



Speech-language pathology

students practice complicated

procedures using VR/AR

SCOPE OF PRACTICE

BY HANNAH LONG ('19)

Elizabeth Ware puts on a headset and gets into position to hold the scope to examine her patient—in this case, a mannequin head. The screen behind her offers a real-time analysis of the procedure in lifelike detail.

Ware and other graduate students in speech-language pathology at JMU are using virtual reality and augmented reality to practice complicated procedures without the risk of harming their patients.


“We’re trying to develop a mechanism by which our students ... gain hands-on experience with some procedures and skills that are invasive and/or dangerous to their future clients,” said Carol Dudding, a professor of communication sciences and disorders. “We really want them to get those opportunities while they’re here.”

In the past, a colleague of Dudding’s allowed up to five students to observe the same procedure in the lab at nearby Sentara Rockingham Memorial Hospital. But until now, the students had not been able to practice it themselves.

“It’s a great way to introduce the material and get experience with it,” Ware said.

Dudding sees applications for VR and AR in other university clinical settings as well, “for nursing, for medicine, for physical therapy, for occupational therapy—any of those clinical skills that we want our students to have, but perhaps for various reasons we’re not able to give them that exposure in other ways.”

In 2017, Dudding reached out to James Barnes, the VR/AR instructor at JMU X-Labs, and Kevin Phaup from Industrial Design, to discuss the possibilities for this project. As a result, they formed a partnership, leveraging three diverse areas of expertise. In Spring 2018, they received a collaborative research grant from 4-VA to develop a prototype and test their

ideas, and that summer they participated in jmUDESIGN as they created the pilot course. The project led to a new course in VR/AR medical simulation design at JMU X-Labs during Spring 2019. 

“We really want [our students] to get those opportunities while they’re here.”

– CAROL DUDDING, *communication sciences and disorders professor*



In the past, students were given the opportunity to observe procedures at nearby Sentara Rockingham Memorial Hospital, but now they can practice them at JMU with the help of technology.