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Creating alternative (educational) realities

Chelsey Philpot, Contributor, Pearson | October 17, 2018 in [Higher Education](#)

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Ksenia Sejenkova and Emily Egan want learners to see the world differently—literally. As developers on Pearson's Immersive Technology team, Ksenia and Emily help build educational apps and experiences for virtual reality headsets (such as [Microsoft's HoloLens](#)), mobile phones, and more. In anticipation of [Educause 2018](#), I spoke with Ksenia and Emily about creating virtual reality and mixed reality experiences (see sidebar for definitions), being female developers, dreaming of new educational possibilities, and imagining the future of VR and MR technologies.

How did you come to work in virtual reality development and education?

Emily Egan: I worked as a multimedia content producer before, in publishing, and then I started working at a VR company creating immersive content. So I gained experience from that role and now I work at Pearson.

[Working in education] was something that just came up as an opportunity. I haven't always wanted to work in education, but the VR Video Experience Developer role seemed really appealing because there's a lot of interesting use cases in education. It requires you to be very creative, and I wanted to do a creative role.



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Ksenia Sejenkova: My background is in video. I used to be an editor. That's how I learned about [360 video](#). But then I tried VR—got really into that—did a master's in interactive technology and started working at Pearson, so I combined my video background and technology interests.

Immersive Technologies Defined

Virtual Reality (VR)

VR creates an experience where learners, usually through headsets or special goggles such as [Google Daydream](#) or [Oculus Rift](#), are fully immersed in a digital reality that's completely separate from the real world. Examples of virtual reality include [Google Earth](#) and Hold the [World with David Attenborough](#).

Mixed Reality (MR)/Augmented Reality (AR)

Mixed reality is fairly self-explanatory. It's an immersive technology that melds the virtual and the real, enabling learners to interact with virtual elements (e.g., holograms) imposed on the real world. Examples of MR/AR include [Pokémon Go](#), Snapchat Filters, and Pearson's [HoloPatient](#).

360 VR Video

360 VR experiences place learners within fully immersive, pre-recorded 360-degree videos. 360 VR video differs from VR in that the learner is taken on a journey created by the filmmaker's camera movements. Examples of 360 VR Videos include the feature film [Notes on Blindness](#) and the *New York Times*' [The Daily 360](#).

As female developers in a male-dominated field, can you recall instances when you felt you had to overcome additional obstacles?



Emily Egan

KS: There are so many cases when we are demoing products to the public and people are asking questions from our male colleagues, not female colleagues, and [people] take their opinions more seriously.

Experiences like these are when you don't...feel equal.

When men ask technical questions, they sometimes test your knowledge, and you feel like you need to prove that you're worth listening to and you know what you're doing.

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EE: I had the same experience as Ksenia. I've also been wolf whistled at and hit on by men at tech conferences when I'm just trying to talk about the technology—obviously disgusting and annoying.

VR is a field that demands a really diverse range of skills and people from different backgrounds, so if you don't hire men and women, you hold back the entire industry. You need various types of people to innovate and solve problems. By not valuing female developers' work and not having enough women in the field, everyone is losing out.

What areas do you think it'd be interesting to see VR education expand into?

EE: At the moment, people are experimenting with using it in a lot of different subjects areas. I know I would personally love to see it more in arts and culture and history.

For example, I studied film and art in university and I was studying Dali and there's a VR experience that brings his paintings to life. I thought that was really enriching. It doesn't replace the paintings themselves, but it brings his world to life in a way that no other medium could.

KS: I actually read a lot about education and mental health, because I think this is underlooked. I understand that it's difficult to translate mental illness into VR. But for people who don't suffer from [mental illness], or who don't know that they suffer, it would be completely mind-blowing to experience something...to see the world from the perspective of someone with a mental illness. It would really benefit educating people on those issues.

What course from secondary school or university would you have loved to have been able to study using VR?

KS: I would say all of them. In particular, I would love to have had chemistry in VR. For example, we never played with substances for health and safety reasons. If you could combine two substances in VR and see what the reaction is, that would be absolutely amazing.

EE: I would have loved to see a VR or a mixed reality experience where you can interact with an AI character and learn from a person as if they were really there.

For example, you could interview characters or people from history and learn firsthand about their situations, their backgrounds, their stories.

How do you collaborate with educators and learners to develop products? How does that process work?

KS: We work closely with subject matter experts (SMEs), at every stage of development to make sure that we're building a product that is actually valuable, solves a problem, and teaches.

We usually have weekly work group meetings to ensure that our SMEs look through everything we've done so that it's all correct and there are no mistakes or changes that need to be made in terms of content.

EE: It's kind of a two way relationship with the SMEs because we really need them to create impactful, beneficial products. We work very closely with them from the ideation stage to the final development stage...constantly challenging and asking ourselves, "Okay, is there a reason this has to be in VR? What makes it better by being immersive?"

Have you gotten the chance to see educational products you've worked on being used? If so, what was that like?

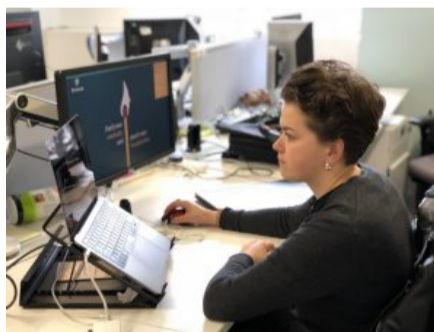
KS: I've only gotten to see it during demos at expos like [Educause](#), which is, of course, not exactly like being in a classroom.

EE: Yeah, I recently did. I was lucky enough to assist with an assessment. So we have a mixed reality app called HoloPatient. I took our [HoloLens](#) to a college where they carried out an individual assessment with nurses in training and had them do a diagnosis of a virtual patient that we had created. They were marked based on how accurate their diagnosis was.

It was really, really cool to actually see people—students and teachers—[using our app](#) and looking at our holograms as if they were real people.

Everyone gave great feedback. There were lots of wows. To see [the app] actually have a real benefit for people—that's so powerful.

More and more companies are getting into VR education products. What makes one product better (i.e., a more effective educational tool) than the other?



Ksenia Sejenkova

KS: We work closely with an SME to make sure that learners actually find [the immersive experience] valuable Also, we have to make sure we are creating an immersive product for a specific reason and ensure

that it can't be told by another medium. The immersive element has to solve a problem, bring something unique, and teach someone.

I think this makes Pearson stand out. Right now there are so many companies who don't really create anything for learning outcome. They just create something for the sake of creating it in VR.

EE: You shouldn't create educational VR with the goal of trying to replace books, necessarily, because a lot of people, I think, are wondering how it can fit into a curriculum. And you should definitely take the learning outcome as the beginning point and keep that throughout. That's your most important thing. Otherwise, you're not really gaining anything by making something in VR.

What does the near future of VR hold?

KS: In the past will two years, prices have decreased significantly. Right now, you can buy a standalone [VR] headset for \$200, but you can also use your mobile phone and a \$6 Google Cardboard, and mobile phones keep getting better and better.

We will get to the point when VR will be very, very accessible and of good quality and anyone will be able to own a headset. It's quite exciting.

EE: Yes, as well as VR becoming more accessible, it's also better quality now at a more affordable price. It's going to continue in that direction. Having better resolution and a higher quality experience makes a massive difference to the immersive element of VR. When the technology improves, so will the experiences and so will people's reactions. There's going to be more people wowed by and wanting to get involved in VR so they can create amazing experiences themselves.

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About the author



Chelsey Philpot

Chelsey is a Boston-based writer with Pearson. Her articles on education, the arts, and culture have appeared in the New York Times, Boston Globe, Slate, and School Library Journal. She is the author of two novels for young adults, *Even in Paradise* and *Be Good Be Real Be Crazy* (both HarperCollins). More information can be found on her website, chelseyphilpot.com.