IN PRACTICE

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IMMERSIVE ROOM TECHNOLOGY IN HIGHER EDUCATION, EXPLORING CHALLENGES, SOLUTIONS AND FUTURE DIRECTIONS

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Introduction: Due to an everchanging healthcare environment and reduced placement availability, the NMC [1] has proposed the adoption of simulated practice learning (SPL). This has encouraged many higher education institutions (HEIs) across the country to bolster the simulation provision, preparing nursing students to face the challenges of the future in a safe environment without the risks associated with clinical practice [2].

During SPL planning for a last year undergraduate adult nursing masters programme, a learning need was identified through learners' feedback, which highlighted their keenness to explore critical care before graduating. As the placement capacity could not be increased to accommodate large number of learners, the intensive care unit (ICU) environment was recreated digitally through projector-based interactive technology. Medical equipment, sounds, AI generated people, interactive touch-points and bed spaces were developed to increase immersion.

This paper focuses on the team's own learning journey in adopting the technology, whilst sharing with the simulation community challenges and lessons learnt.

Methods: This initiative took eight weeks to develop and applied the experiential learning theory to immersive-interactive technology, combining experience, perception, cognition and behaviour [3]. A post-test design was employed to target and address pre-identified challenges (Table 1). The faculty took notes throughout the sessions and reported observations to the team lead.

The two-hour-long experience followed a patient's journey from admission to discharge and aimed to enhance understanding of specialised equipment, MDT approach, deterioration management including delirium, patient and family's perspective on being cared for in ICU. Quizzes, videos, drag and drop exercises and a Padlet QR code were embedded to support different learning styles and maximise engagement.

Structured and tailored pre-brief, brief and debriefing, using the PEARLS model, reinforced learning and assured psychological safety throughout.

The steps below led to implementation.

- Identify the gap
- Form a team
- Develop vision and aims
- Develop the content
- Deliver & evaluate

Results: The team met to discuss foreseen challenges and findings after each iteration. The findings and solution after 4 iterations are presented in Table 1.

Discussion: Implementation required a multidisciplinary approach, including educators, learning technologists, and clinicians to provide a clinically sound and psychologically safe exploratory journey of a complex placement area. Albeit the initiative was successful, the literature on immersive room implementation in healthcare programmes is scarce and future work should focus on:

- Developing validated frameworks, ensuring consistency and learning effectiveness
- Implementing the technology to prepare learners for placement areas like the ICU and evaluate its effectiveness

Ethics Statement: As the submitting author, I can confirm that all relevant ethical standards of research and dissemination have been met. Additionally, I can confirm that the necessary ethical approval has been obtained, where applicable.

REFERENCES

1. Nursing and Midwifery Council. The Code - Professional standards of practice and behaviour for nurses, midwives and nursing associates 2018. Available at: NMC. Accessed 1 October 2024.
2. Bearman M, Greenhill J, Nestel D. 'The power of simulation: a large-scale narrative analysis of learners'. Medical Education. 2019;53(4):369–379.
3. Kolb DA. Experiential learning: Experience as the source of learning and development. Englewood Cliffs, NJ: Prentice Hall; 1984.

SUPPORTING DOCUMENTS – TABLE 1-A82

Table 1. Findings and solutions after 4 iterations.

	Findings	Solution
Lack of standardised practice	Unlike the tried and tested VR-based simulation, no established framework or model existed for designing and delivering an immersive room experience, leading to uncertainty and apprehension.	Produce an ad-hoc template to capture, LOs; Sequence flow (what happens at this stage); Resources needed (images, videos, sounds etc.); Interactive activity, (quizzes, drag and drop etc.)
Software inexperience	The team was unfamiliar with immersive room technology.	Regular catchups and training workshops were introduced, fostering progressive skills development.
Competing priorities	Balancing simulation development with teaching responsibilities proved challenging.	Using one version of a shared live document to identify critical steps, responsible person and obstacles, enabled asynchronous collaboration.
Educational effectiveness	Due to lack of prior experience, there were no metrics that could be used as benchmark.	A dry run, for faculty only, was conducted to test functionality and check timings. A lesson plan (LP) and a narrated video for faculty were instrumental to align LOs to delivery. The LP contained navigation of the scenes, layout of the room, duration of each scene, specific activities to run like quizzes and videos, discussion points, pre-brief, brief and debrief.
Learning and engagement	Long videos and long text caused engagement to drop.	Limit passive learning. Videos were shortened, whilst discussion points and dynamic activities were encouraged.
Future iterations	Further developments and activities stemmed from this experience.	The learning technologist adopted the template used for this experience as a starting block for a different session, resulting in a much quicker and streamlined development.