

SIMULATION RESEARCH: INFORMING BEST PRACTICES IN NURSING EDUCATION



STTI International Nursing Research Congress

Dublin, Ireland 2017

Dr. Susan Gross Forneris, Dr. Diana Odland Neal, Dr. Jone Tiffany

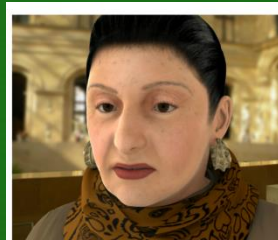
Disclosures

- *Dr. Forneris' study was supported in part by a grant to the National League for Nursing (NLN) from Laerdal Medical and Wolters-Kluwer Health*
- *Dr. Forneris is an employee of the NLN, Washington, DC, USA*
- *Dr. Neal and Dr. Tiffany – no disclosures*

Symposium Objectives

- Discuss findings of simulation research that are informing nursing education to use simulation active teaching strategies.
- Discuss faculty development initiatives to support the changing faculty role with emerging simulation best practices.
- Discuss how to transfer active learning principles from reflective debriefing for use across the curriculum to achieve learning outcomes.

Integrating Virtual Simulation into the Curriculum: An Exploratory Study




Mona Hernandez
Diagnosis: Pneumonia

Location: Medical Unit 1600
Report from day shift nurse:

Situation: Mona Hernandez is a 72-year-old Hispanic female who was admitted to the medical unit yesterday afternoon with a diagnosis of pneumonia in her right lobe. Chest X-ray shows infiltrates in right lower lobe, indicative of pneumonia. She was started on antibiotics after a sputum specimen for Gram

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Sherman "Red" Yoder

Report from home health nursing manager:

Red is an 80-year-old farmer and war veteran who lives by himself, 20 miles from the nearest city. He has been a widower for 30 years but his son and daughter-in-law, Jon and Judy, live nearby. He was diagnosed with type 2 diabetes about six months ago and recently began taking insulin.

We (nurses from the home health agency) have been asked to see him to evaluate a wound caused by wearing shoes that were too tight. The toe was injured about three weeks ago. Red has been treating it by soaking his foot in water.

His daughter-in-law, Judy, expressed concerns about his ability to manage diabetes self-care, and he has agreed that she can be present for the conversation. We know he is very independent, alert, and oriented. He drives himself into town at least once a week and spends a lot of time on his computer.

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Carl Shapiro
Diagnosis: Acute Myocardial Infarction
Location: Telemetry Unit

Carl Shapiro is a 54-year-old male who travels frequently. He was seen in the Emergency Department at 1:30 p.m. for complaints of chest pain, diaphoresis, and shortness of breath. He was treated in the Emergency Department with aspirin and two doses of sublingual nitroglycerin.

Chest pain improved with nitroglycerin administration. IV infusion of normal saline was started in the Emergency Department and is running at 25 mL/hour. Ordered lab values are pending. Provider wants to be called as soon as the labs are available.

Patient is receiving oxygen at 4 L/min with SpO2 values at 97%. Chest pain was last rated as a 0 following second nitroglycerin dose and nitroglycerin patch 0.4 mg. He has been admitted to the Telemetry Unit.

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Mary Richards
Diagnosis: Congestive Heart Failure

Location: Cardiology Unit 22:00
SBAR report from ED nurse:

Situation: I have taken care of Ms. Richards in the emergency department and I would like to give you a report on her. Ms. Richards is an 82-year-old African American female who was brought to the emergency department by her son this evening when he found her confused and complaining of trouble with her vision. Ms. Richards has been ill for several days with complaints of nausea, dizziness, and weakness.

Background: Ms. Richards has a history of hypertension, diagnosed 40 years ago, and heart failure, diagnosed 30 years ago. Her current medications include furosemide, amlodipine, and digoxin.

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Susan Gross Forneris, PhD, RN, CNE, CHSE-A
National League for Nursing

Goals of the Exploratory Study

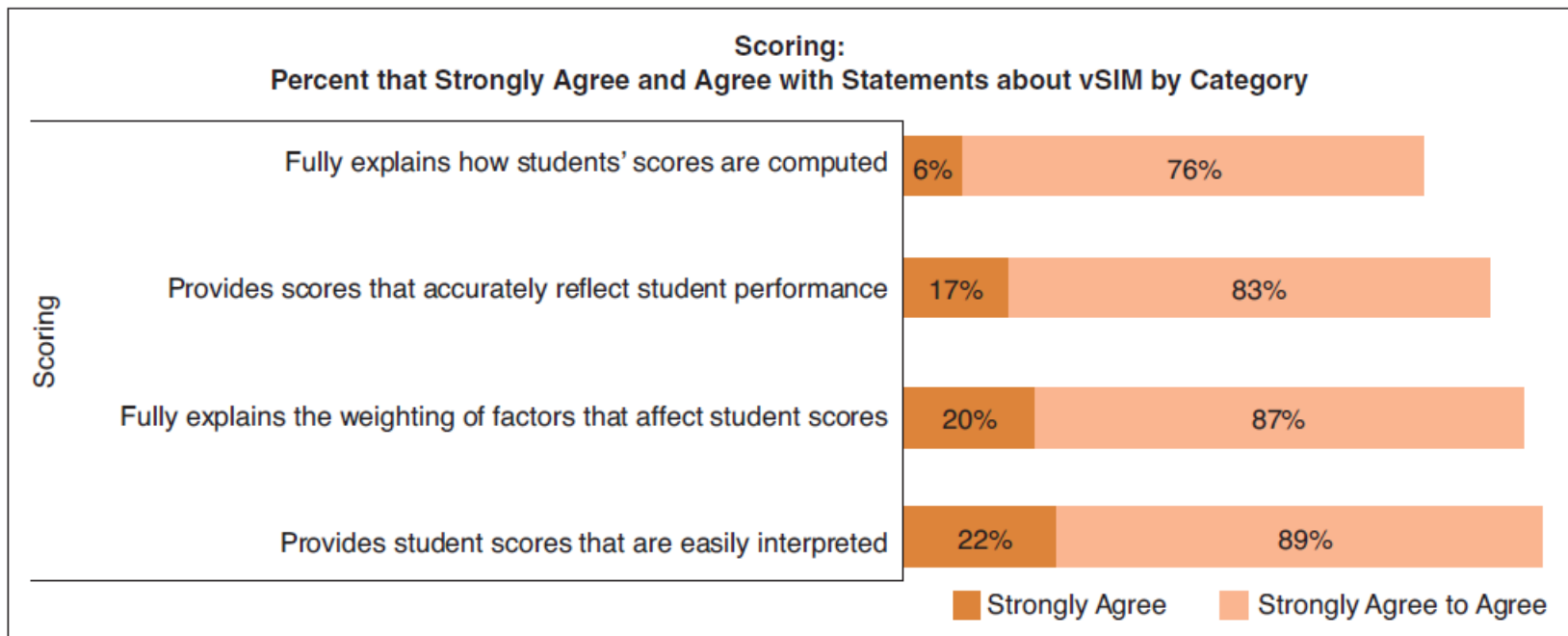
- Integrate vSim for Nursing into nursing curriculum for one semester
- Evaluate the effectiveness of vSim for Nursing as an active learning teaching strategy
- Create a faculty implementation guide as a means of faculty development in the use of a virtual simulation teaching strategy

Focused Areas of Exploration

- *Utility as a teaching tool*
- *Classroom Approaches*
 - Flipping the Classroom
 - Classroom Group Debriefing
 - Small Group Concept Mapping
- *Coursework*
- *Targeted Lab Activity*
- *Remediation*

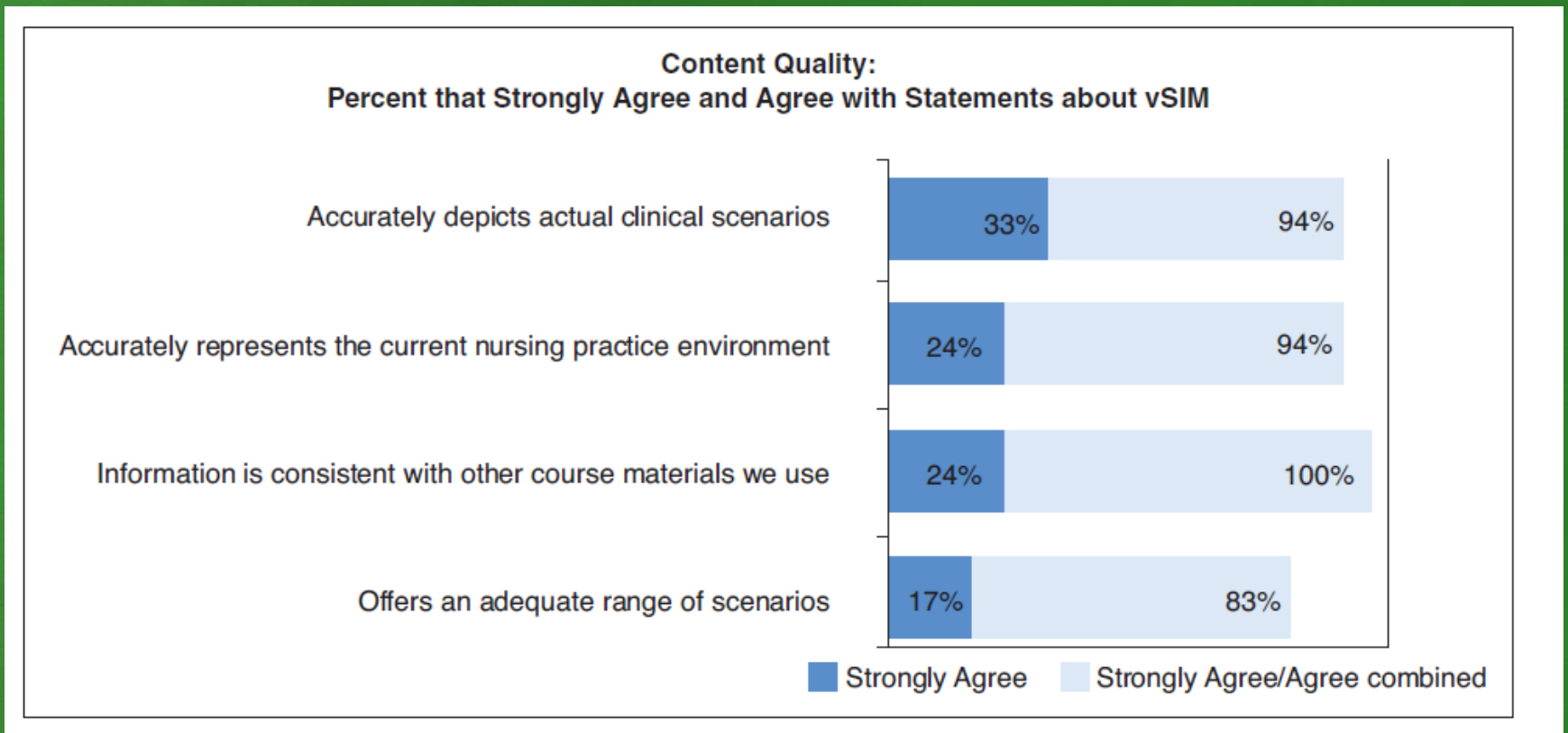
Findings

Summarizes the evaluation of the vSim scoring features by faculty who participated in the pilot study.



Findings

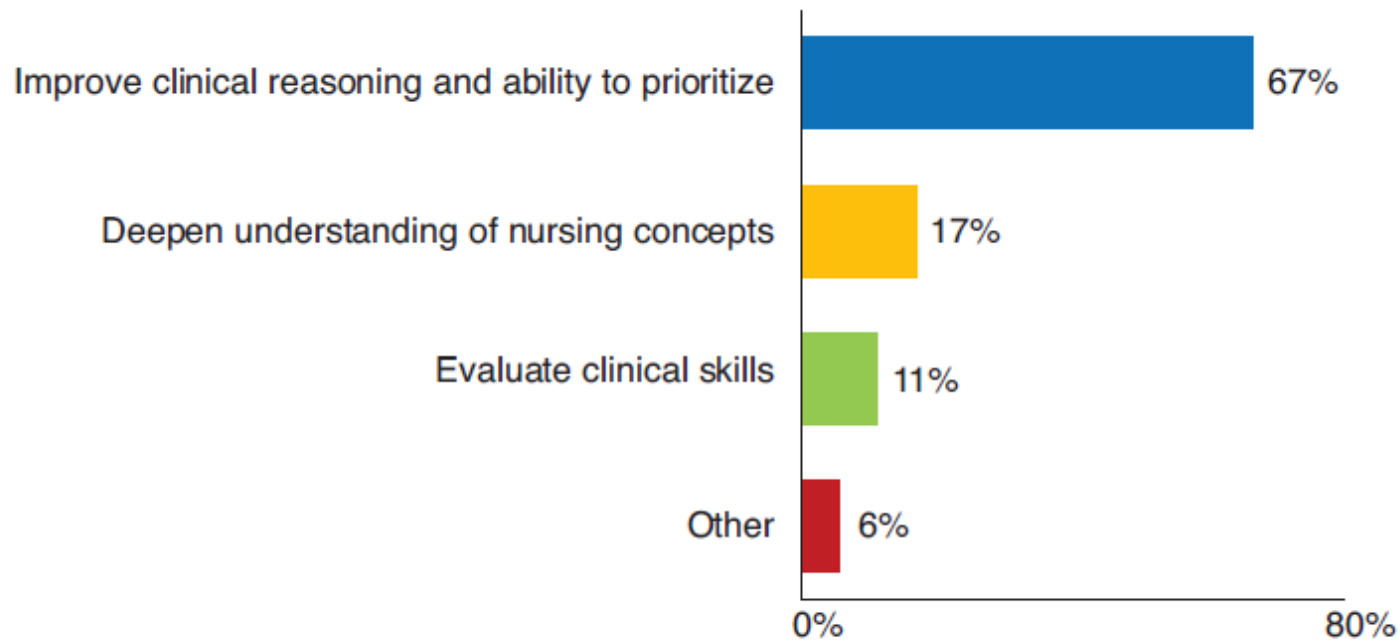
Content Quality:



Findings

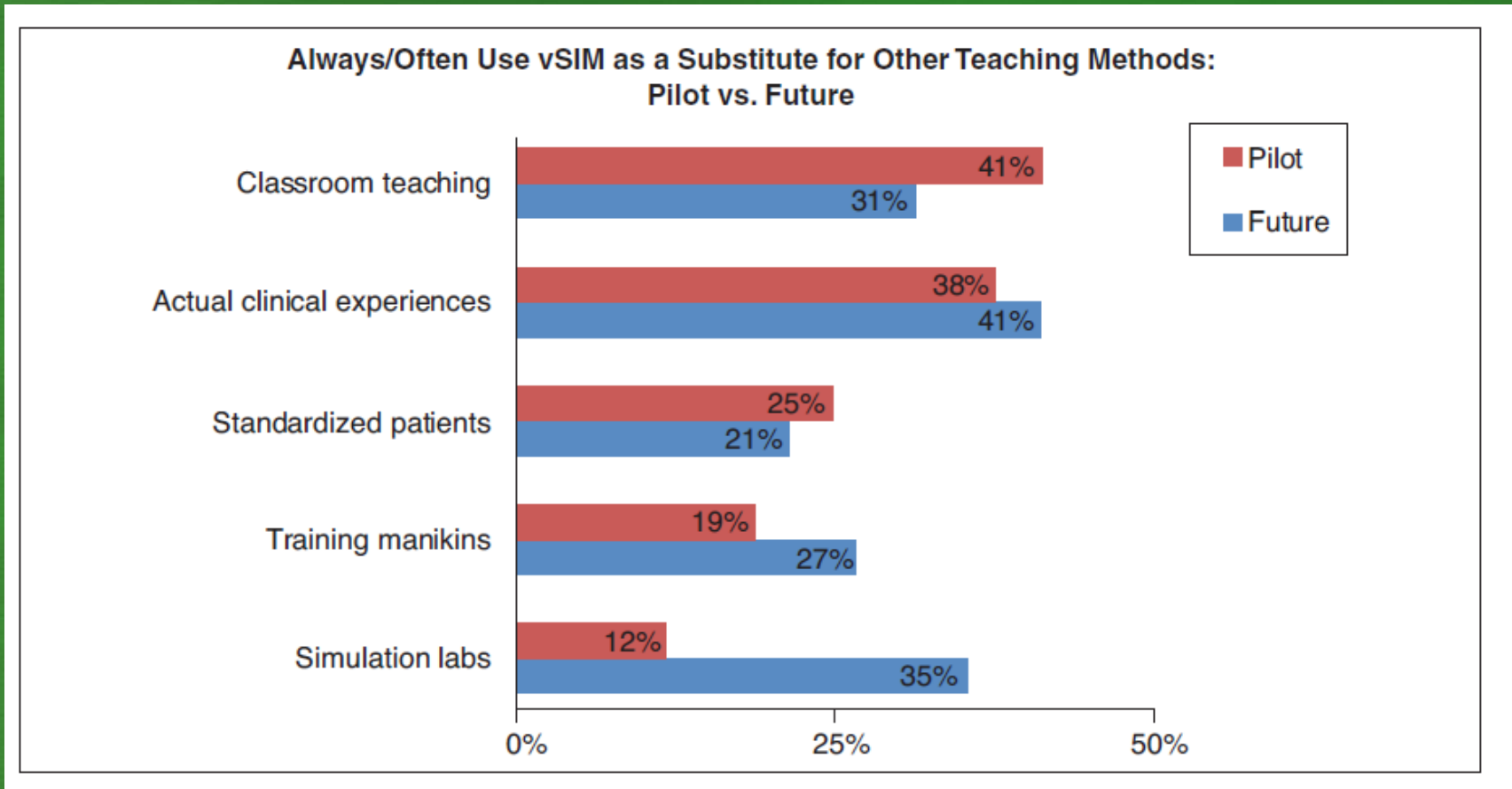
Primary Learning Objective:

Primary Learning Objective when Using vSIM During the Pilot Period



Findings

Substitute for other Teaching Methods:






Classroom Approaches

Using Story...Virtual Flipped Classroom


Role modeling critical thinking...virtually

vSim for Nursing | MEDICAL-SURGICAL





Skyler Hansen
Diagnosis: Diabetes
Location: Emergency Department



Skyler Hansen is an 18-year-old male diagnosed with type 1 diabetes 6 months ago.

He was brought to the Emergency Department by his friends.

The friends report that he started acting 'weird' while they were playing basketball. He has not eaten anything for 5 hours.

Skyler told them that he felt lightheaded and was going to lie down on the cement. They became nervous and decided to bring him in to the Emergency Department. The patient is drowsy, wakes with stimulus, has slurred speech, is diaphoretic, and is acting irrationally.

BEST RESULT


3 0 0
x x x
x x x

➔

81%
SCORE

[Click here to see all previous attempts](#)

HELPFUL TIPS

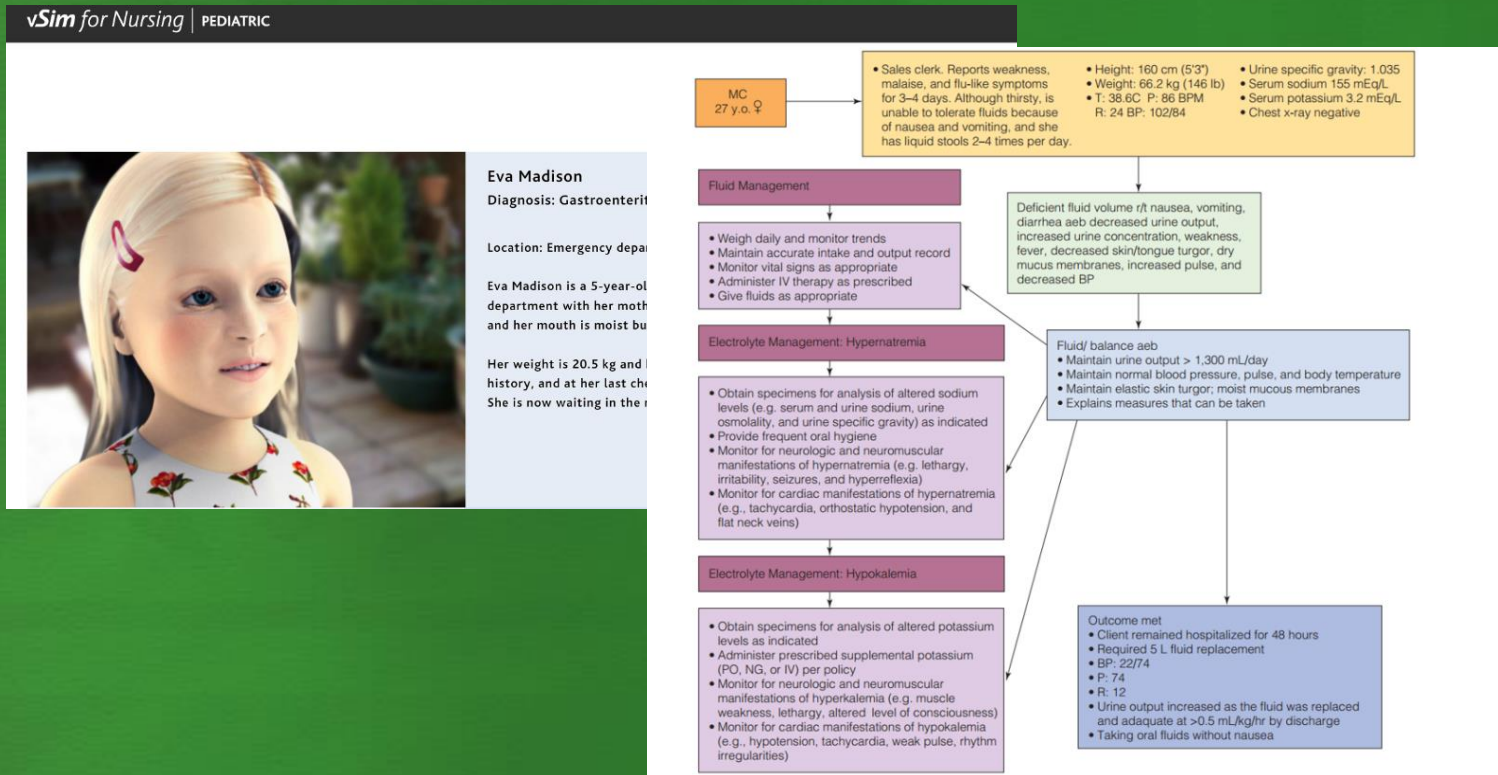
 A flashing 'Electronic Health Record' icon indicates that new orders or results from tests and diagnostics have been added to the record.

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Classroom Approaches

Using story...

Simulation Concept mapping...virtually!



Classroom Approaches

Using story...

Differentiating low acuity – high frequency
from
high acuity low frequency

- Pediatric Case 3: Sabina Vasquez (Core)



- Pediatric Case 4: Sabina Vasquez (Complex)



- Maternity Case 1: Olivia Jones (Core)




- Maternity Case 2: Olivia Jones (Complex)



Classroom Approaches

Using story...Delegation and Supervision...virtually




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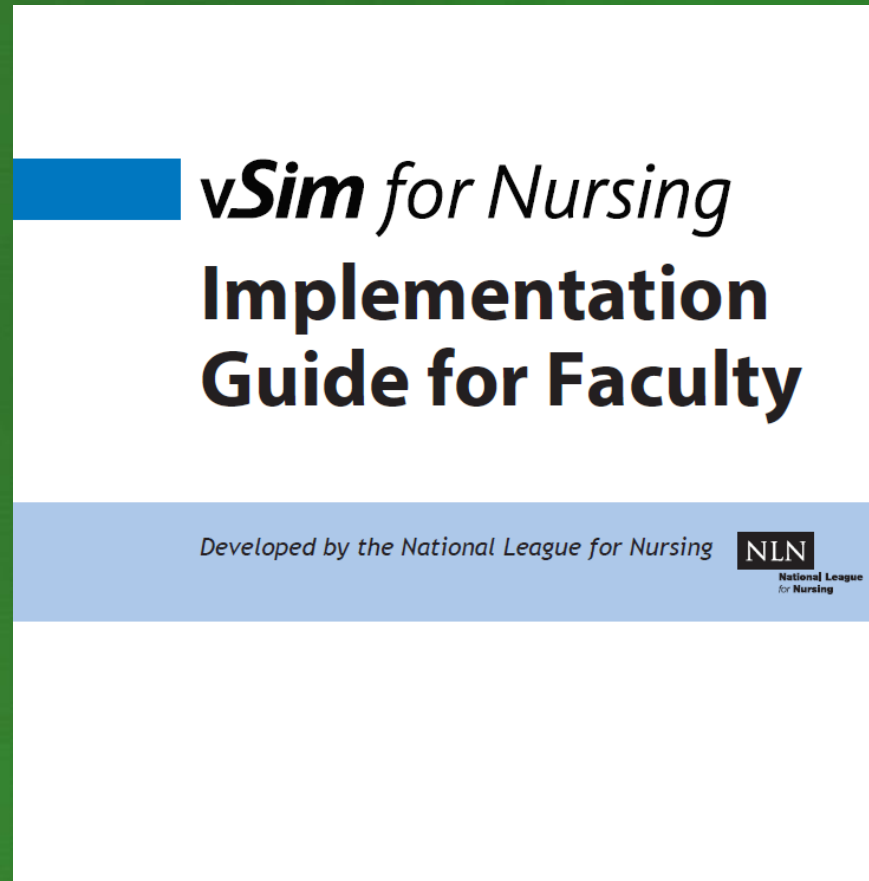
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Background: Ms. Richards has a history of hypertension, diagnosed 40 years ago, and heart failure, diagnosed 30 years ago. Her current medications include furosemide, amlodipine, and digoxin.

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Faculty Development



Using Simulation to Enhance Clinical Reasoning During Medication Administration: A Multi-Site Qualitative Study

Dr. Diana Odland Neal

Using Virtual Simulation to Enhance Student Learning: A Case-Based Approach

Dr. Jone Tiffany



Objectives

- Discuss the use of virtual role-play simulation to increase cultural sensitivity in healthcare professionals.
- Examine future implications for the educational uses of virtual world environments for healthcare professionals.

Jone



Zelda



“Ugly in a World Where You Can Choose to be Beautiful”: Teaching and Learning About Diversity via Virtual Worlds



Inclusivity Assignment



Field Study Experience Objectives: <ol style="list-style-type: none"> 1. Describe the nature of values and value systems and their influence on behavior applied in a variety of settings. 2. Identify personal and professional values that influence the decision-making process when interacting with diverse clients and students. 3. Synthesize the literature and the SL field study experience into an action plan for how to ensure inclusivity in nursing practice and education. <p>Note: Nurse educator students in this course have had significant readings and class discussions regarding inclusivity prior to participating in this culminating course activity. This experience is preceded by an orientation to Second Life® using online tutorials and a face-to-face classroom session. The avatars used in this field study experience were created specifically for this assignment.</p>	
Part I: Meet Your Avatar	<p>A photo and biography of an avatar representing a marginalized person is provided to each student.</p> <p>Upon meeting your assigned avatar, write a 2-3 page reflection paper that addresses the following questions:</p> <ol style="list-style-type: none"> 1. How do you feel about being assigned this avatar? 2. What are your initial reactions after reviewing this avatar's photo and biography? 3. What are your isms or biases with regards to people who reflect this avatar?
Part II: Virtual Field Study Activities	<p>You have been provided with a variety of social networking site landmarks in SL that are outside of Nightingale Isle. Sign into SL as your assigned avatar and go into these sites acting as if you are this person. You may not change the assigned avatar in any way. You are not to divulge that you are a student engaging in a project. Plan on spending at least ten hours in SL.</p>
Part III: Synthesis Paper	<p>Upon completion of the activities within SL, write a 4-5 page paper incorporating the following:</p> <ol style="list-style-type: none"> 1. What attitudes, biases, and isms did you bring with you into the sites you visited as your assigned avatar? How did this affect your interactions with other avatars in SL? 2. How were you treated by other avatars in SL? How did you feel about that? 3. If you had been able to change your assigned avatar before visiting SL social networking sites, what changes would you have made to increase your level of comfort? 4. Integrating course concepts and personal lessons learned during this assignment, explain how you might use and apply this knowledge in the nurse educator role. 5. How do you anticipate your nursing practice will change after completing this field experience and course?
Part IV: Class Presentation	<p>Prepare a 5 slide presentation on your experiences in SL that integrates related course concepts. Include 1) a summary of your experience in SL; 2) integration of the SL field study experience with course readings and discussion; and 3) a discussion of how you will use what you have learned to create an inclusive nursing education environment (give specific examples). These slides will be presented during the last night of class.</p>

Figure 3 Inclusivity field study experience in Second Life®.

Examples of Diverse Avatars that can be purchased in SL marketplace.



Lacey Tigerauge



Abukar Kariunga



Cody Wheelwright



Javan Soulstar



Deepa Islar



Destiny Endersleigh



Louie Macalroy



Lottie Botside



Jenice Brunsen



Ned Horsley



Manderson Dexler



Susan Taselian



ROLE PLAY SIMULATION STORIES

As the students ventured out into the virtual world of Second Life, they took the avatar stories with them and played them out with other avatars they met. As the stories became more and more real to the students, they elicited some interesting responses.



Abukar Kariunga

“Being treated like this in real life would have a negative impact on how I viewed myself.”



“I still bring my own personality to my avatar - A bit of projection?”

“I was nervously excited to get started.”

“My fear of others thinking I was a terrorist might have been my own bias.”

“Other Avatars wouldn’t come close to me.”

“I think I have a better idea of what being a minority is like.”

Cody Wheelwright

“How I thought
I would be
treated affected
the way I
interacted with
others.”



“Other Avatars
wouldn’t come
close to me.”

“If I had a
choice I
would lose
the
wheelchair.”

“I found my
inner voice..
I felt
empowered
to do things
I wouldn’t
do in real
life.”

“Through this
I gained an
appreciation
for my biases
and
prejudices.”

“Homophobia
.. Why were
other male
avatars afraid
I was hitting
on them?”

Deepa Islar

“I thought since I was a millennial I would love this.....I didn't.”



“Doing this assignment made me realize that I have biases about certain age groups that are not true.”

“I encountered the micro-aggression of disability blindness.”

“I found I judged people because of their appearance..that surprised me.”

“People learn in different ways, and it is important to include a variety of techniques.”

Destiny Endersleigh

“I thought since I was a millennial I would love this.....I didn't.”

“Other avatars made rude comments about my clothes asking me if I got them at a thrift shop?”

“I would have been more comfortable if I looked like myself.”

“After completing this assignment, I have noticed the lack of inclusivity in my place of work.”



“When I was at the beach I was told that I wouldn't get any darker if I sat in the sun. “

Javan Soulstar

“I didn’t interact with others because I was afraid how they would react to me.”



“I projected my own biases on my avatar. I thought people who think badly of me because of how I looked.”

“I didn’t want the homeless avatar to hang out with me.”

Lottie Botside

“When I encountered other avatars in my travels, they ignored me and moved away from me.”



“I thought other avatars would judge me because of my size. So, I stayed to the outside of the social places.”

“If I had a choice I would have made my avatar slimmer.”

“Initially, I was worried I would project my feelings of insecurity on my avatar.”

Mildred Poggel

“I was confident that my avatar would be an outcast and be ignored.”



“Other avatars didn’t understand why I would choose to be old when I could be young and beautiful.”

“When I met my avatar I was mortified. I didn’t want to be an old woman.”

Ned Horsley

“At first I was nervous to play a homeless person. I was amazed at how some people reacted to my avatar.”



“As a virtual person, you can create all of your attributes and even your personality to some extent.”

“I found that he was either ignored/taunted or pitied.”

“Why would I want to be a homeless man when I could choose to be anyone out in Second Life.”

“One avatar listened intently to my story, and then offered support, money, and words of wisdom.”

Publications About This Research

Clinical Simulation in Nursing (2014) 10, e19-e24



Featured Article

Teaching/Learning in Second Life: Perspectives of Future Nurse-Educators

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KEYWORDS

Second Life;
online virtual world;
virtual reality;
avatar;
simulation;
nurse-educator;
nursing education;
innovative teaching/
learning strategies;
teaching/learning;
computer self-efficacy

Abstract

Background: Innovative teaching/learning strategies that simulate real world situations are needed. The virtual world of Second Life (SL) provides an opportunity for nurse-educators to develop meaningful, simulated learning experiences that are transferable to the real world of nursing practice.

Methods: Students enrolled in a graduate nursing education course were invited to complete pre- and post-activity surveys regarding perceptions and experiences related to using SL as a teaching/learning strategy.

Results: The simulated role play experience in SL helped 30 of 33 students to apply concepts regarding the lived experience of marginalized persons. Seven described a meaningful learning experience; 11 reported a sense of presence and connectedness. Barriers and challenges related to technology, self-efficacy, and communication within the virtual world were identified.

Conclusions: With careful planning, the use of SL as an innovative teaching/learning strategy for nursing education was validated.

Cite this article:

Tiffany, J., & Hoglund, B. A. (2014, January). Teaching/learning in second life: perspectives of future nurse-educators. *Clinical Simulation in Nursing*, 10(1), e19-e24. <http://dx.doi.org/10.1016/j.cnsn.2013.06.006>

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Nurse-educators are facing unparalleled challenges to address the changing demographics and learning styles of today's learners and the ever evolving, complex requirements of the practice environment. In addition, many of today's traditional-aged college students have been raised in a multicultural, multiethnic, global world. This generation has grown up with technology in all areas of life: Communication, music, entertainment, and education (Bennett, Stupen, Leonard, & Day, 2010; Billings, 2007). These factors, coupled with the knowledge explosion and complexity of new information technologies, have nurse-

educators reevaluating the relevance of current teaching strategies. Innovative educational strategies are needed to better prepare nurses to succeed in complex health care environments where quality and safety are paramount.

Virtual reality software and environments such as Second Life (SL, Linden Labs, San Francisco, CA) hold potential as part of the solution by providing an innovative and interactive platform for educational experiences that simulate real-world situations. This platform offers opportunities to utilize the virtual world to expose nursing students to learning in a new way. The purpose of this small, exploratory study was to trial the use of SL with graduate nurse-educator students, and to obtain insight regarding this innovative teaching/learning methodology.

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Clinical Simulation in Nursing (2016) 12, 115-122



Featured Article

Using Virtual Simulation to Teach Inclusivity: A Case Study

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KEYWORDS

simulation;
virtual reality;
simulation;
Second Life®;
avatar;
inclusivity;
diversity;
cultural awareness;
nursing education;
innovative teaching/
learning strategies;
role-play

Abstract

Background: The topics of inclusivity, diversity, and cultural awareness are difficult to adequately explore in a traditional classroom setting. The use of the virtual platform of Second Life® afforded a unique opportunity to use virtual role-play simulation to experience what it is like to walk in another's shoes.

Methods: Fifteen graduate nurse educator students enrolled in a course titled "Inclusivity in Nursing Education" were randomly assigned a customized avatar, representing a marginalized person for use in a role-play simulation in the virtual world of Second Life®. Two written assignments regarding the learning experience were evaluated using a simple qualitative analysis.

Results: Students indicated that they increased their own capacity to understand, appreciate, and relate to people different from themselves.

Conclusions: Although future research is needed to determine the full extent to which virtual platforms can be used effectively in nursing education, this case study demonstrated that valuable learning regarding complex topics can take place in the virtual world.

Cite this article:

Tiffany, J. M., & Hoglund, B. A. (2016, April). Using virtual simulation to teach inclusivity: A case study. *Clinical Simulation in Nursing*, 12(4), 115-122. <http://dx.doi.org/10.1016/j.cnsn.2015.11.009>

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To facilitate safe and effective nursing practice, nurse educators strive to develop curriculum that facilitates an appreciation and understanding of diversity and helps nursing students learn to understand and patient cultural frames of reference as filtered by their own lens (Pyburn & Bauman, 2013). Because inclusivity and cultural competency are difficult topics to address in the classroom and nursing students have varied clinical experiences that expose them to these concepts, an innovative approach to address these concerns was needed. This article describes the use of Second Life®

(SL) as an interactive learning environment and how SL facilitated graduate nursing student exploration of concepts related to cultural awareness, inclusivity, diversity, personal bias, and -isms as related to the practice of nursing. The results of simple, qualitative thematic analysis of two written student assignments are presented.

Theoretical Underpinnings

Nursing education is moving from traditional pedagogies to the use of constructivist pedagogy, which shifts the role of

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