

## **ELC 077: How to Get Feedback from Learners to Improve Your Designs Part 1**

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Connie: Hello learning people, and welcome to episode 77 of The eLearning Coach Podcast. As our field continues to adopt user experience practices, we can always benefit from hearing how others have adapted these practices to learning design. In this episode and the next one, I speak with Andrea Greg PhD and Ronda Reid PMP, who published a paper explaining a usability project they implemented for a new learning management system at Penn State. They used the think-aloud method to watch and understand how users perceived and interacted with the system. Their study validates the benefits of using the think-aloud method in learning experience design. It also demonstrates the notion that designers are not the same as the users.

Andrea Greg is the Director of Online Pedagogy and an assistant teaching professor in the Department of Mechanical Engineering at Penn State. And Ronda Reid is an IT project manager with Penn State's project management office. This conversation went on for so long, I broke it up into two parts. Here's part one. You can find the resources with links and a transcript at [theelearningcoach.com/podcasts/77](https://theelearningcoach.com/podcasts/77/). Here's our conversation.

Hi Ronda and Andrea, welcome to the eLearning Coach podcast.

Andrea: Thank you for having us. Connie.

Connie: I read your research paper and I have a lot to talk about as far as usability, think-aloud method, and other ways that learning experience designers can get better at usability. So, let me start with you Ronda, since you have a strong background in UX. For people who aren't familiar with user experience design, can you define the term?

Ronda: Sure. So, I think learning environments that provides a meaningful and relevant experience to the users that are using that product. But I think also it involves getting to the desired outcomes of why those products were created in the first place. So, when we use the term of user experience design, what we're really talking about is the process of creating products, whether they be websites, mobile applications, or maybe in the case of what we're talking about today, online courses. User

experience seems to generate thoughts of maybe commercial products, so in the case of maybe website design, having a commercial website that you want a user to buy a certain widget, so you want that experience to be as painless as possible for the user so that you have them buy your widget. But in the case of a learning experience, what we want to talk about is having a student walk away with the desired learning outcomes.

Connie: It really is a touch different when we're talking about learning as opposed to buying products. So, what kinds of usability issues do you commonly see in online courses, authoring tools, learning platforms, anything in the entire learning industry?

Andrea: With UX, I think that Steve Krug's book, *Don't Make Me Think*, you say that to a room of educators, whether in higher ed, K-12 or corporate, and it's offensive, don't make me think, we're here to make them think. But the thing that we've always talked about is, don't make them think about things that aren't central to the learning. So, don't make me think about where to click. Don't make me think about how to submit something.

I had attended a workshop years ago, and I think we were all given pins that said something like, "It's not about you." And it's not about what you as the instructional designer or educator intend or want, it's about how the user experiences it. So, it's really shifting the focus from the creator to the user and being intentional about not only designing for that user, but testing with that user to make sure that their experience is what you intended. And we've got lots of stories of that working with instructional designers and getting to watch them see the disconnect between what they thought was obvious and our users, who in our case were learners, found it very non-intuitive. So, I think it's having that goal to make their experience intuitive except where it's supposed to be thought-provoking, which is educational materials, not in getting around the interface.

Connie: A long time ago, it might have been Ben Schneiderman, I remember someone saying the user interface should be transparent to the user. Just like when we're reading, we're not thinking about the letters and the punctuation, it's just completely transparent. We just read. It should be like that.

Andrea: Well, and I know in one of the times that we were presenting this in our environment, which is higher ed, and an instructional designer, or actually

I think a leader of instructional design team said, "Yeah, but we provide how-to videos, like how to get around, how to navigate." And the whole idea is that you shouldn't need a how-to video for how to navigate a website. It should be intuitive in and of itself. So, I think it's getting instructional designers away from the mindset that, "Well, we'll just teach them how to get around," and putting the burden back on us and saying, "Have we designed it so they know how to get around?"

Ronda: I think that's one of the challenges, especially when we talk about user experience design, or maybe learner experience design in the course or an educational context, is I feel that educators come from looking at things in a very noble and altruistic way. They're usually educators who care very much about their students, and wanting to do things to help their students. And I think the example that Andrea gave demonstrates maybe a misguided notion of, "What can I do to help my students?" But I think that is a real challenge of course designers, instructional designers, educators, is separating their emotional connectedness and desire to help with not having that get in the way of achieving the desired outcomes. It is almost like you must separate that to say, "Let me look at this in more realistic terms. Let me test this. Let me see how an actual student is interacting with that," and really keeping focused on what that end goal is. And the end goal of what we're talking about really is, have the educational outcomes been achieved?

Connie: Excellent points. Thank you. So, what kinds of usability issues are you seeing in learning products?

Andrea: I think one thing that can pop up pretty easily is terminology that's very similar, and to the subject matter expert is equivalent, but to a learner who is positioned as somebody who needs to learn is wondering, "Are these the same? It says X over here, and it says XX over here." And to the subject matter expert, that's the exact same thing, but to the learner, they're wondering, they're spending that brain power and that time thinking, "Are these the same or am I meant to think of them differently?" And I think that pops up a lot in fields where there are acronyms, where there are shorthand ways to describe things, where there might be a formal term and then a shorthand way that people in that environment discuss it. So, just being sensitive the language, and realizing that your learners may not either know that shorthand, or even if they are familiar

with it, they may still wonder, if the word on one page is even just slightly different than the word on another, if they're the same thing. So, that's a common thing.

Connie: Are you talking about that in terms of usability or in terms of instructional design?

Andrea: I think it's a usability thing. So, one example that Steve Krug gave was, it was a screen, and this is, again, in Don't Make Me Think, but we'll also talk about his other book, Rocket Science Made Easy, because that's where a lot of the methods for think-alouds can be learned very quickly. And it was about search versus search here, and it had to do with the box. And then if they were clicking on search, or clicking on search here, and I don't remember if the example was on one page it had search and, on another search, here, but when he was evaluating, even if it's infinitesimal, it's causing that dissonance of, "Is this the same as what I just did?" So, yes, it has a structural design implications, but I think it's very much usability because they're thinking about things you don't want them thinking about.

Connie: That's true.

Ronda: I was just going to say, when we talk about online courses or online environment, to me I feel like we're talking about two different things, at least we were in the higher education context. So, in online learning in an institution like Penn State, you can have a single online course, and with that you can have navigation issues or different interfaces within your single course design, which creates minefields for the student. And I think it's to what Andrea is talking about, using more brain power figuring out the environment, the landscape, "What do I have to do to get to the actual learning objectives?"

But in the case of Penn State, you could multiply about for a full course load, where you have one course design is set up in a certain way with a certain navigation structure, look and feel, certain tools that are used, certain platforms, things like that, and then you go to another course, your second course, and it's completely different. So, you extenuate that confusion or your student across the entire educational experience or the curriculum for that semester. So, when we started this at Penn State, a point I tried to make early on is we had our in-person classes, that if I were

taking a history class and I were to walk the campus to get to that history class, I would get there, and I would have that preexisting knowledge of what the campus was, where the landmarks were, how I go, and I would take that with me as I went to my next class. I wouldn't be dealing with a completely new landscape; I wouldn't be dealing with a new map of how I had to get from my first class to my second class in order to learn. But in the online environment, that's exactly what we were doing with our students. So, we can talk both user experience with a single course instance, but then also what we're doing to our students across the entire education experience that they're encountering as well.

Connie: Wayfinding is a good metaphor for navigating the world of learning. Why do you think there's more emphasis on usability when it comes to web design eCommerce than there is in learning experiences?

Ronda: For me, when I brought up this topic, I encountered a lot of resistance. And to me, the way that I processed it was that a lot of the peers that I was talking to had a deep education background and they focused on the educational components, as they should. But I remember talking to my boss once, where I was trying to get the notion of why we should be doing this kind of user experience testing, and why we should be asking our students what they thought about our course design. I referenced, and I'm sorry, I'm sure there's a name for it that I can't recall at the time, but I referenced one of those images where, depending on your focus, you either see an old woman or a young woman, or two faces or a vase. And I said, "I think most educators look at this image and see the old woman." But I said, "What we're neglecting is that there's also an image of a young woman in there too." And in order to be truly successful as educators and to meet our desired outcomes, we need to see that entire package, which for me was not only the education component but also the environment that we were operating in.

And when you talk the environment, when you talk about online learning, you are talking website design, mobile design, and we need to take that into account in order to be successful as a whole. And to me, I think most educators just see one, but they don't see them both.

Connie: So, has there been research, I'm pretty sure there has, but nothing is coming to mind, about how a poor user experience affects learning?

Andrea: What I'll say is that in education research overall, what it consistently shows is that, for lack of a better word, stronger learners, learners with high learning self-efficacy in the topic, and broadly learners that are confident in their ability to overcome challenges, that those learners could be in a physical classroom with construction going on outside, in the back of the room where they have to listen harder to hear the teacher, and they're going to be okay because they have the resources to know what they have to do to fix the situation. With learners that are less confident, have less self-efficacy, or less knowledge of just how to block out unimportant stuff and do the extra work necessary to maybe make sure they can hear their teacher, whether online or face-to-face, they're at a disadvantage, they're more likely to feel discouraged, they're more likely to withdraw.

So, I would say broadly speaking, absolutely, we know that environmental challenges impact learners that are maybe less developed in their learning efficacy than learners that are stronger. And you see it in all the discussion about retention, that students who tend to persist often have already developed some of those skills. So, in an online setting, I think that it just falls into that broad category of the course being harder than it needs to be, impacting performance, persistence, retention, all of those things.

Connie: It makes total sense. Well let's shift to the study that you did, the think-aloud method, and learner experience design, and what it can and does mean. So, just for background, you ran a study where you researched the usability of a new learning management system by using the think-aloud method. Can you explain how this method works, what think-aloud is?

Andrea: Yeah, so I can give it a shot, and then Ronda can fill in with what I missed or what we did. But at its most basic, thinking-aloud involves sitting a person down... Thinking-aloud in a web context. Product thinking-aloud is very similar, but they could be standing up if your product requires them to stand up. But for a web context, sitting a person down, having them navigate your website, try to do something on your website, and articulating not only what they're doing but what they're thinking. So, "I'm dragging my mouse here, I'm about to click here, but I'm wondering if search here is different than search, since it just said search." And in that you're capturing their tendencies, "I'm going to go to this place first," and

you're capturing points of confusion or confidence like, "Oh, I see it's here, this is what I need."

So, the idea is that you're accessing the internal dialogue that you typically don't have access to. So, I would say that's the very basic definition of it, and then I'm sure Ronda can expand on that.

Ronda: So, in terms of what we did, we set up a course area, and we recruited actual students to come in to navigate that course area. And then we gave them very specific tasks that were tied to the learning environment. So, some of that might be, again, using our higher ed background, "You need to contact your professor through the syllabus, how would you do that? How would you get to a certain assignment to complete it?" And then, using the think-aloud method, record what students' process was, what they were thinking as they navigated through those specific tasks as they completed them. And then try to gauge the ease or difficulty which they were able to accomplish a task, or even in some cases they weren't, they gave up and could have been frustrated by it.

Connie: Personally, every time I used to think-aloud method, I am flabbergasted at the different ways people think that I never even imagined. And it really gets you outside your own head because everyone seems to think differently.

Ronda: I think it's a very humbling experience, and I think that gets back to that notion as well, the need for us to separate ourselves from the of emotion and desire that we put into our design, and to separate ourselves from all that blood, sweat and tears that we put into things, to say we need to remove ourselves and really focus on, are we getting the outcomes that we need? And being able to maybe, I know in my own personal case, swallow your pride sometimes in order to do that for the better good.

Andrea: Yeah, you'll often hear people, and I would say this is not just with online courses or online training, it's any website saying, "Well, it's obvious." And one of the highlights of doing this project was, and we got permission to be able to share the videos with people in the university, and we actually went back to individual designers that had put up their course design to be evaluated. And I remember playing one of the videos in a meeting, and one of the designers was almost like she was watching a movie and like in a scary movie, "Don't go in the basement." She was like, "Click there, it's

right there. It's obvious." And the student's clicking over on a totally different side, and what they're articulating is a totally different way of understanding or thinking about the design than she had intended.

So, I think it's humbling, and I think that's how the whole field came to be, that what you have in mind, your learners aren't you, your users aren't you. They don't perceive the world as you did. We talk about this in education all the time. Faculty are not your average student; experts are not your novice. It's often hard for experts anywhere, higher ed, corporate, K-12, to teach because they've got all this integrated expertise, and even just their mental model for it is different than the novice learner. So, I think it's just empathy and not just feeling but knowing, and then through this kind of research, how are people actually approaching this?

Connie: It seems like we talked a lot about the positives. Do you see any negatives in the think-aloud approach?

Ronda: Well, I think one of the things that we learned with our experience is that you have to be careful about how you conduct the think-aloud method, and either looking maybe at the origins of your questions and even they can pose some problems to things. So, as you go into the think-aloud method, can you phrase the question properly, or in a way that's easily to understand? The other thing, and this might be more of an academic sense, is that, unless you do an accompanying maybe survey, or something that you're collecting some quantitative data, it is a lot of qualitative analysis as well, which is definitely valid, but that could lead itself a little bit to interpretation as well. And so, you could be layering the designer's interpretation signs, and then other interpretation of the results as well. So, nothing is ever perfect, and I would still advocate that you do get a lot more benefit from undergoing a process and just really thinking outside of yourself, and getting an actual user or learner into the environment, and being able to learn from them.

Connie: Do you recommend testing the questions first?

Ronda: This was something that I think evolved from our use. So, I went in, did some questions, and stumbled about, and I think as the effort grew, that came to be a weakness from the early efforts on things, not testing the questions early on. So, I think definitely testing the questions and vetting those is an important component.

Andrea: Yeah, it's basically parallel to the think-aloud. In survey design, one of the steps is testing questions through a bit of think-aloud. So, as you're reading this question, what are you thinking? What do you think it means? How are you interpreting the terms? So, I think anything that we're creating for others to use, the more we can get some sample others to use it before we put it out there is always helpful.

So, I think it just becomes a matter of time. And with think-alouds, it's time-consuming. And we chose, because we're in higher education, and one of the currencies of higher ed is presentations and publications, we chose to go that more formal route. You certainly don't have to do that. And I have done very basic think-aloud feedback. I think this is in Steve Krug's book, grab one random person off the street, put them in a chair and have them try to do something on your website. That's more important than finding exact demographics, et cetera. But I think for us, because we had chosen to go the more scholarly route with it, in addition to the practical side, that added a lot of time and complexity.

I think another common usability test in addition to think-aloud or instead of think-aloud is eye tracking. But that brings its own set of things, which is the data is really messy, and complicated, and hard to parse out. But you can talk about the pros and cons of each of those. For me, think-aloud is great because people generally, they have to be coached a little to know how to articulate their thoughts, because it's something you're not used to doing. But once you make it clear to them, you're not testing them it, you're testing the website, it's just so informative. It just reveals so much. And the other really good thing about think-alouds, especially if you get permission to record, is it ends debates. So, you can have instructional designers, or training experts, or whoever, debating how something should be done, and the why's, and it can get deep, or cognitive, and then you just play them a couple videos of people trying to do what they think is obvious, and it ends it. So, that's another reason I really like it, is it shifts it away from sort of how it should be to, here's how it actually is. In the real world when somebody's trying to do this, here's where they're confused.

Connie: Great points.

Ronda: I echo what Andrea said with just the power of those videos, when we showed them there's a removal from the educator to their student, or the

designer and their student. And having that video bridges a gap, in a way, to see how your student is interacting, how are they interpreting what you intended? And that's not something that you get in an online environment. You get that immediate reaction maybe in an in-person, actually, that the students aren't getting something, you've lost them, they're confused. But to see the actual videos, it really impresses upon people they got lost, and it might not have been lost on a learning concept, they just got lost in your environment, and made them think too much, and it made them think on the wrong things.

Andrea: And to go back to what you've said at the beginning, Ronda, about an on-campus student, or doing a standup training, if your students, or employees, or whoever, walk into a room and don't know where to sit, you tell them where to sit. In an online course or an online training, you're not there when they don't know where to metaphorically sit, you're not there when they don't know where to start. So, it just puts so much more on this kind of testing because you can anticipate where they might be confused, but you're not there synchronously to correct the confusion, or give those in-the-moment coaching like, "Oh, we're going to actually gather over here because it's a group discussion," or, "You guys are fine to sit in the rows, we're going to just use that approach." And those are the things that get forgotten when you're doing online training, or online course design, that there's so much more burden on good design that you can wiggle out of in face-to-face because you're there dynamically to address gaps, or things you assumed that were incorrect.

Connie: I'm hoping that this discussion will inspire more people to try usability testing. If you found this conversation valuable, I think you'll really enjoy part two, where Andrea and Ronda go deeper into pairing usability testing with learning design.

Again, the show notes and a transcript are at [thelearningcoach.com/podcasts/77](http://thelearningcoach.com/podcasts/77). Take care, and I'll talk to you next time.