

A Virtual Reality Simulation Teaching Paediatric Cardiopulmonary Resuscitation to Medical Students: Virtual Doc

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No conflicts to disclose.

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Background: Teaching Methods

- Traditional medical education¹
 - Teacher-centred
 - Lecture-based
- Technology-enhanced simulation
 - Superior learning outcomes^{2,3}
- Immersive technology
 - Active and individualised learning
 - Supported by adult learning theories

¹Ribeiro C, Antunes T, Monteiro M, Pereira J, editors. Serious games in formal medical education: An experimental study. Games and Virtual Worlds for Serious Applications (VS-GAMES), 2013 5th International Conference on; 2013: IEEE.
²Cook DA, Hatala R, Brydges R, Zendejas B, Sosnoski JJ, Wang AT, et al. Technology-enhanced simulation for health professions education: a systematic review and meta-analysis. JAMA. 2011;306(9):978-88.
³Zhang D, Zhao JL, Zhou L, Nussanaker Jr JE. Can e-learning replace classroom learning? Commun ACM. 2004;47(5):75-9.

Virtual Doc

- Designed for Oculus VR
- Paediatric cardiac arrest scenario
 - Evaluate ABC
 - Bag and mask
 - Perform compressions
 - Defibrillate the patient



Aims & Methods

Aims

- Closed beta test
- Evaluate participant satisfaction, gameplay usability, and perceived educational value

Recruitment

- Current UNSW medical students
- Voluntary convenience sampling

Outcome Measures

- Survey 1: Gameplay and design
- Survey 2: Educational value

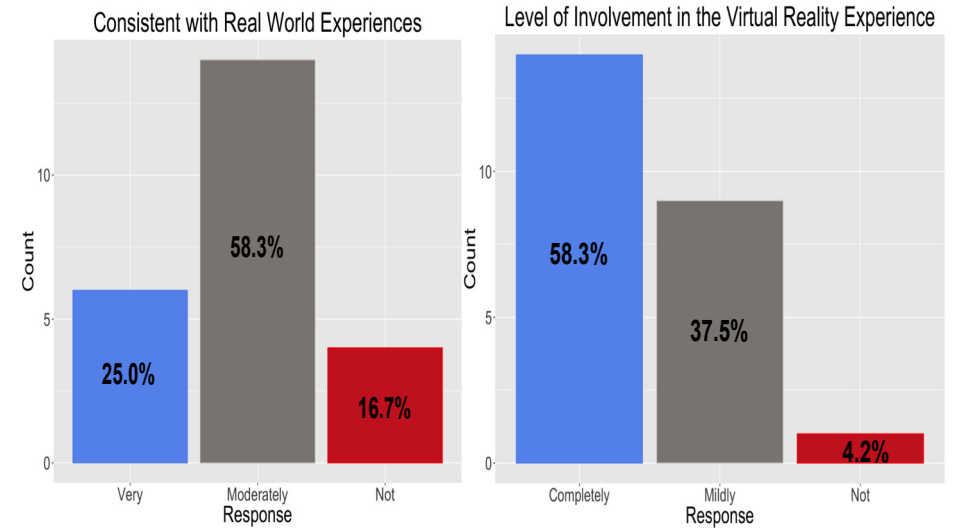
Statistical analysis via R

- Descriptive statistics

Results: Participants

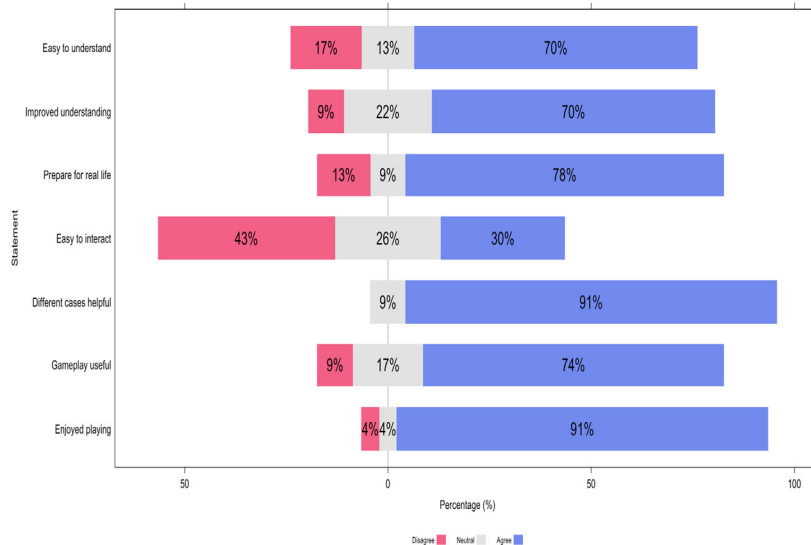
	Overall (n=23)
Female n (%)	16 (69.6)
Age in years Median (IQR)	22.0 (21.5 – 23.0)
Year of Enrolment Median (IQR)	2015 (2013 – 2015)
Local student (%)	20 (87.0)

Results: Survey 1



Results: Survey 2

Participant Satisfaction Likert Scale Graph



Conclusions

- Positive overall response to Virtual Doc.
- Further research for educational efficacy and use in clinical practice should be conducted.



Future Directions

- Further game development
 - Complex cases
 - Different algorithms
- Increase current sample size.
- Evaluate Virtual Doc with a randomised controlled trial.
- Expand Virtual Doc studies to evaluate various populations including medical and non-medical personnel.



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Students