THE PRESENCE OF VIRTUAL SIMULATION IN NURSING EDUCATION: AN UPDATE

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Augusta University College of Nursing Center for Nursing Research Seminar
At the Conclusion of this CNR Seminar Learners will:

<table>
<thead>
<tr>
<th>Describe</th>
<th>Describe historical and current knowledge of virtual reality simulation as a teaching methodology.</th>
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<tr>
<td>Discuss</td>
<td>Discuss the current state of the science in the literature on virtual reality modalities.</td>
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<td>Discuss</td>
<td>Discuss the potential for integrating virtual reality teaching modalities into an existing curriculum.</td>
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Presentation Note: Dr. Rossler reports no conflict of interest, however, two affiliations to share include:
- International Nursing Association for Clinical Simulation and Learning (INACSL) Standards Committee Member
- Society forSimulation in Healthcare CHSE Readiness Review Advisory Team Member
A Closer Look at Terminology (as cited in Lioce et al., 2020)

Virtual Simulation

- “A simulation involving real people operating simulated systems” (p. 56)

Virtual Reality

- “Use of computer technology to create an interactive 3D world where the objects have a sense of spatial presence” (p. 55).

Virtual Reality Simulation

- “Simulations that use a variety of immersive, highly visual, 3D characteristics to replicate real-life situations and/or healthcare procedures...Distinguished from computer-based simulation in that it generally incorporates physical or other interfaces…” (p. 56)
Historical Background of VRS Teaching Methodologies

Medical Education
(Bracq et al., 2019)
- Laparoscopic Surgical Interventions
- Robotics
- Critical Event Training

Nursing Education
(Foronda et al., 2020)
- Skill Performance
- Learner Satisfaction
- Critical Thinking
- Self-Confidence

Interprofessional Education
(Qiao, 2021)
- Communication and Collaboration
- Attitudes
- Team Building
Screen-Based Simulation – Familiar Platforms

Photo Credit:
https://www.shadowhealth.com/products/health-assessment
https://shopcpr.heart.org/heartcode-bls-accessible
http://www.evaluatinginnovationsinnursing.org/our-grantees/wisconsin
Current Teaching Methodologies

Second Life® and The Neighborhood

Digital Clinical Experience and SimX

Voki Classroom and Mooshak

Vsim for Nursing and First2ACT

CliniSpace®, Web-SP Virtual Patient System, and Virtual Pediatric Patients

CathSim, VI-MED, Oxford Medical

Unity 3D and Virtual Gaming Simulation
### Present and Emerging Research in Education on VRS

<table>
<thead>
<tr>
<th>YEAR</th>
<th>AUTHORS</th>
<th>TITLES</th>
<th>OVERVIEW</th>
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<tbody>
<tr>
<td>2021</td>
<td>Leighton, K., Kardong-Edgren, S., McNelis, A.M., &amp; Foisy-Doll, C.</td>
<td>Traditional Clinical Outcomes in Prelicensure Nursing Education: An Empty Systematic Review</td>
<td>Explored the effectiveness of traditional apprenticeship models in nursing education. Evidence was lacking to support traditional clinical models.</td>
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<td>2021</td>
<td>Badowski, D., Rossler, K., &amp; Reiland, N.</td>
<td>Exploring Student Perceptions of Virtual Simulation Versus Traditional Clinical and Manikin-based Simulation.</td>
<td>Examined students' perceptions of virtual simulation in meeting their learning needs when compared to traditional clinical experiences and manikin-based simulation environments. Traditional clinical experiences remained the preference. Manikin-based simulation met needs of critical thinking and teaching-learning. Virtual simulation met learning needs for nursing process, critical thinking, self-efficacy, and teaching-learning dyad.</td>
</tr>
<tr>
<td>2021</td>
<td>Leighton, K., Kardong-Edgren, Schneidereith, T., Foisy-Doll, C., &amp; Wuestney, K.A.</td>
<td>Meeting Undergraduate Nursing Students’ Clinical Needs: A Comparison of Traditional Clinical, Face-to-Face Simulation, and Screen-Based Simulation Learning Environments</td>
<td>Explored student experience when learning with the three different learning environments using the Clinical Learning Environment Comparison Survey 2.0 (CLECS 2.0). The traditional clinical learning environment demonstrated the highest scores while the screen-based simulation received the lowest scores.</td>
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Feedback from the Industry

DEFINITION CLARITY
THE BUSINESS OF GAMING
REALISM OF AVATARS
COMPETENCY AND READINESS FOR PRACTICE
Feedback from the Learners

USABILITY
REALISM

LEARNING STYLE

CLINICAL SKILLS
PREPAREDNESS
Curricular Considerations to Explore when using VR Teaching Modalities
What are areas to potentially integrate VR into your current curriculum?
Questions
Wrap-Up
Evaluations
Supporting References


INACSL Standards Committee. (2016). INACSL Standards of Best Practice: SimulationSM, Clinical Simulation in Nursing, 12(Suppl), S1-S50


INACSL Standards Committee. (2016). INACSL Standards of Best Practice: SimulationSM, Clinical Simulation in Nursing, 12(Suppl), S1-S50


