The Immersive Experience

Taylor Kahny - 2022-07-14 - Online Learning

The ubiquity of Alexa-powered devices has proven that the relationship between digital and physical environments is growing stronger, and our smartphones have been supporting this gratifying connection for years. The question remains: Where do immersive (mixed, virtual, and augmented) realities fall along the spectrum of consumer adoption?

Despite the ongoing debate on whether such realities are now considered “mainstream,” this technology lays the groundwork for new ways of learning. From virtual reality gaming applications to mixed reality medical research, students have a variety of novel tools at their fingertips.

One of the largest draws to virtual reality is its ability to immerse users in scenarios that are dangerous, unclear, or even impossible to undertake in real life. Additionally, users can view these particular scenarios from a single location. Educators, for example, utilize classrooms or laboratories while transcending the ordinary learning process by placing students in realistic simulations.

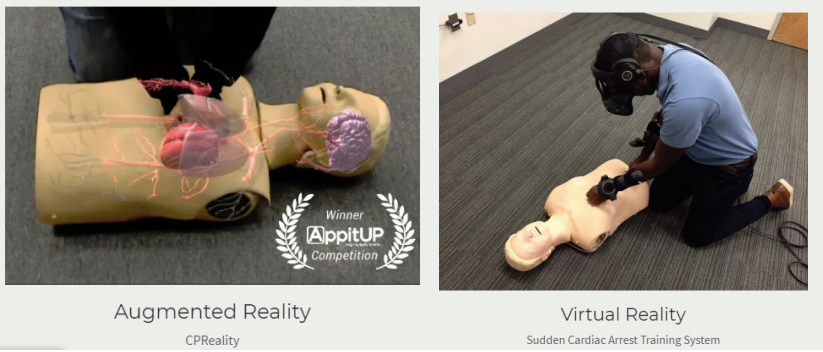
Some examples of immersive realities in recent higher education research include:

1. The “Breath Chair,” a system that provides physical contact simulation for reducing anxiety
2. A virtual reality video game designed to improve emotional effects on chronic disease patients
3. Experimentation on black holes using virtual reality to manipulate mass, mass ratio, and orbital separation
4. A virtual school environment designed to prepare teachers, administrators, and staff for responding appropriately in the event of a school shooting

Furthering this technological growth, instructors here in Penn Nursing have developed their own immersive technologies for teaching purposes. Marion Leary, Director of Innovation at the School of Nursing, is one such trailblazing educator. Leary identified a need for improving CPR training, and after dedicating time and research, she determined that a hologram was a feasible way to convey this emergency procedure.

A resuscitation science researcher for over a decade, Leary partnered with Laerdal Medical and utilized the company’s CPR training manikins to create the CPReality program. Then, working with her development partner BrickSimple, she created a holographic image of the circulatory system and connected the HoloLens to the manikin via cable and then to a

computer. As the trainee performed CPR, the data were transferred from the manikin and rendered by the HoloLens as a holographic image.



This snapshot of Leary's research in immersive realities is just one example of how futuristic technology can improve learning acquisition and possibly create new modes of communication among students and educators long-term. More to come on Penn Nursing's mixed reality initiatives later this year.

Research examples redacted from Lackey, S. and Chen, J. (2017). Virtual, Augmented and Mixed Reality. Held as Part of HCI International 2017, Vancouver, BC, Canada.