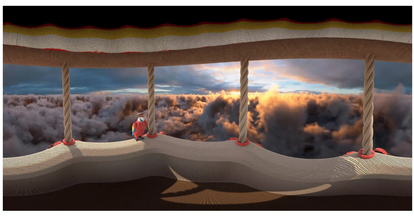
From Hospice to Hot-Air Balloon Thanks to VR Therapy

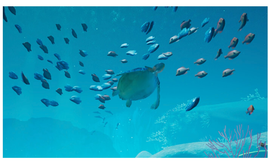
BY MATT ALDERTON EDUCATION · SEP 8 2020 · 7 MIN READ



In the final act of a terminal illness, hospice patients can choose to spend their last days in a health-care facility or receive care at home. They can be in that situation for days, months, or even years. Regardless, it's an exercise in mental patience; emotional perseverance; and, often, intense physical pain. The experience is so taxing that hospice patients and their caregivers often vacillate between extreme highs and extreme lows.

To help these patients cope with their physical and mental anguish, doctors often prescribe pills for pain, anxiety, and depression. However, a new program at one of America's most prestigious art and design universities has a different prescription in mind: virtual-reality (VR) therapy.

"Regular use of VR as therapy has the potential to be life-changing for a lot of chronic-pain patients and for those in hospice," says Erin Miller, a senior at the Savannah College of Art and Design (SCAD) in Savannah, GA, where she's pursuing a bachelor of fine arts degree in immersive reality. "VR's ability to focus the brain on the virtual environment allows patients to feel respite from their pain. I don't think it is a stretch to say that our current health-care system needs reform, and I think VR is one of many ways in which traditional treatment can be supplemented."



Miller is one of 21 students enrolled in a special course conceived by professor Teri Yarbrow, a self-described "VR evangelist," and Max Almy, dean of SCAD's School of Digital Media. Titled VR for Good, this spring's 10-week class was the first of what SCAD hopes will become a whole curriculum—perhaps even a minor—devoted to immersive media in health care.

"Of all the industries involved in immersive media, medicine is one that has been at it for decades," says Almy, who adds that early adopters in health care have already used immersive media in medical schools, hospitals, clinics, and home-care settings. "Because our students know the technology, as well as how to tell compelling stories, we think we can create the leaders in content creation for the future—not only in entertainment and gaming but also in medicine, health, and wellness."

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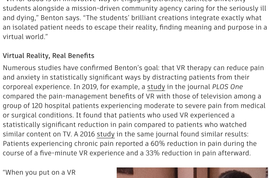
Tender-Hearted Tech

While SCAD faculty brainstormed ideas, Yarbrow formed a relationship with local nonprofit hospice provider Hospice Savannah and its palliative care practice, the Steward Center for Palliative Care. Hospice Savannah President and CEO Kathleen Benton had recently lost her brother, SCAD alumnus Daniel DeLoach, to Proteus syndrome, a rare condition in which the body is consumed by progressive overgrowth of the bones, skin, and other tissues. In his honor, Benton's family established a charity whose mission is using technology to improve the lives of people with chronic illnesses or special needs.

"Daniel was my brother," Benton says. "He was a student of SCAD, a proponent for technology, a brilliant person, and hostage to the same disease the Elephant Man lived with. After his death, we decided to honor his name by giving patients technology as a way to escape their reality." She was looking for opportunities to work with SCAD on projects germane to her brother's cause; from networking with Yarbrow, the VR for Good class was born. "This program spoke to me immediately as exactly what Daniel would want for patients who suffer," she says.

With funding from the Daniel DeLoach Memorial Fund, the course ran from March to May 2020. In it, students used Autodesk Maya to develop three interactive VR experiences for patients and caregivers at Hospice Savannah and the Steward Center for Palliative Care.



The first, Born to Roam, is a bucket-list travel experience aboard a virtual hot-air balloon that makes stops to see attractions like the Amazon rainforest and Venice's canals. The second, Nalu, is an interactive, meditative underwater adventure that lets users view marine life such as whales, dolphins, and sea turtles. And the third, Apples and Anthills, is a nostalgic farm experience where users perform activities such as picking apples and brushing horses. All three feature 3D animations rendered on top of live-action footage.

"VR for Good is an innovative way of engaging altruistic, talented university students alongside a mission-driven community agency caring for the seriously ill and dying," Benton says. "The students' brilliant creations integrate exactly what an isolated patient needs to escape their reality, finding meaning and purpose in a virtual world."

Virtual Reality, Real Benefits

Numerous studies have confirmed Benton's goal: that VR therapy can reduce pain and anxiety in statistically significant ways by distracting patients from their corporeal experience. In 2019, for example, a study in the journal *PLOS One* compared the pain-management benefits of VR with those of television among a group of 120 hospital patients experiencing moderate to severe pain from medical or surgical conditions. It found that patients who used VR experienced a statistically significant reduction in pain compared to patients who watched similar content on TV. A 2016 study in the same journal found similar results: Patients experiencing chronic pain reported a 60% reduction in pain during the course of a five-minute VR experience and a 33% reduction in pain afterward.

"When you put on a VR headset, it totally takes over the neural transmitters in every part of your brain," Almy says. "You literally can't feel pain because there's so much else going on in your brain." This efficacy could point to other possibilities for VR in health care. It could be used in elder care to reduce pain, depression, stress, and social isolation. It could likewise be used to occupy children during vaccinations, wound dressings, and other uncomfortable medical procedures; to calm down anxious patients before surgery or worried mothers before birth; to relieve and recharge worn-out nurses and caregivers; or to facilitate physical therapy for patients with musculoskeletal injuries.

It could even be used to prevent deaths from opioids, which are highly addictive and become less effective over time. "Opioid addiction is becoming a leading epidemic in America," Benton says. "I believe one of the most important things VR can do is lower the use of these narcotics in the future while still addressing necessary pain control for the chronically ill."

What About COVID-19?

For students—who had to complete their VR for Good coursework online when COVID-19 forced SCAD to close in-person locations in spring 2020—the pandemic has only underscored the potential benefits of VR therapy.

"With the pandemic, I learned how valuable it is to be able to have the experience of just going outside," says Richon Watson, who recently graduated from SCAD with a bachelor of fine arts degree in interactive design and game development. "Many people in hospice care or long-term patients in a hospital might like nothing more than to just go outside and see the world. With VR, we can give them that in some way."

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Miller, who served as art director for the Born to Roam team, says: "To see the positive impact on my community was extremely rewarding, especially during a time when COVID has restricted patients from seeing their loved ones. Right now, we are all isolated, and the VR for Good class was a bridge to connect to others. At its heart, the Born to Roam VR experience aims to take people to places they haven't had the chance to see and to remind us that we all have a shared experience of being human."

SCAD originally envisioned a research component to VR for Good and even obtained grant funding to measure patient outcomes. Because of the pandemic, however, its funding and research plans were delayed. But the students and practitioners feel buoyed by the positive reactions they've received since introducing VR to patients and caregivers.

"The patient crying because they have not golfed in years until putting on a VR headset," Benton says. "The caregiver who spends her virtual birthday in Italy instead of cleaning and caretaking. These anecdotal stories are all we have for now, but they're enough to inspire growing this further."

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