



Developing a framework for the design and deployment of virtual reality (VR) in clinical education

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Disclosure





The Research

- Two user needs studies
 - Semi structured interview using Sutcliffe and Gaults Heuristic evaluation of Virtual Reality applications
 - System Usability Scale
 - Observation and note taking
 - Automated data collection
 - Thematic analysis of all findings



The Framework

Factors and exemplar statements

- Advanced roles
 - The ability to manage tasks at an acceptable standard
- Accessibility
 - Clarity as to how commands are given and accessed
- Agency
 - The environment providing opportunity to control workflows autonomously and make choices that align with prior experiences, such as multitasking
- Completion
 - Clear commencement and completion prompt to task
- Diverse input modalities
 - The environment replicates natural input modalities such as issuing commands verbally
- Mental models
 - The environment design and prompts align with how the clinical environment operates (eg, 2 minutes of cardiopulmonary resuscitation completion)
- Motion sickness
 - That all efforts are made to reduce the experience of motion sickness for the user so they can engage with the experience
- Perceived value
 - The application provides an experience perceived as valuable by the user
- Privacy
 - The application and deployment experience should maintain the user's privacy
- Realistic tasks
 - Common clinical tasks should be available for completion in a realistic manner
- Visibility
 - Clear visible assets aligned with environmental orientation



The Outcomes

JMIR SERIOUS GAMES

Moore et al

Original Paper

Exploring User Needs in the Development of a Virtual Reality-Based Advanced Life Support Training Platform: Exploratory Usability Study

JMIR SERIOUS GAMES

Moore et al

Original Paper

Designing Virtual Reality-Based Conversational Agents to Train Clinicians in Verbal De-escalation Skills: Exploratory Usability Study

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Innovation During a Pandemic: Developing a Guideline for Infection Prevention and Control to Support Education Through Virtual Reality

Nathan Moore^{1*}, Kathy Dempsey¹, Peter Hockley¹, Susan Jain¹, Philip Poronnik¹, Ramon Z. Shaban^{1,2,3} and Naseem Ahmadpour^{2,4}

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IJHS

SHORT REPORTS ON SIMULATION INNOVATIONS
SUPPLEMENT (SRISIS)

Designing virtual reality experiences
to supplement clinician Code Black
education

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Philip Poronnik¹, Jennifer Davids^{1,2}

