Engaging Students Using Virtual Reality to Transform Learning

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Program Objective for Session

Integrate new tools, including Virtual Reality, other technology and active learning models, into nursing education which promotes student/faculty engagement and improves outcomes while transforming learning.
Session Objectives

• Describe historical and current knowledge of virtual reality as a teaching methodology

• Discuss the utilization of virtual reality teaching methodologies to teach pre-licensure nursing and health professions students

• Learners will utilize an anticipation guide format to create discussion on the integration virtual reality into curricula
Star Trek: The Early Generation

https://youtu.be/oZwtVz7z0wM

CBS Entertainment |™ & © 2018 CBS Studios Inc
Discussion 1:

Virtual reality simulation-based education is the answer to a knowledge or skill deficit.
Historical Background & Current Presence

• The Existence of Gaming in Nursing Education

• Virtual Reality: Standardizing Definitions

• Current Teaching Methodologies
Simulation: Screen Based Interactions

Interactive Clinical Education:
Sentinel Town® - Rural Community Simulation

https://youtu.be/0wZmVY2vlZ0

virtual-clinical-simulations/sentinel-city-urban-community/
Effectiveness of Virtual Reality on Operating Room Fire Safety Skills among Nursing Students

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Virtual reality simulation is the answer to a knowledge or skill deficit.

https://youtu.be/DAksPjHTRUc
A Mixed Reality Approach

**Live, Virtual, & Constructed Simulation**

“A broadly used taxonomy describing a mixture of simulation modalities; a live simulation involves real people operating real systems; a virtual simulation is where a real person operates simulated systems; and a constructed simulation does not involve real people or real systems, but instead are computer programs that create an environment”.

**Augmented Reality**

“The combination of reality and overlay of digital information designed to enhance the learning process”.

Sokolowski et al., 2011 as cited in 2016; Healthcare Simulation Dictionary

Photo Credit: https://program-ace.com/blog/future-of-healthcare-5-ar-mr-use-cases-in-medicine
Collaborating to Test the Usability of a 2nd Generation Virtual Reality Skills Game

Nursing students frequently do not identify themselves as “gamers”. Those who DO identify as gamers found the SUCI game the most usable.
Anticipation Guide: Curricular Considerations

Discussion 2:

Integrating virtual reality simulation-based education into the nursing curriculum is valuable.

Photo Credit: https://www.organimi.com/survey-says-use-org-charts/
SIMULATION DESIGN

Needs Assessment

- Pilot Test
- Measurable Objectives
- Format of Simulation
- Scenario or Case
- Debriefing
- Prebriefing
- Preparation
- Facilitative Approach
- Evaluation

Criterion 1 - Needs Assessment
Perform a needs assessment to provide the foundational evidence of the need for a well-designed, simulation-based experience.

Criterion 2 - Construct Measurable Objectives
Develop broad and specific objectives to address identified needs and optimize the achievement of expected outcomes.

Criterion 3 - Format of Simulation
Structure the format of a simulation based on the purpose, theory, and modality for the simulation-based experience.

Criterion 4 - Scenario or Case
Build context, situation or case, backstory, clinical progression, casts, time frames, and scripts.

Criterion 5 - Fidelity
Use various types of fidelity to create the required perception of realism.

Criterion 6 - Facilitative Approach
Maintain a facilitative approach that is participant-centered and driven by the objectives, participants' knowledge in the field of experience, and the expected outcomes.

Criterion 7 - Prebriefing
Begin simulation-based experiences with a prebriefing.

Criterion 8 - Debriefing
Follow all simulation-based experiences with a debriefing and/or feedback session.

Criterion 9 - Evaluation
Include an evaluation of the participants, facilitator(s), the simulation-based experience, the facility, and the support team.

Criterion 10 - Participant Preparation
Provide preparation materials and resources to promote participants' ability to meet identified objectives and achieve expected outcomes of the simulation-based experience.

Criterion 11 - Pilot Test
Pilot test simulation-based experiences before full implementation.

NOTE: The REQUIRED ELEMENTS for the criterion can be accessed by following the link below.

Standards of Best Practice: Simulation™
For the complete version go to: www.nursingsimulation.org/standards
# The Future of Virtual Reality

## What the Industry is Saying
- Research
- Unification of Definitions
- Infancy Stage
- Realism with Avatars
- Realism Computer Graphics

## What the Learners are Saying
- Ease of Use
- Where is the Tactile or “Feel”?  
- Real
- New
- Fits Learning Style
Discussion 3:

What knowledge or practice action do you anticipate using to transform your own teaching as a result of this session?
Resources


