

Creating an Immersive Debriefing Experience Using Virtual Reality in Simulation-Based Learning

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The interesting “Debrief Diamond” model proposed by Jaye P *et al* demonstrates the importance of non-technical aspects such as debriefing to enhance the learners’ comprehension in a simulation-based teaching-learning environment (Jaye *et al.*, 2015). The model is a structured approach to debriefing in medical education that emphasizes understanding, analysis, and application of experiences. This model focuses on four key stages: reaction, understanding, analysis, and summary. Each stage allows learners to reflect on their experiences, process the emotional and cognitive aspects, and gain insights into their actions and outcomes. The model encourages facilitators to guide participants through these stages thoughtfully, ensuring that learning from simulations or real-life situations is consolidated and applied to improve future performance and patient care. This letter emphasizes the integration of such pedagogically strengthened models in simulation augmented with Virtual Reality (VR) in medical education.

While VR and hands-on simulation-based learning have been two independent concepts, the integration of both in collaboratively enhancing the learning outcomes has been made recently and positive opinions on the adaptability, suitability, acceptability, and practicability have been expressed by learners and facilitators alike (Liaw *et al.*, 2022).

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Adaption to the recent advances in medical education is essential without compromising the standard requirements for learning. Considering simulation-based learning, debriefing is crucial for promoting student comprehension and engagement, encouraging reflection, fostering interaction, and customizing learning experiences. But verbal debriefing may be challenged by subjectivity, interpretability, and lack of visualization impacting students’ ability to recall and reflect on the simulation scenarios. Debriefing through VR can overcome these challenges in addition to creating an engaging and realistic experience.

Aligning with the pedagogical principles and structure of the “Debrief Diamond” and virtual reality to create an immersive debriefing experience in simulation-based learning allows learners to revisit clinical scenarios interactively, engaging deeply with their actions and decisions. In this setup, debriefing becomes an active exploration where participants can observe and reflect on their responses in a realistic, risk-free environment. This immersive approach facilitates a multi-dimensional review of the simulation, helping learners identify and analyze critical moments they may have overlooked initially.

Guided by facilitators, participants can pause, replay, and dissect specific actions, fostering critical thinking and reinforcing clinical skills. The combination of VR and structured debriefing promotes reflection on both technical and emotional responses, cultivating not only competence but also adaptability in real-world situations. This integrated experience enhances situational awareness and decision-making, preparing learners to approach complex patient



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interactions with confidence and insight. But while considering this strategy, technical issues with developing and implementing, cost, authenticity and adaptability to VR technology should be considered and made sure that these debriefing approaches align with the learning outcomes and available resources.

References

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