Jonathan Richter_final

📅 Mon, 4/12 3:31PM   🕐 31:14

SUMMARY KEYWORDS

people, technologies, learning, virtual, immersive learning, pandemic, campus, world, space, digital, immersive, jonathan, interested, xr, zoom, angle, immersive environments, education, students, educational technology

SPEAKERS

Justin Angle, unknown, Jonathan Richter, Lily Clark, Smoky the Bear, Nora Sacks

---

Jonathan Richter   00:00

We're not going to put the toothpaste back in the tube, that the things that the pandemic has hastened, has pushed educational technology, timed right while the XR takes off, is going to make profound differences across the world.

Justin Angle   00:18

This is a new angle. And I'm your host, Justin Angle. This show was supported by first security bank, Blackfoot communications, and the University of Montana College of Business. Hey, folks, welcome back. One thing I think about a lot, is what the world will look like on the other side of this pandemic. What things will we go back to? And what will we leave behind? I think about this a lot in terms of how work gets done and how education gets delivered. Many of us in higher education flipped to zoom pretty quickly last spring. But zoom's never really been the right tool for the job. That's why I'm excited today to speak with Dr. Jonathan Richter. Jonathan is the President and CEO of ilearn, the immersive Learning Research Network, I learned as an international organization of developers, educators, and research professionals collaborating to develop the scientific, technical and applied potential of immersive learning. These folks are out there on the frontier of how to communicate and collaborate using the best of technology. Jonathan, welcome to a new angle.

Jonathan Richter 01:33

Thanks, Justin. I'm super glad to be here. Wow.

Justin Angle 01:36

Yeah. Well, I'm happy to have you here too. So I don't really know how to describe what you do. So what would you say your job is?

Jonathan Richter 01:44

Well, a lot of it's kind of boils down to educational technology. It's using technology to help people learn. And I was a teacher educator for a number of years, worked in both elementary as well as high school levels back in grad school and working my way up. And then Teacher Education did did educational technology worked as a research associate, designing computer interfaces for people with learning disabilities, okay, so we took the knowledge for what works for students learning with disabilities, and then ported that into a computer environment I ran did that for research for a while. And my boss said, you should research some other things that you're interested in. So I picked video games. And that that translated to studying these immersive environments, video games, virtual reality, augmented reality, etc. So that's, that's kind of what I do every day is, is helping look at some of that promise, finding some of the reality the what people are actually doing with it to make learning gains, and then helping to showcase that.

Justin Angle 03:04

Yeah, let's maybe go back to some of that vocabulary, because listeners might not be familiar. So what is immersive learning and VR xR, like, What are all these things?

Jonathan Richter 03:13

Yeah, there's lots of discussions as you can probably imagine, in an emerging field, that's what is immersion. So immersion, immersion, of course, is, is when you're reaching that state of flow, or it's it, you know, by when you're when you're into something, I was really into that book, you're immersed in that book, or when somebody tells you, you just had to be there, you know, I can't really explain it, it was it's you have to you have to understand the situation with all the dynamics moving around in the environment at that time, that's a type of immersion. And immersion can can mean just from the technical idea like computers, providing you a stimulus, right so so you can be fully encased in the digital world. And that's what people call virtual reality you know, the virtual the the digital is

fully surrounding you, if you've got a helmet on, or your like your body is it feels like you're in that digital environment, right? But it's also immersive when you are out in the aka "real world" out in the physical world and you're looking around you and you're interacting with all of the amazing things that this world has to offer. And the digital comes in when there's sort of a you can look through a phone or your glasses at a digital overlay that lies on top of the world around you. So like the yellow line at the fit that that the goal line to get to know, yeah, football. We are know that yellow line isn't really there, it's just showing to us on TV as we're watching the game, there augmenting reality, in the same way that a pilot flying an airplane, they're looking through a special lens at, you know, how far away is that other plane up to my rate, you know, it's so many meters are so many so many are okay or increasingly as you're driving. And of course, you know the self driving cars, they're using technologies that are taking cameras, judging how the distance between things and making decisions and augmenting the drivers cognitions and ability to make a difference.

Justin Angle   05:43

So do we know that, you know, immersive is better? Like is immersive learning better than than learning? That's non immersive? I would assume so. But like, Is that is that a premise we know about?

Jonathan Richter   05:54

Well, that's a great question. Because it you know, takes a lot of effort to make something and you know, using the digital enhancements, is what we focus on. And it takes connected sets of expertise, it takes a it takes an investment in equipment, it takes design, it takes, you know, assessment. So a lot of effort has to go into doing these things well. And so whether there's a return on that investment or not is is a is a great question. But back in, I think 2009 there was enough evidence across the scientific fields to for science journal, an article written by Dr. Chris DeeDee at Harvard, pretty much, you know, demonstrated that the body of evidence is in that here are different circumstances in which the investment is worth it.

Justin Angle   06:47

Okay.

Jonathan Richter   06:48

So those are things like when you need to show somebody multiple perspectives, then then that kind of in that kind of training tool is better than any other route.

Justin Angle 07:03

When you say perspectives, do you mean like visual perspectives like point of view, or like more of the metaphorical perspective?

Jonathan Richter 07:10

Both like it could be taking on the role of somebody who was in the Civil War. Or taking on the role of somebody who looks different than you. Or is differently abled than you.

Justin Angle 07:22

Yeah, I guess those two concepts of points like that. It's not it's not necessarily either, or in the context of immersive learning, right? You confuse the dimensions of point of view, I suppose.

Jonathan Richter 07:34

Yeah. I mean, you can be you can take on, it's like, it's like doing role playing, like dressing up in a Halloween costume and becoming Darth Vader or, you know, you, you embody it. But going into the setting, where there's sort of cultural demands, and there's also the physical environment, you know, you can touch the x wing fighter, that that really helps create the being there understanding in a way that almost no other no other teaching tool does as well, except for, you know, like taking somebody if you're, if you're learning Italian, let's go to Italy. Sure. Yeah, that's very good. But the digital is plastic is the idea, right? So you can shape it and change it, you can create a virtual simulation of walking on the moon, and then suddenly, you're walking on the bottom of the ocean, you can go to different scales. And that's the other DeeDee's article talked about when you're when you're teaching someone situated. Understanding of scale, you know, what does a billionth of a meter mean? Or what the if you can zoom up to the cosmic level? And how far actually is it between Saturn and Neptune? You know, like at the invert in virtual reality, you can see that an embody that space.

Justin Angle 08:56

Yeah, yeah, you can really sort of just understand it at a level that's not quite so abstract, I would suppose.

Jonathan Richter 09:02

That's it, it makes the abstract concrete. So things that are complicated, or abstract to humans, and there are many things in our world that are abstract and complex. We need metaphors or things to help us have understanding in ways that we can manipulate or take those understandings and be able to make them actionable. And when the virtual is anchored to presentations that match to the to the real world or to some sort of outcome, then they become pretty powerful as sort of scaffolds or ways of showing people these abstract or complex ideas. And that's also Chris DeeDee talked about that when you're talking about transfer from one from the from a teaching mechanism. to the real world, the virtual or immersive environments do a better job than most other. So you can, you can, there's virtual environments of, of nursing technologies. And they'll they'll show beginning nurses, the different machines that are in the operating room and in the waiting room and in the patient's room following surgery. And the nurses coming into the surgery room, they get an overview of the technologies that are in the room, they learn the positions of the buttons, they learn, the basic, where these things are used. And when these things were used during surgery, they do the basic training in the waiting room and outside of it, and then in the hospital, in the patient's room in the hospital. And then when they actually go into the surgery room and these these are this is technology and equipment that's very expensive, and you don't want to break it, right. And so they don't have lots of practice opportunities for these nurses to come in and just fiddle with it. For a variety of reasons, the virtual environments can cut through that initial layer, so they really understand what it is when to use it, where where it is. And then when they go into the real world scenarios, for practice, through medical school, they kind of they drop right into the deeper questions they drop right into the to the more contextual things that the master surgeon teacher can get at.

J

Justin Angle   11:34

Yeah, sort of just speeds them through the the mechanical familiarity with the context, so they can kind of learn the stuff that makes sense. Yeah. You know, one of the settings that you and your colleagues and I work a lot in and on is your virtual campus. And you had we had an engagement with you on your campus with a class of mine a couple of weeks ago. I mean, it was fun. It was mind blowing for me for the students tells me what is a virtual campus? And like, why is the Virtual Campus better in some ways, then and then a physical campus?

J

Jonathan Richter   12:08

Well, the immersive learning Research Network, if I could just back up one quick second. So I learned the immersive learning Research Network. We're platform agnostic, and we are interested in all of these different sort of virtual and augmented reality. There's a thing

in between called mixed reality where it's partially virtual and partially augmented. We're interested in that haptic gloves where people can put their hand in the glove and they can feel things that are in that virtual space, or boots, there's a full body suit made by a company called Tesla suit, not related to Elon Musk, but they're using for for teaching and training for occupations like fire fighting and all sorts of other things. So we're interested in this whole panoply of different technologies.

J Justin Angle 13:03
A New Angle is supported by First Security Bank, Blackfoot Communications, and UM's College of Business. Access to capital, broadband and education are three ingredients any community needs for success.

U unknown 13:16
Raging wildfires have scorched a record number of acres and killed at least 31 people.

U unknown 13:20
Continues to climb from those devastating wildfires.

J Justin Angle 13:22
And last year, wildfires scorched a landmass nearly five times the size of Yellowstone National Park. It was the largest area burned since reliable records began. Fires are getting bigger and hotter, and more devastating than ever before.

J Justin Angle 13:39
What all that fire means and what to do about it depends on who you ask.

L Lily Clark 13:44
The experience of a forest taking fire is really something

U unknown 13:48
Not only a gift to us, but it's more more of a gift to the land,

unknown 13:53

There will always the fear of fire. I know that and I don't pretend there won't be but in certain situations, there shouldn't be.

Justin Angle 13:59

I'm Justin Angle. And for the last couple years, I've been talking to scientists, historians, and firefighters themselves to hear their stories.

unknown 14:09

You owe it to the guys that died.

Justin Angle 14:12

I wanted to figure out how did we get here?

unknown 14:15

We're going to knock fire out of the landscape.

Smoky the Bear 14:17

Remember, only you can prevent forest fires.

unknown 14:21

It was a crazy ambition.

Justin Angle 14:22

And where do we go? It's just knowledge is freakin power.

unknown 14:27

I'll talk about it in a calm way. But this is me hitting the panic button.

unknown 14:32

Am I making any difference here with the science? That's what I wonder sometimes.

Justin Angle 14:38

This is Fireline a six part podcast series for Montana Public Radio and the University of Montana College of Business about what wildfire means for the West, our planet and our way of life.

Nora Sacks 15:04

Hi, I'm Nora Sacks. I'm the host and reporter of Richest Hill, a podcast from Montana Public Radio, and you're listening to A New Angle.

Jonathan Richter 15:14

When the pandemic hit, and I learned was supposed to go have our conference, and San Luis Obispo, California, for our sixth annual worldwide conference, we quickly pivoted and got the board approval to go all online. Because this is, after all, sort of what we do, we've been having this face to face because we immerse in the locations of where we have these face to face conferences every year. But we've thought we've kind of done some technology, of course, all the time, but this year with the pandemic, we decided to just go all in. And so we looked very quickly for if you remember, when the pandemic started, was really a terrifying, like, suddenly, tons of students were cut off from their teachers. And we nobody knew what was what we what we should do. And so we said, You know what, we need to make sure that people have access to this conference. So not only do we need to go into a virtual environment in some way, because that's, that's what we are talking about. But we want people to be able to get there. And a lot of these virtual worlds a lot of these applications that they're, if they're, if they're immersive, they're very platform specific, but PC only. So we, in our tour of different places, kicking the tires of different platforms for this rebel, I came up, and at first, I wasn't that impressed because I'm like, Okay, this looks like a, like a campus. But like you've seen it. It's not super imaginative.

Justin Angle 16:58

It has a familiarity to it, for sure.

Jonathan Richter 17:00

It does. And a lot of people like to use virtual worlds for what you can't do, you know, what is it like to walk on the surface of the sun? What is it, I want to be able to fly I. So you

go to this virtual world, and it's very, it's set up in such a way I didn't realize this at the time, but rubella is set up with these really super, basically, globally familiar scenes, because it's supposed to get out of the way so that you can do your work, you they want you to collaborate, they want you to, they want you to work together, it's about the people. But at the time, I didn't realize that. So you go in, it's a campus, it's got a Learning Center, and it's got a coffee shop, and it's got an auditorium. And it has, you know, a pavilion for with with different buildings setup. It's it has classrooms, and it has what we call conference halls where you walk into a large room with round tables set up and for people to congregate with then three big screens at the front of the room, where people are, can look at, you know, sort of the presentations going on. and a variety of other spaces, there's a hub space, where you walk into the room, and it's six floor to ceiling screens. So you can put up whatever you want on a, you know, a picture or a PowerPoint or a website on any of those six screens, and then get your group together and sort of huddle around, whatever around the pictures or the documents. Verbella integrates also, like Google Docs. So we often use the space live, to collaborate over documents. But I guess I guess for for for those viewers at home who might be thinking of what this is, imagine as a cartoon campus, and you have your little avatar, your which you can choose your hair and your eyes and your clothing. You can be business or you can be pretty casual. And then you go out into this campus into these different spaces. There's boardrooms and there's there's meeting suites, there's a beach, you can go to these different spaces. And it's the fact that you're somewhere on that island. And you can choose where to go next on that island. Gives you a sense of space gives you a sense of being there. And that sense of being there is immersion. You're immersed on the campus. So it's different than zoom because in order to do a breakout room, the the leader, the teacher, the presenter of the of the zoom session, has to create the breakout.

Justin Angle 20:02
Oh, yeah, it's super clunky.

Jonathan Richter 20:03
Yeah. And you can go in there and you can talk. But what you miss is sort of the random meeting of people following a session. After you stand up and you're walking down the aisle and going outside, you can say to somebody on the side, you can say, I really liked what you were saying in the chat. You want to pop over and talk at this umbrella, you know, under this umbrella, and chat at this on this patio, and it happens all the time. So what's this water cooler chat this, this stuff that just sort of emerges organically?

Justin Angle 20:42

Right, right, and gets lost in the zoom environment, for sure. What do we know about like, you know, that that sort of difference in benefit makes clear sense. And I'm sure listeners can kind of just sort of see how that would operate versus zoom or something else. What do we know about it? What does the research show about? You know, what types of interactions are problem solving work better in a virtual world? And what maybe don't function as well as in person?

Jonathan Richter 21:12

Well, that's, that's really the million dollar question. But really, it's I mean, you're talking to someone who talks about situated learning. So it depends on the situation.

Justin Angle 21:22

Yeah.

Jonathan Richter 21:23

So really, it boils down to the kinds of engagement, a lot of a lot of teachers are used to teaching in a very particular way. All the students are sitting and looking at the front of the classroom, you have their attention, and you have certain tools, the PowerPoint, or what you're writing on the chalkboard, and you're using a book, but in in a virtual sense, there are so many different kinds of interactions, you can conjure any kind of setting, right? We're in a jungle, where we're, we're on the tundra. So it's thinking about what kinds of engaged like, what do you want your students to do? to in order to learn? And so we look at the topology of engagement, right? So there's, there's just getting somebody's attention, and getting them to learn some basic facts? Or do you want them to? Do you want them to roleplay so that they're actually in that situation back with the nurses, or the Civil War, or kind of get the feel of the atmosphere, I want to be able to go to Italy in order at a cafe, and be able to successfully transverse that situation. And then all the different kinds of things that you do in situation.

Justin Angle 22:47

You know, so you work with a lot of, as an academic, you know, your way around the university, you work with a lot of colleges and universities, other organizations interested in education, you know, what are the smart players in this space doing with, with resources, like virtual campuses and other sorts of virtual engagements? What are the

smart people investing in?

Jonathan Richter 23:12

Well, I think the world's changing really fast, you know, there's a, there's a new trend report that just was released by Unity, the makers of the Unity software. On, you know, what's happened during the pandemic, to force a lot of industries and people, they show that 63% of all industries are, are going into these immersive technologies as a solution under the pandemic conditions. And I think what you're seeing is, with these successful players, they're moving quickly to start taking on the use of these xR technologies. Because Justin, the funny thing is, if whether the pandemic was happened or not, this xR technologies was going to be taking off right. During this time, all the technologies we've been trying for this VR, immersive ecosystem in the industry, like, at least since 1990. We've gone through waves and phases of development, the promise, and the hype has been there. And so a lot of people who have really wanted this thing to happen have invested in these technologies in these particular industries have just been pushing and pushing and pushing for so long. But it's been known for that we're finally getting there. And it's because the technologies and the vertical supply chains for different people servicing these technologies, the user base is the game design. The Learning Design, your it's finally tipping over. Oculus has has you know with Facebook, virtual realities is, is leading in, you know, in a lot of ways, but there are many, many players that have been pushing and working on this.

Justin Angle 25:10

It seems like a spot where universities and other organizations, you know, there's there's this inflection point, I mean, in article you and I exchanged, you know, made the argument that, hey, if you're a university, you should not be investing in physical plant, you should be investing in digital resources. And what I mean, what's your take of that landscape in higher education?

Jonathan Richter 25:33

Well, I know, I know, you know, invested as much as I am, I'm, I would wholeheartedly agree that that's, that's where things are going. And, you know, of course, it's not going to be that smooth of a transition for a lot of organizations, you know, education is steeped in tradition. And, and learning face to face in a geographic place is huge. I'm a born and raised Montanan. So I get it, very connected to the land. But I think what you're if you start looking at the trends, and you really start seeing where things are going, we're not going to put the toothpaste back in the tube, that the things that the pandemic has hastened,

this push to educational technology, timed right, while the XR takes off, is going to make profound differences across the world. And we're, we're really just getting started taking off as these things really start to become diffused across the landscape. So yeah, I think I think people who realize that, you know, this, this is sort of a paradigm shift. I hate to use that word.

Justin Angle 26:46

Yeah, this is what disruption feels like. Right. Another area of passion for you. You mentioned, you're born and raised in Montana, you've taught at a variety of levels to a variety of populations in this state and beyond mean, access, right? Education is such a driver of upward mobility and opportunity. How do you think about the role that, you know, these sorts of technological resources play in opening up that type of upward mobility to more people and more different people?

Jonathan Richter 27:22

Well, I think it's, again, it's creating a complex landscape, because these technologies, a lot of them are expensive. Although, most people, I would hesitate to say most people, but a lot of people have smartphones, and the augmented reality technologies in, those are in pretty incredible what you can do so. And there's there's very accessible technologies that don't cost an arm and a leg. But I think it's up to these communities, as much as it is up to universities to have the foresight by looking at these sort of breadcrumbs that are here. Like the futures here, it's just not widely distributed.

Justin Angle 28:09

Right. Yeah.

Jonathan Richter 28:10

But if people could see that, and then take action to lower the barriers for, for all of the community members, different students, you know, SpectrUM Discovery Centers that done some great things to provide analysis to people in in the Missoula community, as well as the Flathead and down in the Bitterroot.

Justin Angle 28:34

The bandwidth issue is a big one, too. I mean, that that that kind of is, you know, the devices are one thing, and those are becoming more and more affordable for folks. It's a

lot easier to subsidize getting devices into people's hands, but but creating the infrastructure for them to connect to broadband is is proving to be more of a challenge.

Jonathan Richter 28:56
That's it. Well, and then and then another one is, is modeling the kinds of expertise then yeah, that people need in order to understand and get their arms around these new ways of working and learning and interacting. Just to have the technologies plopped in front of you doesn't, doesn't do it. It's when somebody shows you how to use it, and then does it really well and orchestrates an event that then it's a now I start seeing the possibilities and the potentials.

Justin Angle 29:31
And that's exactly what you and your colleagues are interested in doing and figuring out how to how to best do that. Jonathan, this has been fascinating. How can people learn more about ilearn about you and your work online? Where would you point them?

Jonathan Richter 29:47
Probably start with our website, which is immersivelrn.org. So Immersive Learning Research Network. That's the immersive LRN. org. And from there, there's a link to our various initiatives, including our virtual campus. So check it out.

Justin Angle 30:08
Awesome. Well, it is indeed an experience. I encourage everybody to check it out. Jonathan, thanks for coming by the show and we'll see you down the road.

Jonathan Richter 30:16
Okay, thank you very much. Appreciate it.

Justin Angle 30:24
Thanks for listening to A New Angle. We really appreciate it. We're coming to you from Studio 49 generous gift of UM alums Michelle and Lauren Hanson. A New Angle is presented by First Security Bank, Blackfoot Communications and the University of Montana College of Business with additional support from consolidated electrical distributors, and drum coffee. AJ Williams is our producer, VTO, Jeff Ement and John

Wicks made our music. And Jeff Meese is our master of all things sound. If you have any questions, suggestions, comments, insults, whatever, please email me at anewangle@u montana.edu. If you liked what you heard, tell your friends about it.

Justin Angle   31:05
Thanks a lot.

Justin Angle   31:06
See you next time.