material.

Ruth Colvin Clark (13:18):

I think coherence is a real important guideline, well-researched. Basically, a lot of times the information and the skills and knowledge that we are charged with is not the most stimulating or exciting. And yet we're all really used to being immersed in high-intensity media, games, simulations of different kinds. And so it's tempting to try to spice up or elaborate on your content. A couple of really often misused techniques might be graphics. Often a simpler graphic is better, easier to produce, and ultimately more effective instructionally compared to a real high-end graphical interface. Another one is stories. Stories are wonderful because they're very memorable. On the other hand, if they are not directly related to your learning outcomes, they can just become distractions and actually disrupt learning. Another challenge can be with your subject matter experts, just because they know so much. Often they want to provide everything there is to know about a certain topic. And I think one role we can play as instructional professionals is to narrow down what do we really need to know versus nice to know.

Celisa Steele (14:34):

And so you mentioned the subject matter experts and that they can have that tendency to share everything that they know, and so then the work, as the instructional designer, is to help focus that and really figure out what is relevant. Do you have any suggestions for how to work with subject matter experts to really whittle away the non-essential and get to the core content?

Ruth Colvin Clark (15:05):

I think it's always a challenge, and it probably hasn't changed that much. But you can have a radar out. For example, a lot of times they love war stories. Well, war stories can be great, but, if you have hammered out a mutual understanding of "Here's the learning objective, here's what we want to achieve," then you can say, "Okay, is this story really relevant to that? Or is it a tangent type of thing?" Also, you can maybe have groups of people who review the material. And, typically, you have a certain amount of time and you, yourself as an editor, can go through and cut out extraneous materials, given the challenges of time and given that most learners are going to want to accomplish what they need to accomplish in the most efficient way possible.

Celisa Steele (15:50):

So I'd love to hear you talk about the redundancy principle. I feel like we hear often that repetition is the mother of all learning, and redundancy could be seen as a kind of repetition. So what's the danger in redundancy?

Ruth Colvin Clark (16:09):

Let me begin by just being very specific about what the research has shown and what we mean when we say the redundancy principle. So that principle actually refers to a situation where you have a screen or a slide that has a graphic of moderate to high complexity, and then you need to explain that graphic, which you could use text on the slider on the screen, and then you can have audio narration of that text. And redundancy, which is to be avoided, is a situation—and you've probably all experienced it; I've seen it on TV—where there's a whole lot of text and then the audio or the narrator actually narrates exactly those sentences. That's what's known as redundancy. And I think that's a little different from redundancy in which you're trying to review and work in earlier threads into later portions of your course.

Ruth Colvin Clark (17:07):

So this is specifically redundancy in terms of the modes of audio and text and visual. And the reason for it is, if you have a graphic of moderate or high complexity, that's going into the visual center of your brain, and then you also are having on-screen text that's also competing with that limited visual resource. And you can also be out of sync. I know when people are reading things on a screen to me, I could read it myself a lot faster. And yet often, I think, as instructors, we feel, "Oh, I've got to say something. I have to read this to people." And so it actually overloads the visual center of the brain. And it's a disruption in that it can be out of sync with what the person's natural reading rate is. So that's a more specific guideline about the redundancy principle.

Celisa Steele (17:58):

I think that's very helpful. And so part of what you're talking about there is it's creating, if we have redundant content at the same time, this audio and the visual happening, that's putting greater demands on, it's a greater cognitive load, a higher cognitive load.

Ruth Colvin Clark (18:16):

Exactly.

Celisa Steele (18:17):

I feel like chunking—which I think fits with your segmenting principle—I hear chunking get a lot of lip service, but I’m also not sure that people really understand how to chunk. So I would be interested to hear what advice you have for how to effectively segment learning.

Ruth Colvin Clark (18:37):

That’s a really good question. As we talked earlier, the huge advantage to asynchronous e-learning is if you keep each of your content points or slides, if you would, or your topics relatively brief, then learners can control their own pace. And, in those situations, learners themselves can segment what you have provided. I think it’s much more demanding and difficult in something that is more instructor-paced, such as a video or a classroom or virtual classroom environment.

Ruth Colvin Clark (19:11):

One thing to keep in mind is your target audience. If you have relatively experienced learners—by that I mean experienced in the content and the domain that you’re talking about—then this whole chunking principle is not quite so crucial because they themselves can manage greater amounts of instructional content. But, particularly when you have novice learners, you want to employ a variety of techniques, for example, using a lot of white space. Even on a page or on a screen, you don’t need to write sentences. Maybe you can just put one or two words there and use your narration to elaborate on it. Your graphics, you could maybe do a build. If it’s a complex graphic, maybe you’ll build it up gradually either on the screen or on the slide. Those are the main things.

Ruth Colvin Clark (20:03):

And then I think, in general, it’s really hard to know, is this exactly segmented correctly? And it probably isn’t for each individual, but I always would recommend err on the side of having shorter amounts of content or slides or screens in a topic. I myself, even in my pleasure reading, I’m more and more drawn to books that have short chapters. I just find it a whole lot easier and more enjoyable to read and review it. I think in learning, when you have relatively short little topics, you feel a sense of achievement, and you don’t feel so overwhelmed by long, lengthy lessons.

Celisa Steele (20:40):

Is outlining and segmenting, are those related concepts in getting clear on the content you’re covering? And if you just organize it, is that going to help you as you segment it? Or is it something different than that outlining process in your mind?

Ruth Colvin Clark (20:55):

I think outlining is one very powerful tool, and it’s a good place to start because it’s a relatively straightforward technique, and you can do it mostly with text and then begin to get clear. First, we have our learning objectives. Now here’s our content. Now let’s outline how we’re going to break this down into maybe modules and then modules into lessons. I think it’s a useful tool. Another useful tool can be storyboarding. So maybe the outline first, and then you start to sketch out some storyboards, where you are going to show your graphic and your content at a high level first and then breaking out more detail.

Celisa Steele (21:33):

I think one of the things that I really appreciate about *e-Learning and the Science of Instruction* is you can look at the table of contents, and it serves as a review session—you’re looking back at

the topics and then the subtopics, and it's bringing it all back to mind. So I really appreciate that.

Ruth Colvin Clark (21:48):

And that was actually an evidence-based technique. They've shown if you start a lesson or a chapter just quickly with a quick little outline or "Here's some major topics," that serves as an advance organizer, and it helps with the reading or the learning process.

Celisa Steele (22:05):

We've touched on several different aspects of effective learning, but, if I asked you to pick just one, what aspect of effective learning do you wish was more broadly understood and supported by those designing and providing learning to adults?

Ruth Colvin Clark (22:24):

I think one of the major understandings that help us would be to appreciate the limits and the strength of working memory. We have the two memories: the working memory, which is very limited in its capacity but very powerful in its processing ability. And we have the long-term memory, which is where we store a lot of the knowledge and skills that we've acquired. And so by leveraging these two memories effectively, that will lead us to a lot of the instructional techniques that we have discussed. For example, we talked about managing cognitive load through the coherence principle. We talked also about promoting engagement. With engagement, you're actually forcing the working memory to process that information in a job-relevant way and then getting the feedback on it so that you can then correct or improve your responses or say, "Hey, that's okay. I really got that information." So I think understanding the fundamentals of the mental processes involved in learning and how we accommodate those would be a useful design understanding.

Celisa Steele (23:37):

Is there anything else that comes to mind that you haven't had a chance to say that you'd like to share?

Ruth Colvin Clark (23:43):

Well, thank you. I think that you're taking the time here to promote evidence-based practice. It's the more we can all do that and engage in that, the better off we as a profession will be, and we will continue to grow. The other thing I will say, in general, research evolves. Some of the things you and I talked about today, for example, the redundancy principle or the coherence principle, those are going to change as we get additional research. We've all been through a very interesting year with the COVID virus and seeing how research has changed sometimes quite rapidly over time, recommendations and guidelines for people. And that's true in our field as well. So I think it's an evolving area, and hopefully we will continue to have people like yourselves who will be disseminating that information for practitioners.

Jeff Cobb (24:41):

Keep Ruth Colvin Clark's comments in mind as we move to Celisa's conversation with Myra Roldan. We heard a bit from Myra in the last episode on market assessment and needs assessment, as the importance of knowing your audience is a major theme for her. Myra Roldan is a technologist and learning professional, and she currently serves as chief cloudification officer at Amazon Web Services. As Myra herself says, she does a bit of everything, from research and data analytics, to implementing new technologies, to creating full-blown learning experiences. Much of her personal work is focused on increasing access and opportunity for

underserved groups, including women and minorities, so they can get jobs that will earn them a livable income. Celisa spoke with Myra in May 2021.

Celisa Steele (25:38):

Many of our listeners work with subject matter experts to create learning experiences. So I would be curious to know what advice you have for working with SMEs, who likely know their stuff really well but don't necessarily know anything about effective learning design.

Myra Roldan (25:57):

So your subject matter experts don't have to have any kind of learning design experience, period. It is your job to gather content for them. So asking the right questions from those subject matter experts, and it can be something—I think sometimes we're just like, "Show me all the steps you go through," where you could take a more effective approach and be like, "What does someone who is new need to know? What are the four or five things that someone that is new that they need to master first? And then let's go down those steps and breaking it down into levels."

Myra Roldan (26:33):

So I think, with subject matter experts, because they are experts, what you want to do is you want to be able to, one, value their expertise, but also help them to narrow down to very specific areas because otherwise they're going to give you everything in the kitchen sink, and then you have to parse through that. And because they don't have the effective learning design experience—you do—it becomes a bit more muddled, and so we end up seeing solutions that are created that are just so dense and so over everyone's head that it's hard for a learner to actually figure out, "What am I really supposed to know?"

Myra Roldan (27:15):

When you're working with a subject matter expert, I say, keep agendas, take control of the conversation, start by asking like, "If I was a new—I don't know anything about this—what are five things that I need to know in order to be productive immediately?" You can really take control of the conversation and guide the conversation. And subject matter experts, you're going to have to really do some serious kitten herding, or cat herding, in some instances to really ensure that you're getting the information you need. You can't just, if you're not getting a response, you can't just fold and say, "Well, I'm not getting the information I need." Have some contingency plans, have some back-up subject matter experts that you can go to because most of the times subject matter experts, their time is valuable, and they may not have the bandwidth to give you the full amount of time you need. So you need to get creative.

Celisa Steele (28:11):

I heard you use one example question there, around if someone's new in this role or new at this job, new to this field, what are those four things, five things that they need to know? And using that to guide the conversation—you said, take control of the conversation. Are there other specific techniques or tactics or questions that you like to use when engaging subject matter experts to help you get at that most essential content?

Myra Roldan (28:40):

Yeah. So that's always tricky because it depends. It varies from subject matter expert to subject matter expert. You have some that just come in, and they throw a book at you, and they're like, "Everything you need is in here." So you have to say, "Okay, I'm going to take the time and go through this, and then I'm going to prepare something to give you so you can give me some

feedback and let me know if I'm going down the right path in my assumptions." And some other subject matter experts want to control the entire thing. And they're like, "Well, no, they need to know everything."

Myra Roldan (29:11):

And so you have to educate this subject matter expert and help them put themselves back in the shoe of a new learner or a beginner. And it's building trust also with your subject matter experts. So you have to make them feel like they are the subject matter experts, and you're just trying to gather a little nuggets of knowledge from them and have them understand that you value their time, and you value the expertise that they're bringing to the table. And I can't tell you how important that is to build trust because, if you don't build trust with those SMEs or subject matter experts right off the bat, they are not going to be cooperative.

Celisa Steele (29:48):

What's one of the common mistakes that you see in designing learning for adults?

Myra Roldan (29:53):

That's a great question. One of the most common mistakes that I see, and I think I mentioned this before, is I see these huge learning solutions that throw everything and the kitchen sink at your learners, and they're so dense, and there's so much information, and there's just, it's like they get drowned in theory and scenarios. And it's difficult when you think, about from a cognitive perspective, you end up throwing your learners into cognitive overload, where they don't have sufficient time to actually process the information that they're being given, to allow them also then to be able to learn how to apply what they just learned. So we tend to throw everything at people and then expect them to know what they're doing. And we all know that there is a forgetting curve and that people remember 5 to 10 percent of what they learn.

Myra Roldan (30:44):

And so I think knowing that, even though we know that, we see learning being designed as so dense and thick. And I've sat through learning where it's like an hour, and they just keep on repeating things. and they keep on going down rabbit holes. And it's just, you get bored; you get lost; you don't know what you're supposed to be learning; it's not engaging. And so I would say, to avoid that, you should take a step back and put yourself in the shoes of the learner. That's where design thinking comes in. What are the obstacles that they encounter when they're going through your solutions? And how does it impact their daily operations? How much work do they have to do on a daily basis? And how do you help lower that cognitive load?

Celisa Steele (31:27):

What you were saying about the solutions that are so dense—I think that's a really great word—and this idea of creating some space for that cognitive processing to happen—and for practice to happen, which would also be part of that processing—and so this idea of lightening the learning seems to be a potential way to describe what you were just talking about. Now, my understanding is that one of the things you like to do is engage in newer, cutting-edge technologies and explore how those could be applied in learning situations, and I'm thinking about virtual reality or voice interfaces, things like that. What's the impact of new and evolving technology on instructional design? Does the new tech change how we design learning—or how we should design learning?

Myra Roldan (32:25):

So it does, and it doesn't. New tech does impact—when you think about virtual reality, when, I think in 2015, I was designing for augmented reality and then virtual reality and trying to figure out like, “How do we design for that? And does it have a place in instructional design?” And I think that you do need additional skills in order to be able to work with the technologies.

Myra Roldan (32:52):

So I think a lot of people get hung up on like, “I need to learn how to create in this new technology,” meaning “I need to learn how to program it” when they've never programmed anything in their life, where I really push for people to learn how to design for it, which is very different. So it's understanding how the tech works, but you're not going to build it. I think that's the first thing. Most people who are designing instruction are used to doing everything, end to end, and this is an instance, when you're using new technologies, that you have to bring in an expert that knows how to program in that technology. And I'll give you a great example.

Myra Roldan (33:32):

When I was designing for virtual reality, we didn't have the user-friendly interfaces that we have right now. I had never programmed in virtual reality, and I was given this challenge of designing virtual reality experience. I was lucky to be able to work with some programmers, like game designers, that were able to take my vision. So I designed this whole engagement with my friend Ann Rollins, and we created this whole engaging kind of artifact and laid out, like, what does the world look like, and this virtual world that we're going to throw people into look like? What's going to happen when they're there?

Myra Roldan (34:12):

So we really focused on the design piece of it and then gave it to the programmers and a graphic designer to actually bring our design to life. And so I think it's knowing, being able to separate, and being able to say like, “I'm going to design for a specific technology, and I may not have the skills to build it, but I'm going to work with someone who can build it out.” It's project management from that point, being able to work with a programmer or developer that can help you bring your solution to life.

Myra Roldan (34:48):

I think the issue with a new technology, though, is the cost. A lot of companies and consultants want to integrate these new technologies without really taking into account the cost of development and maintenance and the feasibility of integration into a learning space. And so you have to do a feasibility study before you decide to use any of these new technologies.

Celisa Steele (35:14):

I think that's a really great point around understanding the cost of using new technologies—and not just the initial investment in a pure platform. You just mentioned maintenance and integration and those things that are going to bring costs as well. So I like the suggestion around a feasibility study to make sure that there's the cost-benefit there, that the return on investment in terms of whatever a learning business might invest, they're going to be able to see results that can justify those costs that go into it. You like to focus on access and opportunity in your work. What role do you see for learning science and learning design in the realm of diversity, equity, and inclusion?

Myra Roldan (36:02):

Okay. That's an interesting question. So when you think about learning science, that's a true science. It's about how do we deliver effective solutions to people that will allow them to gain

specific knowledge. And learning design is about how do we design this specific thing and this specific tool or integrate into an environment. And so when you think about diversity, equity, inclusion, I think, honestly, these two—learning science and learning design—play very significant roles. Learning design is, first, how do you deliver this thing? What is it that you're going to deliver to help someone learn? And what are the obstacles that someone is encountering or has in front of them that they need to overcome in order to gain access to the specific training?

Myra Roldan (36:54):

And then learning science, when you think about with learning science, you have machine learning and personalization and AI-driven kind of learning and stuff. How can you use something like tiny AI to make recommendations for someone who's accessing specific learning, let's say on a smartphone over a cell signal? And how do you ensure that people are able to gain access? Because I think where we fail is that we're always trying to build new and shiny, the latest and greatest, but then we're creating even, we're widening the gap—the equity gap, the gender gap, the access gap, the opportunity gap gets wider when we start to integrate these new and exciting technologies that may not be accessible to someone who doesn't have access to a computer and Internet.

Celisa Steele (37:43):

What do you do personally to keep up with new research, new developments in learning science, and then the implications that those might have on how you design?

Myra Roldan (37:55):

So I spend a lot of time doing labor market research, to understand what are the competencies that employers are looking for in a new employee, for roles that they have available right now. I don't really do a lot of research around learning science and learning design because I feel that that's way too narrow of a perspective to have, especially, I mean, our world has changed greatly in the past year and a half, and things are evolving. And so I will read white papers and academic papers around learning science just to see what's coming out, how are they taking advantage of any technologies that may enable, enhance learning through delivery or creating platforms that are accessible, but, I tell you, I read a lot of tech magazines. I read a lot of tech news. I read a lot of regular news. And I spend my life reading a lot of data.

Celisa Steele (38:58):

So you focus more on the market research, you focus on the new tech developments because, for you, that feels like the more meaningful realms for advancement versus the maybe narrow realm of learning science. Is that right?

Myra Roldan (39:13):

Yeah, that's correct. And I'll just tell you why because sometimes I get a lot of heat for this. When we think about learning science and learning design, if you pick up a learning design—and I'm not trying to knock anything—but they all have the same message. It's like, "If you do XYZ, you should design it this way. You should do this. This is the latest and greatest." But learning science, that's kind of fairly new, and that's melding technology and education and this whole theory of how do people learn, how do we enhance learning. But I feel that everyone ends up speaking the same language and having the same ideas. It becomes kind of a community of people who think the same way, which results in groupthink. And so I like to reach out into other realms and explore what's going on in psychology, what's going on in technology, what's going on in behavioral therapies, what's going on in other fields in order to

see are there things that we should be looking at that are being applied effectively in other realms?

Celisa Steele (40:26):

What advice do you have for a learning business that's looking to make good use of learning science in their offerings?

Myra Roldan (40:33):

My number one advice is know your audience. Don't build a solution looking for a problem. Understand your audience. Understand what are the problems that they're grappling with, and then align yourself to create solutions that will solve those problems. Don't build a solution expecting a field of dreams, like, if you build it, they will come now. You want to build it around the needs of your audience because you need to be able to earn trust with your audiences. You need to have them believe that you have their well-being and their best interest in mind and not, well, "We built this phenomenal thing, and now we're going to go looking for an audience and find a problem that it's going to solve."

Myra Roldan (41:17):

But if you engage your audiences, identify your audience, and then engage them, have them help you build your solutions, you are going to have a very different outcome than if you just build something and just focus on research or science or where you can say, "This is science-based, but we haven't spoken to our audience; we're going to find our audience now." But really understanding your audiences, that's pivotal—being customer-obsessed for sure.

Jeff Cobb (41:52):

Ruth Colvin Clark founded Clark Training & Consulting and has written many articles and books, including *Evidence-Based Training Methods* and *e-Learning and the Science of Instruction*, that focus on translating research into practical guidelines for creating adult learning. You can contact her at ruth@clarktraining.com.

Celisa Steele (42:12):

Ruth is generous with her translation work, and so you can find a number of free one-page summaries she's done on academic articles and their implications on the Learning Development Accelerator site. For example, she's done one on the role of emotions in learning. Her short summaries may be sufficient for your needs, but she always provides the full citation so you can also dig into the original research too. We'll link to those summaries in the show notes for this episode at leadinglearning.com/episode275.

Jeff Cobb (42:44):

Myra Roldan is a technologist, learning professional, and chief cloudification officer at Amazon Web Services. You can connect with Myra on LinkedIn and at myraroldan.tk, where she has some free micro-courses available on topics, including using slides as a virtual background in Zoom, and she posts information there when she teaches courses that are accessible to the general public.

Celisa Steele (43:08):

You can find links to Myra site along with show notes, a transcript of this episode, and more at leadinglearning.com/episode275.

Jeff Cobb (43:17):

You'll also see options for subscribing to the podcast at leadinglearning.com/episode275. To make sure you don't miss future episodes, we encourage you to subscribe. And subscribing helps us get some data on the impact of the podcast.

Celisa Steele (43:32):

We'd also be grateful if you would take a minute to rate us on Apple Podcasts. Jeff and I personally appreciate it, and reviews and ratings help us show up when people search for content on leading a learning business. Go to leadinglearning.com/apple to leave a review and rating.

Jeff Cobb (43:48):

Lastly, please spread the word about Leading Learning. At leadinglearning.com/episode275, there are links to find us on Twitter, LinkedIn, and Facebook.

Celisa Steele (43:58):

Thanks again, and see you next time on the Leading Learning Podcast.

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