Implementing Immersive Virtual Reality (IVR) in Nursing Education:

Insights from the Student Perspective on IVR Orientation, Psychological Safety, and Student Learning

Ann Loomis, PhD, RN, CNEcl
Clinical Associate Professor, Purdue University School of Nursing

Cynthia Bradley, PhD, RN, CNE, CHSE, ANEF
Director of Simulation, Associate Professor, University of Minnesota School of Nursing

Marshall Muehlbauer, BSN, RN, PHN
Graduate Research Assistant, University of Minnesota School of Nursing

Carol Flaten, DNP, RN, PHN
Clinical Associate Professor, University of Minnesota School of Nursing

Linda DiClemente, DNP, BA, RN
Clinical Assistant Professor, University of Michigan School of Nursing

Michelle Aebersold, PhD, RN, CHSE, FSSH, FAAN
Clinical Professor, University of Michigan School of Nursing

Overview

This study explored nursing students' experiences with immersive virtual reality (IVR) simulations. Findings highlighted the importance of orientation, enhanced learning through independent decision-making, and increased psychological safety. Students viewed IVR as a low-pressure environment that promoted autonomy and critical thinking, underscoring the need for intentional instructional design to support effective IVR integration in nursing education.

Background

As immersive virtual reality (IVR) becomes vital to nursing education, understanding the student experience is crucial for successful IVR implementation. Although IVR is a form of simulation well-supported by the four phases of Experiential Learning Theory (Kolb, 1984) differences between IVR and traditional manikin-based simulation require exploration to apply and adapt current Healthcare Simulation Standards of Best Practice (Watts et al., 2021). Given the limited understanding of students' experiences with IVR, this session presents findings from a qualitative study seeking an understanding of students' perspectives on integrating IVR into their coursework. Key areas of focus include orientation, psychological safety, and IVR's impact on student learning.

Figure 1. Nursing student engages in IVR simulation (AI Generated)

OpenAI. (2025). ChatGPT (April 16 version) [Large multimodal model]. chat.openai.com/chat.

Methods

Faculty integrated five acute care multi-patient IVR scenarios into a senior-level course at 3 large, public, land grant universities. Participation in the learning activities a required component of their course. Students were recruited to allow inclusion of their de-identified data in the project dataset.

Student (n=222) completed each of the following:

1. Prep work prior to their scheduled IVR session
2. Electronically completed a 10-item multiple choice knowledge pre-test
3. Attended five IVR sessions scheduled across one semester
4. Completed one multi-patient IVR scenario independently using a Meta Quest 2
5. Participated in a reflective debriefing with a trained debriefer
6. Electronically completed a 10-item multiple choice knowledge post-test
7. Electronically completed quantitative usability and qualitative perception surveys

Results

Students' qualitative responses were categorized by three categories: IVR Orientation, Learning, and Psychological Safety (Table 1).

Table 1. Students' responses to IVR simulation

IVR ORIENTATION	STUDENT LEARNING	PSYCHOLOGICAL SAFETY
It was important to watch the orientation video before putting on a headset.	*VR allows us to act in the full scope of the nurse rather than having to work alongside another RN or our instructor. This allows us to have increased autonomy and more independence, pushing us to make decisions on our own.*	*VR is much more relaxed and less pressure. I am able to make mistakes and correct them more easily.*
You really just had to put the headset on and start playing around with it to get the hang of things.	*It gives you responsibility to make the choices and to use your own critical thinking to solve problems.*	*I feel safer in VR because you don't have to vocalize your thoughts in front of everyone.*
It was important to adjust the boundaries based on whether you were sitting or standing, and I was unsure how to do that at first.	*Helps me understand different aspects like delegation, time management, and prioritization which is hard to accomplish during traditional clinical.*	*I think the thing that sticks out is I feel comfortable to mess up.*
I found it frustrating when the scenario kept freezing because the Wi-Fi connection wasn't good.	*VR allows for independent decision making and use of resources to guide care.*	*VR creates less of a stressful environment to make mistakes and do what you think is correct.*
You need to get used to the controls and the feel of the headset. It helped when faculty walked us through the use of the equipment during scenario one.		*I felt more in control and not so pressured, so I was able to think better and more on my own to get through the VR simulations.*

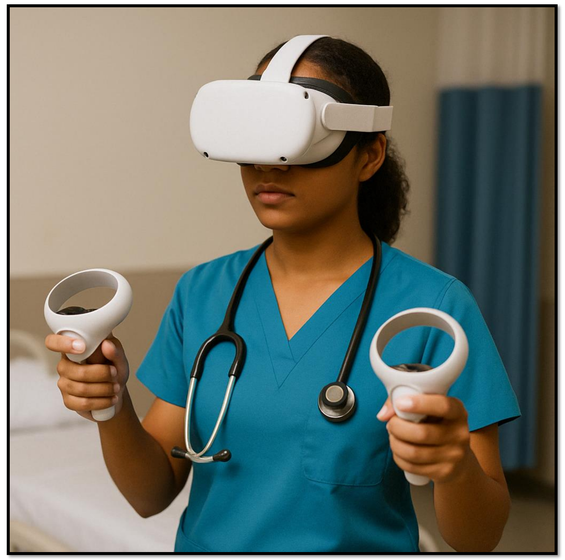

Figure 2. Nursing student engages in IVR simulation (AI Generated)

OpenAI. (2025). ChatGPT (April 16 version) [Large multimodal model]. chat.openai.com/chat.

Discussion

Students were positive about using IVR, recognizing the differences in learning achieved with both IVR and traditional simulation methods. Nurse educators need to implement best practice simulation strategies to prepare students for IVR, create a supportive environment, cultivate psychological safety, and foster an inclusive space supportive of IVR simulation.

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REFERENCES