Episode 172: Nicola Ulibarri

**KL:** Katie Linder

**NU:** Nicola Ulibarri

**KL:** You’re listening to “Research in Action”: episode one hundred and 172.

[intro music]

# Segment 1:

**KL:** Welcome to “Research in Action,” a weekly podcast about topics and issues related to research in higher education featuring experts across a range of disciplines. I'm your host, Dr. Katie Linder, Research Director at Oregon State University Ecampus, a national leader in online education. Along with every episode, we post show notes with links to resources mentioned in the episode, a full transcript and an instructor guide for incorporating the episode into your courses. Visit our website at ecampus.oregonstate.edu/podcast to find all of these resources.

On this episode, I'm joined by Dr. Nicola Ulibarri, an assistant professor of urban planning and public policy at the University of California Irvine, where she leads an interdisciplinary research group that studies water and infrastructure management. Her group combines approaches from environmental planning, public administration, and water resource engineering to improve the interactions between people, infrastructure, and the environment.

In 2010, while doing her PhD at Stanford, Nicola collaboratively developed a workshop curriculum to enhance busy researchers' creativity with design thinking, a human centered approach to innovation. That team recently turned the curriculum into a book, Creativity in Research: Cultivate Clarity, Be Innovative, and Make Progress in Your Research Journey from Cambridge University Press. The book presents key abilities that underlie creative research practice through a combination of scientific literature, vignettes, experiential exercises, and guided reflection.

Thanks so much for joining me on the show today, Nicola.

**NU:** Thank you very much, Katie. I'm delighted to be here.

**KL:** So people who listen to this show know that I am super interested in creativity, we've talked about this topic a couple other times on different episodes, but I know that you have a book coming out on creativity and research, and this is so exciting and I cannot wait to read it. What led you to write this book on creativity and research? I know it kind of came out of this collaborative project and I would love to hear more about that.

**NU:** Yeah. So the project started essentially as a workshop curriculum back in 2012 ... Or sorry, not 2012, 2010. And I was doing my PhD at Stanford University at that point, and there's an Institute, the Hasso Plattner Institute for Design at Stanford, it's also called the D School, and they teach this thing called design thinking, which is essentially a creative problem solving methodology that's really focused on addressing human needs. And there was a group of us that saw this awesome curriculum that the D School was teaching that was generally applied outward looking, so it was thinking about how do we redesign the healthcare industry or how do we household products more user friendly? And we were realizing that there was also all of these researchers at Stanford who could really benefit from the curriculum. So for instance, I had taken a class in design thinking in the first quarter of my PhD and saw, "Hey, this is really cool for helping me frame research questions or solve problems in my own research process," and there were a couple of other people who had similar experiences. So we kind of threw together a workshop curriculum and brought on a couple of friends to test it out for our first pilot workshop, and it went really amazingly well.

And so we have been teaching various versions of this creativity and research workshop over almost the last decade and consistently having far more demand than we could ever keep up with for the actual workshops. So it was always a joke in the back of our minds of, "Oh, we should write a book one day maybe," and then, what was it, two summers ago I was asked to review a book and the publisher, or the editor afterwards, asked me, "By the way, do you have any ideas for a book?" And I kind of threw out, "Well actually, I do. I've got this idea on creativity and research," and that then forced us to put together a book proposal and the whole nine yards of producing a book. And so it was always something that we had dreamed about, but it was a future project and now it's actually a real thing. So yeah, the book is basically taking the workshop curriculum and putting it in a form that people will be able to use and access anywhere in the world.

**KL:** Awesome. Okay, so we're going to dive into more of what's in the book soon, but I do have a question, a follow up, because this is the way that some books I know are written, like Wendy Belcher who we had on the show a couple of times, her book was written, Writing Your Journal Article in Twelve Weeks, after, like you said, years of teaching this material. And then also my book on blended course design, I also wrote after running workshops on blended course design. I'm curious if you can talk about the benefits or maybe even the challenges of trying to write a book after getting lots of maybe audience feedback of what's helpful, what's not helpful, what are they resonating with in terms of the material? Were you able to take that decade of experience working with this material and infuse it into the book? And what did that look like, especially in a collaborative authorship environment? That just seems very messy to me. Could you talk to us a little bit about that?

**NU:** Yeah, for sure. So it was, I think, both a blessing and a challenge, as you said. I mean, blessing is that we had a ton of material to work with. So first of all, were the key ideas that sort of, the big ideas if you will, to use pedagogical language, that we were already teaching in our workshops. So these are, I'll be talking more about them I'm sure, but the big creative abilities, which are things that creative people do that were the core of what we were teaching. The challenge in turning it into a book was firstly, I think, framing, figuring out how exactly to divide up these abilities because some of them overlap a lot. And so when you're saying this is a chapter on mindfulness or this is a chapter on problem framing, you need to decide what goes in that chapter and what goes somewhere else.

And there also was then taking the curriculum where ... When you're giving a lecture it needs to be empirically-based but not a whole lot of detail, but really making sure that every single thing that we were saying was grounded in the scientific literature. And so there was a whole lot that ended up on the cutting room floor, if you will, that these are ideas that we've heard from various people but if we really can't trace it back to the literature we can't continue to say, well this is an empirically proven strategy for building creativity.

**KL:** Okay, so let's dive in a little bit to this content because I'm fascinated. I want to know more. So how do creative abilities bring clarity to the research project? I know this is kind of a main premise of this book, can you give us a little bit of a rundown of that?

**NU:** Yeah. The book is really about building what research calls creative confidence, which is essentially a person's belief in their ability to successfully create whatever outcomes they desire, so it ties really closely to the idea of self efficacy for folks who are familiar with Albert Bandura's work. But it's basically saying, if I have a dream of coming up with this really innovative research question or a dream of figuring out a way to be more efficient in my research process, by learning these tools, these abilities, I can actually see how to get from point A to point B. And so what it means is that it helps you be more intentional with how you go about doing your research.

So I think a lot of scholars, when it comes to actually setting up a research design and a project, there we're really intentional, okay, this needs to be ... "I'm doing an experiment and I need to select this number of cases and this is how I'm going to randomize," et cetera, et cetera. That's all very intentional. But a lot of the other things we do in research, we tend to just react. We tend to write the way that we've always written and in the places and times that we've always written, we tend to interact with colleagues in the times and places we've always written, we tend to pick up new research ideas kind of on the fly instead of really cultivating them in a way that helps us decide which are the projects we want to be taking on and how to make those projects maybe more impactful. So I think it's that intentionality that helps come up with, "Okay, what am I going to be researching and how can I move forward in that research in the most effective way?"

**KL:** It's incredible to me, when we really do think about it, that we don't always come from those planful perspectives. It is kind of a fly by the seat of our pants situation sometimes when it comes to our research. Maybe not everyone would admit that.

**NU:** I think part of it too is just the reality like ... I know my day to day life, and I'm assuming a lot of listeners' day to day life is just busy where we have so much more on our plates than you can possibly fit in, let's say, a 40 hour work week. And so you end up by necessity then just trying to triage among everything. So that's the challenge, but it's also the opposite of what research on creativity, which says you need large open spaces of time to really be able to mull over ideas and have them arise when you're in the shower or brushing your teeth. That's not the reality of academic life.

**KL:** Right. Okay. We're going to get into some of these tools for people who are listening and going, "tell me more. I want to know the tools." But first, I'm wondering if you can talk a little bit about the relationship between creativity and innovation? Because I think for research in particular, part of the goal is to be innovating and bringing new ideas to the fore for other people to build on, why are both of these things important for research? From a foundational perspective, why is this something that should be our goal when we're trying to think about how to form research projects with creativity and innovation in mind?

**NU:** So innovation is actually ... If you look at the definition of creativity, innovation is kind of a core feature of being creative. So creativity is essentially about creating something new or novel. And that something can be an idea, or it could be a product, it could be a research project.

There's some debate about what counts as innovative. So there's two perspectives, there's a big C perspective of creativity, which says that you need external validation for an idea to be creative. So you need other people to look at this and say, "Wow, this is new and really cutting edge and it's a new idea." Versus there's a idea of little creativity which says as long as it's something new that hasn't really been done before, that counts as innovative as well. And I think for research in particular, this idea of thinking about innovation and novelty is particularly interesting because research isn't just about coming up with the ideas, but it's also about making sure that those ideas actually work. And so you have this balance between broad brainstorming or coming up with generating lots and lots of ideas, and then analyzing them and testing them out. And actually what has been shown over and over again is that the more that you do the deep dive, analytical thinking, the more you read, the more you are totally immersed in a dataset, you actually create more fertile space for interesting ideas and novel combination among your ideas to emerge. So you end up with this continual balance between new ideas, narrowing down those ideas, new ideas, narrowing down those ideas that helps you get towards that innovative product or process, whatever you're looking at.

**KL:** I love that. So I'm curious, Nicola, if you can talk about this idea of a pipeline and how having multiple projects on the go at once might work for that? Because I think some people think about doing that within a project, but maybe not across projects, and especially projects that may not on the surface appear to be connected. But in our research work, we often do all kinds of things in collaboration and individually, is that one way to create this dialogue between things, by having multiple projects on the go that you're in and out of all the time?

**NU:** And that's an excellent idea, and I actually haven't thought about it explicitly as a way of building creativity, but I think it would definitely help because if ... Basically, for the idea generation space or mindset that you want to be in, you need to step back and let yourself start to see connections between things, abductive thinking is the term, that maybe you don't normally see together. And so absolutely, if you have projects that are maybe working in different regions of the world or on different topics, you start seeing, "Oh well that thing that I saw over in this place, maybe it's playing out here and what could I explore that a little bit more and see if that's playing a role?" So, yeah. And I think that that would absolutely help create ... As long as you're willing to step back and do a little bit of reflection over what it is that you're seeing across your multiple projects instead of just focus head down on, "Okay, now I'm writing this paper and I need to ignore everything else that's happening."

**KL:** Right, right. Okay. So I'm curious if you can talk about if this has impacted your own practice? Working on this book, are there certain things you've taken away to try to carve out this time and space to try to make sure that you are being creative when it comes to your research endeavors? What are maybe one or two things that you've taken away for your own personal practice?

**NU:** Yeah. I think for me there are two big pieces. One of which are actually reminding myself to use the abilities, which I'll talk about in the next segment. The other one is basically just trying to be mindful of what I'm doing and noticing when I start getting into a repetitive pattern where I could potentially need to step back and look at the big picture again. So I see this a lot when I start feeling stuck on a project.

So for example, one that's happened to me a couple of times recently is when I'm working on a big collaborative grant proposal, let's say, and I've been assigned a particular section to write on the grant proposal, and I feel totally and completely stuck of like, yes, I could come up with a series of research questions and a way to answer these research questions, but either I'm not feeling excited about it or I'm feeling just that it doesn't feel like it's going to be particularly impactful. And realizing, okay, that's a signal that there's something else deeper going on that maybe I need to see. And sometimes it might be something emotional where I don't feel like my actual expertise is being heard by other members of the team and I would like to have more of a say in the broader visioning of the project. Or maybe it has something to do with recognizing limitations of one meeting to see better how my piece fits with other ideas or pieces within the project.

And so I think for me it's learning to recognize when maybe I'm not working as effectively as possible by taking a little bit of time to reflect and be mindful such that I can then step back and say, "Okay, how could I come at this challenge with a new lens or come up with a way to actually help myself move forward?"

**KL:** Okay. Well, Nicola, I think we've held people off for long enough, they all want to know what these tools are, so we're going to take a brief break. When we come back, we will hear more from Nicola about some empirically-based tools for creativity. Back in a moment.

The “Research in Action” podcast is just one of many projects we diligently work on here at the Oregon State University Ecampus research unit. It's our mission to make online teaching and learning research actionable, and one way we're doing this is through the recent release of our Report Readers Checklist. This resource includes a comprehensive set of criteria that offers readers a guide to evaluate the quality and rigor of online education study reports that they may encounter in their work. Learn more and download the checklist ecampus.oregonstate.edu\checklist.

# Segment 2:

**KL:** Nicola, I'm so excited to talk with you about some empirically-based tools for creativity that will help bring creativity into the research process. I'm wondering if you can talk about some of your favorite tools that get discussed in this book, are there certain ones that have just a special place for you in terms of either your own work or just how well you've seen them work for others?

**NU:** Absolutely, yes. So what I would say the tool or the ability that I have embraced most wholeheartedly in my research is what we call iteration and experimentation. And this is basically using quick continual cycles of coming up with ideas and testing those ideas out to really quickly move an idea or a project forward, so it's based off of the idea of what's called divergent and convergent thinking. So divergent thinking is when you spend time deliberately coming up with lots and lots of ideas and then convergent thinking where you hone in on some of those ideas. And for me, the biggest part of this has been using a tool that, in design thinking jargon, it's called prototyping. And prototyping, for folks who are coming from software design, they're thinking, "Oh, you build a pilot or a pilot product and then you test it out," and for design thinking, it doesn't have to be necessarily an actual thing that you build. But instead, the intentional use of small failures, if you will, and then testing out those things that you know are not going to work but will help you learn. And then quickly taking the feedback that you get from testing that out to design the next day iteration.

And maybe an idea to give you how I've used this is actually from when I was coming up with my dissertation project during my PhD. And so during the first year of my PhD, I had a lot of encouragement/pressure from my advisor to come up with a project as quickly as possible, and I decided I would be studying drought management in agricultural lands in Western US. So for listeners, my research is not at all about creativity. My research is all on environmental governance. This book is very much a side project. So I went [inaudible 00:21:52] heartedly into drought management, drought planning, and read up a ton, and then spent that first summer doing some research actually on drought planning and realized I would be miserable if I made it my dissertation project.

And so I came back in the fall and sheepishly was like, "So I don't have a project yet, but I promise I'll get you one by the end of the quarter." And at that point, I had already started teaching these workshops and I was already in the group of thinking in this way, and so what I did was instead of coming up with a single project and running it with that, I chose three distinct potential research questions or research areas to work in. And one of them was still looking at drought but stepping back from the specific questions I was looking at previously, one was on dams and dam operations, and I don't remember what the third was, but they were all in a space of water and how people make decisions about water. And I did exactly what you would when trying to come up with a research project in terms of reading the literature, talking to practitioners and other academics, thinking about potential research questions and research designs. But I didn't really intentionally using all three projects as if they were my real project as opposed to just one.

And so freeing myself from being attached to, "Well, this project has to work because otherwise I'm already a year behind," and instead saying, "Okay, one of these projects is going to work or something else." And actually what ended up happening was part way through the fall I ended up hearing a lecture about dam removal and got super interested in that and realized that it was a very fascinating area that hadn't actually been studied all that much, and ended up pivoting. And so it wasn't one of the three areas I talked to [inaudible 00:23:53] or that I had initially proposed, but ended up making that part of my research.

And the funny part is in my first year I had actually taken a class where we spent a quarter of the class talking about dam removal, but at that point I thought I was studying drought so I kind of ignored everything about dam removal and didn't think that was interesting. So that, I think, is thinking about ... Prototyping. There's a lot of different ways to do it in research. The example I just gave is a much more extended version of prototyping where you're saying, okay, I'm going to test out these three ideas and see how they all work. You can also use prototyping for if you're writing a conference abstract, two versions or three versions of the conference abstract really, really rough and see which one speaks to you the most. Or you can prototype conversations with collaborators, or advisors, or advisees by maybe writing a script of what the conversation might go. You can, before you spend a lot of time coding and designing a perfect figure for a presentation or for a paper, sketch it out really, really quickly by hand and show it to a couple of people. So the idea of prototyping is to develop a low resolution, very way that you can get feedback on whatever your idea is quickly and it help you refine those ideas.

**KL:** It sounds like one of the benefits of this tool, maybe a side benefit that's not intended, is that it kind of leaves you a little bit open to serendipity because maybe something just randomly occurs, like when you went to see this talk on dams, and this was something that ended up being very interesting to you, but if you hadn't been open to that ... Like you said, the first time it came around, you didn't really notice it and it came at the right time and so you were able to see that. So it seems like the idea of prototyping is also just leaving yourself open to the process of thinking about drafts, and play, and what if this, what if that. And it creates this space for other things to pop in.

**NU:** Absolutely. Yes. Yes. I think one of the biggest benefits that I've seen, certainly in my own research, but also through all the students that we've taught over the years, of learning to let go of perfection and being super attached. It's easy to start identifying really strongly with your research when that's ... I mean, that's our livelihood, that's what we do. And so by with the prototype, first of all, if you're starting with multiple ideas, then you're less attached to any one of those ideas working out than if you had only one idea. Or even if you're only working off of one idea, but you're intentionally treating that idea as a draft that will find necessity change, then it means, okay, this is just a draft. It's just the first version or the second version. And I know I'm probably going to get to version a hundred before I consider it done. Then it doesn't need to be perfect at that moment. You relax around all of the stuff that you're working on and then exactly that's when you are open to serendipity to this idea coming in out of left field that maybe you want to pivot and start tackling or to be able to combine with some of the things that you're already thinking about or working on.

**KL:** Okay. I love that example. Do you have another example of another-

**NU:**Another tool?

**KL:** Yeah, seems to work well for people.

**NU:** The other tool, and this one I would say particularly is important for students, for PhD students and other research students, but certainly for all practicing researchers is thinking about feedback and thinking about, the term that we use in the book is teaming. So it's not teamwork but teaming. And so the idea is to intentionally create opportunities to get feedback throughout your process from a diverse range of individuals. For people who work maybe in a lab setting they think, "Oh I already work collaboratively with people", but they're probably only getting feedback from maybe other students in their lab, or from a postdoc, or a PI versus what we're saying is to look for people in other disciplines, or look for people at other career stages, or maybe from other institutions entirely that you can also get feedback on. So that's the idea of teaming.

And the key here is bringing people in as early as possible in that iteration process. So if you are feeling stuck on something or if you have a new idea, don't wait until that idea is totally polished and defensible and you have read every last thing in the field before you share it with your advisor or before you share it with other people. And instead, maybe sketch out a quick, here's the rough overview and take it and shop it around and see how people react and see ... You'll get feedback on, "Oh, have you read this?" Or "Oh, I think that that was already studied, but there's a really interesting new offshoots that happened." And so by starting the feedback process early on, you create the opportunity that you can actually incorporate that feedback. And again, it also makes you less attached to that initial idea so you'll actually listen to the feedback as opposed to ... Everyone's gotten the paper dripping with red ink type feedback where it just is overwhelming and I don't know how I'm going to even start to incorporate all of this. And so the sooner in the process you can start getting ideas and feedback from other people, that'll both help you reframe things in a new and potentially more creative way, but also make it such that you can take some of that feedback and move your project forward instead of feel frozen when you get that feedback.

**KL:** Yeah. I love the idea of reframing feedback as hopeful as something that's contributive to a project and not like a gatekeeping thing because I think sometimes we think about reviewer feedback as I just have to get through this in order to publish. Whereas, it's very generative. There's always a lot of good ideas, I think, that come out of feedback, at least I found, I love feedback. It's not always easy, but it's always contributing to my thinking.

Now. Nicola, some people might be listening to this thinking "This all sounds well and good, but I am a busy researcher," like we talked about earlier "and I really need to be productive," and how does all of this stuff feed into that in terms of it could take more time to build in the space, to build in the feedback, to build in the prototyping? How do these creative abilities help with research productivity? Because that's probably what's on people's minds.

**NU:** Absolutely. It might feel like you are spending more time doing the prototyping or getting feedback, but in the long run that it actually does help you become more productive because it helps you move projects forward faster and in a way that you won't necessarily hit roadblocks when you come up with something that you didn't personally foresee. So I think for a lot of people, it comes back to this idea of letting go of perfection is one piece. So I have a number of colleagues that will sit on a paper for ages until it feels absolutely flawless and they've shopped it around for friendly reviews a ton of times before they ever send it out to a journal for review. And I probably err on the side of too sending things out perhaps on a little bit too early, but again, on the vein of getting feedback, I make the paper as good as I feel like I can get it and then I send it out and I see what will happen. And yes, sometimes they get rejected or sometimes you get really rough R&Rs, but that paper is then one thing that is off my desk and other people can be working on it essentially and I can turn my attention to other projects.

It also helps for a lot of people to learn to recognize when you're stuck and to have the tools how to get unstuck. So I mentioned the idea of when I'm feeling blocked writing a grant proposal, but I've seen it over and over again with our students as well of just feeling paralyzed of I don't know what I'm doing with my dissertation, or I don't know how to come up with a good project, or I don't know how my advisor is going to react. And there you have by being able to notice, okay, what's going on? What are the emotions that I'm feeling? What are the different habits, behaviors that I'm noticing? What is it that might be going on? You can start to frame a problem around I can't write this grant because I don't feel like my contribution is being valued. And then from there you have an actual tractable problem that you can come up with ideas and test out whether those ideas will help things move forward. So prototype can be something you do in five minutes. It doesn't have to be I'm going to take a week out of my life now to move this project forward or to try to get unstuck on this.

And I guess the last piece that I would say is also you can apply all of the creative abilities to a research process. So thinking about figuring out when and how you write the best and actually playing around with that and thinking about, "Okay, I'm going to prototype. I'm going to test out what would happen if I wake up every morning and write first thing in the morning for 15 minutes. What does that do for my productivity? Or testing out different locations, or testing out what is it like to write with other people versus not with other people." It's this idea of continually experimenting, learning, playing with your research. It doesn't have to take a ton of time and it can help you then find the rhythm that helps you be more productive in the long run.

**KL:** Well, Nicola, this has been so fun and also so practical. I appreciate how you take these tips and bringing them to a level of we can do this. Like we can actually incorporate this, it's reasonable and it's going to lead to more productivity, what more could we want? Thank you so much for taking the time to come on the show and share a little bit more about your book, Creativity and Research. And we will definitely link to it in the show notes if people want to take a look and find out more information. Nicola, this has been really great. Thanks so much.

**NU:** Absolutely. Thank you, Katie. It's been a lot of fun

**KL:** And thanks also to our listeners for joining us for this week's episode of “Research in Action.” I'm Katie Linder and we'll be back next week with a new episode.

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# Bonus Clip:

**KL:** In this bonus clip for episode 172 of the “Research in Action” podcast, Dr. Nicola Ulibarri talks about a recent experience collaborating on a book manuscript. Take a listen.

Nicola, I would love to hear a little bit more about this co-authoring experience that you had writing this book. It is always fun to get a little bit of a peek behind the scenes. Can you tell us a little bit more about that process?

**NU:** Yes, absolutely, Katie. So first to start, this book was one of the more intensive co-writing experiences I've ever had. So myself and the second author, Amanda Cravens, really produced the bulk of the text. And one of the challenges that we faced is that Amanda is an employee for a federal agency. So she wasn't allowed to work on this book at all during her working hours. So it was all fitting things into evenings and weekends and times that were not nine to five during the week.

And we also had a very tight deadline from the publisher. So we had slightly over a year from when we had the contract to when we needed to produce the finished manuscript. So what we ended up with was we started from our workshop curriculum and outlined, these are the chapters that we envision and we would ... We spent so many hours on Skype together doing outlines.

First we started with rough outlines of each individual chapter, what are the key ideas, and come in with a core framework. And then we would divide up these chapter by chapter, who's taking which sections to write a rough draft. And then we would set ourselves, okay, and that's the goal for a week from now or two weeks from now, depending on what our schedules were, how much we would have written.

We ended up though, recognizing fairly early that some of that process didn't necessarily work. So one piece was that the first draft of each of those chapters was by necessity actually really rough. And it was more just for us to collect all of our ideas and figure out the flow. And then we ended up having to restructure and it was again all on all on Skype. The two of us working through everything together. Another piece was I had initially taken on a lot of the literature review sections in these chapters and recognizing that that it was just taking a ton of time that I didn't really need to do.

And so I ended up applying for a mini grant from my institution and getting money to hire a research assistant to help do all of those literature reviews. So with our weekly check ins we had a lot of opportunity for recognizing, "Okay, this is what's working, this is what's not." And continually readjusting our process.

So we ended up, the two of us got to a fairly complete rough first draft of the book and then met with the full team in person. And at that point I ended up restructuring a lot of the book based off of what they had seen and our sharing of the book. And from there, actually created a whole new chapter that needed to be written. Recognizing that maybe there were two separate sets of abilities and then from there the two of us then divided it up chapter by chapter and I would take a whole chapter to get to the finish line. So it was a lot of back and forth and very, very closely working in person on Skype, I guess. Of actually writing together in Google docs. It was a fun process.

**KL:** Thank you so much for sharing about peep behind the scenes, Nicola.

You've just heard of bonus clip from episode 172 of the “Research in Action” podcast with Dr. Nicola Ulibarri talking about a recent experience collaborating on a book manuscript. Thanks for listening.