



A NEW REALITY

How virtual reality experiences are expanding into arenas beyond just entertainment *By Liz Hunter*

For those in an assisted living facility, the chance at scuba diving or visiting the Grand Canyon is not likely to come around again. At least not in reality, but virtually—anything is possible.

Just a few months ago, this was possible for residents at Encore at Avalon Park, an assisted living and memory care community here in Orlando. Equipped with virtual reality headsets, residents were treated to fully immersive virtual reality experiences, like visiting the beach or sitting in a jazz club, evoking feelings of pleasant memories and calmness. The experience was part of a trial program created by MyndVR, a Dallas-based health and wellness company focused on virtual reality (VR) solutions for adults 55 and over, the goal of which is to relieve or reduce symptoms in those with Alzheimer's, dementia or Parkinson's.

"We're always looking at non-pharmaceutical approaches to help those with a memory deficit," says Kimberly Edwards, executive director of Encore at Avalon Park. "We've offered music and pet therapy, so the idea of virtual reality therapy was another way to provide an alternative to medication for residents."

Edwards witnessed changes in the residents who tried this technology. For those viewing the jazz club environment—which included a live singer and other "virtual" people enjoying cocktails—through their VR headset, Edwards says it was fun to see their response. "Some of them responded by singing along to the music, or tapping and moving their feet," she says. "And many of them were reminded of experiences in their own life and would start talking about it. It evoked very pleasant memories for them."

Although not a traditional approach to entertaining the assisted living population, Edwards says she

sees the benefits of virtual reality. "I definitely think a VR program of some sort has a place in long-term care," she says. "I think as the younger generations move into assisted living—people more familiar with the technology—it will be more well received. It's going to be something you see in these communities more and more."

It's a trend taking hold nationwide. Virtual reality is creeping into our real-world experiences. It's in high demand for entertainment and gaming—smartphones and headsets like Google Daydream bring VR to our fingertips, and Sony has sold 2 million PlayStation VR headsets since it launched a year ago—but organizations are increasingly looking at ways it can be used for good. This includes medical professionals practicing procedures on virtual patients or viewing their MRIs in a 3D environment, and military training programs that can replicate scenarios without extraneous expenses or time for traveling—training can be anywhere.

The University of Central Florida (UCF) is harnessing the technology for both students and the community at large. UCF RESTORES is a clinical research center in the department of psychology at UCF. Founded by Dr. Deborah Beidel, the center studies anxiety, trauma and PTSD with an emphasis on new technology treatment methods, including virtual reality. In an intensive three-week program, PTSD sufferers go through therapy that exposes them to the events or triggers of PTSD symptoms.

"They can experience high levels of anxiety, nightmares, flashbacks to events, and they avoid situations, people and places

that remind them of traumatic events,” says Beidel. “They become emotionally numb to the point where they are not able to experience pleasant emotions, and because of the nightmares, they may only sleep a few hours a night.”

During the program, participants are exposed to these scenarios, sights, sounds and smells that could trigger them. “We are able to reproduce things in technology that I can’t do in real life,” she says. “I can’t set off an IED, nor would I want to, but I can do it in the VR environment.” The goal, Beidel adds, is to take away the association of those triggers with the horrific event they experienced. At the end of the program, 66.9 percent of the participants no longer meet the diagnostic criteria for PTSD.

UCF RESTORES treats combat veterans as well as first responders, many of whom responded to the Pulse nightclub shooting. Currently, the program’s VR technology is specific for combat-related PTSD, but they are working on a new VR program specifically for first responders who may have different triggers, such as strobe lights, the smell of alcohol, certain music, and VR would add the visual component.

“This technology is a wonderful tool in the hands of a skilled clinician,” Beidel says. “I would never say technology is the treatment, but it makes what we’re doing better.”

Beidel is also working on an application that will assist children with social anxiety and is in the stages of finding participants for a study. The app would help kids practice friendship-making skills, including learning how to talk to people and giving compliments, all with a virtual reality avatar.

The nonprofit Starlight Children’s Foundation is also using the technology for a new program rolling out in spring 2018 aimed at children in hospitals. Starlight Virtual Reality is an initiative formed with partners Star Wars: Force for Change, Niagara Cares and Google, and will provide entertainment and distraction to young, seriously ill patients. The program was announced at the Florida Children’s Hospital last year, which will be one of the earliest recipients of the VR technology.

“We feel strongly that virtual reality is the next frontier, and this program will use the power of virtual reality to virtually teleport seriously ill hospital-



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ized kids who can't leave the hospital or room for weeks on end," says Starlight Children's Foundation CEO Chris de Haan. "We can bring him or her anywhere in the world—and beyond." Starlight is working with Google and Lenovo on customizations to a new headset built specifically for use in hospitals in accordance with infection protocols.

With Lucasfilm and parent organization Disney behind them, the storytelling possibilities are endless. De Haan says, while wearing a headset, children can virtually exist in the Star Wars galaxy, take field trips around the world via Google Expeditions or create virtual artwork with Tilt Brush by Google. Lucasfilm is also creating custom, original content based on Star Wars for use only on this VR program.

"We're trying to bring an array of happiness and awesomeness to these kids," he says. There is also the added research on patients who are immersed in VR while undergoing a painful procedure showing a reduced need for painkillers.

"There are so many benefits to this tech-

nology and there's a likelihood it catches on in a major way," says de Haan. "What we're looking to do hits the bullseye for now, plus the reduction in need for medication and educating people in unique ways.

There are a lot of positive ways this technology can be harnessed for good."

De Haan adds that 750 units of the Starlight Virtual Reality program will roll out in hospitals nationwide in 2018, but he hopes to see it go further. "Our goal is for every child at every major medical facility to have access to this program because a hospital experience can be tough and we want to



UCF Computer Science doctoral student Corey Pittman in the new lab. Photo by Kimberly J. Lewis

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make it as positive as possible," he says.

As the avenues for VR technology expand, local educational institutions are stepping up to make sure students are prepared for these careers. Back at UCF, a new virtual and augmented reality lab will give students the opportunity to get hands-on experience and fine tune their skills.

Joe LaViola is the director of the Interactive Computing Experiences Research Cluster. He says he has wanted to bring a lab like this to campus for years, especially with the rising prominence of VR and AR (augmented reality) devices and content.

"This lab will allow students to work on projects of their own design or within a class and get experience for their résumé and get a leg up for the tech jobs," says LaViola. He highlights major companies like Microsoft, Google and Playstation, who have shown a vested interest in the technology, which is becoming more commercially viable for consumers.

Inside the UCF lab, five VR stations are equipped with the HTC Vive display, and on either side of the room is open space for tracked space, which allows the person using a device to move around while they are tracked by cameras mounted in the corners of the room. LaViola hopes to add a large TV to the space to display the virtual environment for more than one person at a time.

He says the lab was used in a 3D interfacing class project where students captured images of a part of the UCF campus with 360 degree cameras and they created an interactive video experience. An AR application that teaches people how to play soccer was also tested and developed in the lab, complete with a field and an intelligent tutoring system.

"It's going to be important for students to get experience, and not just computer science students. There is psychology, understanding how people work is equally important as how the technology works, so we'd love to see multi-disciplined teams working together in the lab," LaViola says.

Considering Orlando's boom in tech-sector growth—it was ranked No. 6 for fastest growing by *Time* in 2017—it's no surprise that virtual reality is being embraced here. This city will be one to watch as this virtual technology increasingly influences our real-world experiences. 🌿

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