HEALTHCARE

Vanderbilt University School of Nursing - CenarioVR

Reduce Clinical Training Costs With CenarioVR, the Immersive Learning VR Authoring Application and User-Friendly Course Builder.

VANDERBILT
School of Nursing

CLIENT

The mission of Vanderbilt University School of Nursing is to lead in education, evidence-based practice, scholarship, and research in order to provide optimal health care to diverse communities through innovation, inclusion, and compassion.

CHALLENGE

Point of care ultrasound is the stethoscope of the 21st century.

The Vanderbilt University School of Nursing has limited opportunities to effectively train its growing Nursing School enrollment to become ultrasound technology certified due to medical equipment costs and a strong focus on patient safety. The cost of ultrasound devices, while continuing to fall, can still be very expensive. Taking existing scanners out of patient production to support the training mission is just not an option.

By replacing much of the didactic training with virtual environment experiences, the students can view that content at their leisure, orient themselves on the anatomical features being scanned, view the ultrasound output in full field of view in real-time coinciding with what the clinician is doing with the patient.

While this technology doesn't completely replace hands-on experiences, it can significantly reduce the time of hands-on experience needed to develop proficiency. In short, when the hands-on part of the course begins, the students are much better able to utilize that time effectively because they already know what they need to do and how to do it, thus allowing instructors to train more students more quickly.

STRATEGY & SOLUTION

Vanderbilt University School of Nursing purchased CenarioVR, a virtual reality course authoring application to replicate the clinical setting in virtual reality (VR).

To capture the experience of operating ultrasound equipment, three different media components were combined to simulate the clinical environment: 360-degree video of the clinician and patient interactions shown from two distinct camera angles; a top-down view with graphic, anatomical overlays; and streaming video of the ultrasound output timed to coincide with exactly how the instructor is interacting with the patient.

Each video scenario was enhanced with additional instructional elements on the top-down view of the patient, such as drawings of anatomical elements that appear when selected. Questions, annotations, buttons, and hotspots were included to enforce key concepts and quiz the students on probe placement. Once each scenario was finalized with interactions and assessments, the course was published in two formats: HTML5 for viewing on a computer's browser, as well as CenarioVR Live and mobile for viewing on a phone in a Google Cardboard or Oculus Go headset.

RESULTS

Increased Scalability

- By preloading much of the instruction into an immersive format using CenarioVR, the need for face-to-face instruction and time spent physically touching the equipment was substantially reduced.
- This allows more people to be trained while reducing the hands-on time required with the device.

Equipment Savings

- Vanderbilt University avoided the need to purchase five additional ultrasound machines valued at $425,000 ($85,000+ each) to support its growing enrollment.

Learning Retention

- Since rolling out the immersive learning module in the spring of 2019, each student reported they had a more efficient training experience with the ultrasound probes.
- In VR, students can replay the activity until they feel confident in their understanding of the task. They can watch the clinician place the probes on the patient, then go back and see what is being imaged.
- After training in VR, students are more likely to hit the ground running when given hands-on time with a device and a patient.

Awards

2021 Brandon Hall Group HMC Excellence Awards

Best Use of Virtual Worlds for Learning - GOLD

2020 LearnX Awards

Best VR Hard Skills Training Project - PLATINUM

2020 Learning Technologies Awards

Best Use of Simulations or Virtual Environments - SHORTLIST