



Virtual learning tools in health education and practice – benefits and challenges

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COVID-19 has magnified the need for online deliveries in higher education. This has further driven the necessity to create innovative learning and teaching tools to engage and motivate students. Further innovations can also assist in the training of practitioners to deliver quality health remotely. This panel will introduce virtual learning tools used in teaching and practice, and will discuss the benefits and challenges in developing and implementing these into curriculum across disciplines. The focus will compare the use of virtual learning tools to deliver health education, and related practices to its use in other disciplines of Teacher Education, Computer Sciences and the Arts. This session will explore how virtual reality (VR) technology, simulation and game engine have been applied across different disciplines and identify areas of challenge. For example in pharmacology education, the decline of laboratory activities globally is the impetus to develop VR resources to fill this pedagogical gap.

Keywords: Virtual reality, augmented reality, mixed reality, simulation, game engine, training and education, practice.

Background

If online or blended learning are here to stay as a reaction to COVID pandemic, it is imperative that universities develop more effective online learning environments that complement the on-campus experience and promote greater flexibility and accessibility for enhanced student engagement. This panel explores the use and development of virtual learning tools (1,2,3), looking at advantages for the inclusion of virtual learning models. The panel has been invited from diverse discipline with expertise and strengths in transforming education in the virtual space. This session will explore how virtual reality technology, simulation and game engine have been applied across different disciplines and identify their benefits and areas of challenge.

Panel Themes, Design and Outcomes

The panel is comprised of the Chair and five other speakers with diverse expertise in the field biological sciences, medical education, game design, medical imaging and education. This session provides opportunity to engage delegates:

- who have experience in the use of VR tools and would like to know of other virtual learning platforms
- who would like to use VR tools but unsure about how to do so
- who would like to have a better insight of how VR tools can enhance online learning
- who have little knowledge of virtual learning tools and would like to know of innovative ways to motivate and enhance students learning.

Showcase by panel members (30 minutes)

During the first 30 minutes, each speaker will provide a 5 minute overview of their work.

Author 1 and Chair: A/Professor Lisa Tee

Title: Is there a place for the use of VR tools in higher education?

Author 2: Jonathan Pillai

Title: Key considerations to designing an engaging, gamified and immersive VR experience

Author 3: Mr Christian Doran, RecoveryVR

Title: RecoveryVR - Adjunct therapy in the clinic and Telehealth in the home using Virtual Reality.

Author 4: A/Professor Rebecca Walker

Title: Supporting first year online teacher education students through using virtual reality. The research presented examined student experience in the use of a created VR to provide key study orientation information which aimed to support first year online initial teacher education students. The design of the VR was achieved by following a user-centred, iterative engineering design process and design principles of spatiality, interaction and narrative. Maya and Unity Probuilder were utilised to develop the VR.

Author 5: A/Professor Alfred Kow

Title: Using VR and MR Technology to enhance medical training and education in NUS Medicine in Singapore.

Digital transformation is set to enhance the way how medical professionals are trained in the future. Virtual and mixed reality have very strategic roles to play in this journey.

Author 6: Dr Rima Caccetta

Title: *VitOOLs a virtual learning platform for teaching Pharmacology in Health Sciences Courses*
The global decline of wet laboratory activities was the impetus to develop VR resources to fill this pedagogical gap. This project utilises Blender and Unity to create virtual patient and VR laboratory.

Academic conversation: Panel Discussion / Debate (25 minutes)

This 25 minutes panel and Q&A session is facilitated by the Chair to initiate academic conversation around the use of virtual learning tools in higher education. The academic conversation aims to also encourage attendees to share and/or debate their experience with the use of VR technology.

Some discussion-debate topics for panel and delegates include but not limited to:

- What is the impact of VR tools on teaching and academic workload?
- Is there place to embed VR resources into curriculum across disciplines?
- Is there a need to have a VR teaching resources framework/guide – the do's and don'ts.

Expected Outcomes

This symposium in form of panel discussion will provide delegates with a deeper insight into the use of VR technology for a diverse disciplines in particularly around medical and health sciences education. There is opportunity for networking with experts and further collaboration in use of VR technology and/or development of new innovative ways of learning and teaching.

References

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