

A decorative border at the top of the slide features various kitchen items in silhouette, including pots, teapots, a knife, a frying pan, a teacup, and a whisk, arranged in a curved pattern.

A Recipe for Engaging Learners: The Use of Virtual Simulations in Your Teaching Practice



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By the end of the webinar session, participants will be able to

- Describe the use of virtual simulations in nursing education.
- Explain the benefits and limitations of using virtual simulations in nursing education.
- Describe helpful “how to” advice and considerations on getting started with virtual simulations.

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Virtual Simulations

- Definition: Virtual Simulations engage one or more learners in an online, safe, and as real as possible learning activity.

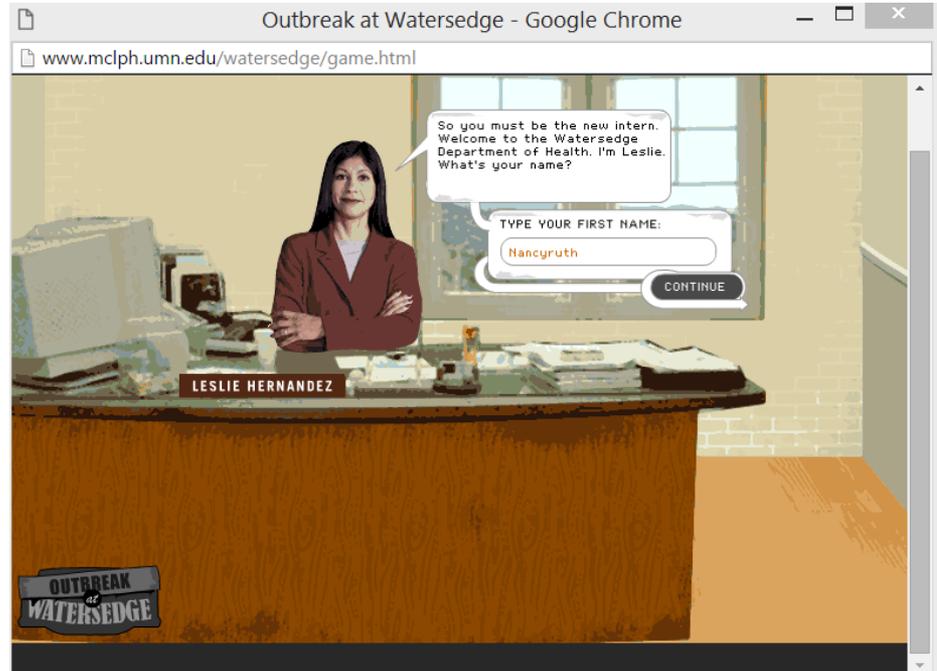


Types of Virtual Simulations

- Virtual Simulation
- Virtual Reality
- Virtual Worlds
- Virtual Patients

Virtual Simulation

- Nursing practice scenario
- Safe, realistic



Virtual Reality

- Most realistic
- Expensive
- Requires multimedia equipment

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UW-Madison Team Probes Home Health Environments with Virtual Reality



In health care environments, nurses and doctors can closely monitor patients' medical regimen and schedules. But when a patient leaves the clinic or hospital to go home, the responsibility for care transitions to families and patients. The result: Regimens might not be adhered to as closely.

To gain insight into the factors that influence a person's ability to manage a health condition at home, a diverse group of researchers at the Wisconsin Institute for Discovery (WID), UW-Madison School of Nursing, School of Human Ecology, College of Engineering, and School of Medicine and Public Health has developed a new approach that combines data from real household environments, home health care expertise and virtual reality technology.

After receiving a \$2.5 million grant from the Agency for Healthcare Research & Quality, the group will begin data collection by capturing 360-degree, detailed images of homes of people living with diabetes - afterward translating the images into 3-D with an immersive, virtual reality CAVE (Cave Automatic Virtual Environment) at WID's [Living Environments Laboratory \(LEL\)](#) (see photo).

Virtual Worlds

- Online environment
- Avatars
- Multi-user virtual environments (MUVEs)



Virtual Medical World Has Real-Life Value

Graduate Students Learn to Save Lives with Gaming Simulation Technology

Jan. 14, 2011

Researchers from UT Dallas and the UT Arlington College of Nursing have created a virtual environment where graduate students can train online for the medical challenges that await them in the real world.

NursingAP.com is designed to help Advanced Practice Nursing students hone critical skills interactively, on their own schedules via distance learning.

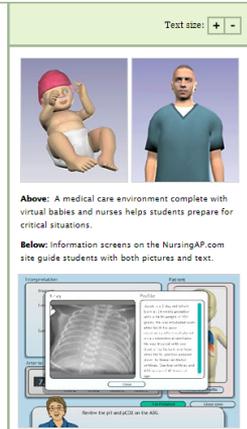


Dr. Marjorie Zielke

"Medical simulation offers the potential to be critical technology for many reasons," says Dr. Marjorie Zielke, assistant professor of Arts and Technology (ATEC) at UT Dallas and principal investigator for the site's technology design. "We can train nurses more quickly, leverage doctoral-level faculty, train on rare but potentially fatal conditions and ultimately save lives. It allows nursing students from remote locations to practice in a controlled, reduced-risk, cost-effective environment."

Researchers believe this emerging field of virtual gaming medical simulation can improve the accuracy and speed of cognitive and behavioral skills, better preparing nursing students for real-life situations.

"We have seen some promising results from a randomized study we conducted in the spring of this year," said Dr. Judy LeFlore, associate professor of nursing at UT Arlington and principal investigator for the project. "Game students (in an experimental group) were more likely to select the right intervention and do it in a



Above: A medical care environment complete with virtual babies and nurses helps students prepare for critical situations.

Below: Information screens on the NursingAP.com site guide students with both pictures and text.

- Photo from: University of Texas at Dallas, http://www.utdallas.edu/news/2011/1/14-7831_Virtual-Medical-World-Has-Real-Life-Value_article.html

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Virtual Patients

- Simulated patients/families
- Case Study online
 - Video
 - Images
 - Audio

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Benefits of Virtual Simulations

- Engage learners
- Safe
- May be used for clinical experience or assessment
- Stimulate higher order thinking
- Convenient
- “organized and easy to do when it fits in my schedule” (Leibold & Schwarz, 2015)

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Limitations of Virtual Simulations

- Require time to find or create
- Expense
- Software
- Equipment and Technical Know-how



Evidence for Virtual Simulations

- Conflict Management for Nurses
Virtual Simulation (Leibold & Schwarz, 2015)



Evidence for Virtual Simulations

- Qualitative data-*Application*
- “been using conflict management at work now since having this and it works”
- “The simulations were similar to dealings where I work that were not fixed. Now I can use conflict management at work”
- (Leibold & Schwarz, 2015).



Evidence for Virtual Simulations

- Virtual Simulation
 - Staff development & competency checks
 - Kalisch, Aebersold, McLaughlin, Tschannen, and Lane (2015)
 - Landry, Oberleitner, Landry, and Borazjani (2006)



Evidence for Virtual Reality

- Virtual Reality
 - Computerized male urethral catheterization simulator
 - Jöud, Sandholm, Alseby, Petersson, and Nilsson (2010)



Evidence for Virtual Reality

- Virtual Reality
 - Use of an emergency crash cart
 - Fagan, Kilmon, and Pandey (2012)



Evidence for Virtual Worlds

- Virtual Worlds
 - MUVES (multi-user virtual environment)
 - (Peck & Miller, 2010)
 - The Neighborhood
 - (Giddens, Hrabe, Carlson-Sabelli, Fogg, & North, 2012)



Evidence for Virtual Patients

- Virtual Patients
 - Simulated case studies in oncology nursing (Moule, Pollard, Armoogum, & Messer, 2015)
 - Competency testing for nurse practitioner students (Sanders et al., 2008)
 - Improved content knowledge (Heinrich, Pennington, & Kuiper, 2012)

A Recipe for Engaging Learners: “How to” Get Started using Virtual Simulation in your Teaching Practice©

Author: Dr. Nancyruth Leibold, EdD, RN, PHN, CNE

This recipe focuses on items the nurse educator should consider when getting Started using and/or authoring Virtual Simulations in teaching practice.

INGREDIENTS

- 1 or > learning outcomes
- 1 or > Learning Theory(ies)
- 1 cup time
- 1 or > software program(s)
- 1 or > computer
- 1 cup commitment
- 1 helpful IT Department
- 1 cup patience
- 1 script for authored simulation



clip art attribution: Office.com clip art

DIRECTIONS



1. Mix the learning outcomes and learning theory(ies) with the format of the course and the needs of the learners.
2. Slowly blend in the remaining ingredients until desired effect. Use the following instructions to guide your project.
3. Consider the course format (synchronous online, asynchronous online, hybrid, or face to face to be sure the format matches the teaching strategy: virtual simulations.



DIRECTIONS

4. Consider the type of virtual simulation you will use: case study simulation, video case study simulation, 2D simulation, 3D simulation
5. Identify faculty development resources available when using software, such as video tutorials for easy reference.
6. Identify human resources in your facility Instructional Technology Department.

DIRECTIONS

7. Analyze various software programs for use. Is there one your school already has? Will the Instructional Technology Department provide support for any certain programs?



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DIRECTIONS

8. Selection of software for Virtual Simulation should match learner needs. Consider hardware needs of learners and course format when making decisions about software.
9. There are some already created Virtual Simulations on the market, or you could create your own Virtual Simulation using software. Creating your own Virtual Simulation programs is very time consuming. Inquire with the Instructional Technology Department about collaborating on the development of a simulation. For example, if you author the simulation, will they set it up in the software program?



Instructions Example:

Appendix G

Franklin County Disaster Virtual Simulation Instructions

Disaster in Franklin County: A Public Health Virtual Simulation

Go to University of Minnesota at <http://www.sph.umn.edu/academics/ce/online/> and you will see a list of online learning opportunities in public health. Scroll down and click on the one titled, *Disaster in Franklin County: A Public Health Virtual Simulation*. Take the course for CE credit. If you do not already have a U of M account, you will need to open an account, but you should have one from an earlier activity at U of M in this course. Please remember your username and password for future use in this and other courses! Plan one hour of time for this learning activity. When you complete the learning activity, you will receive a certificate. Save the certificate as a PDF or you can do a screen capture of the certificate or phone picture and submit the file to your courseroom dropbox by Sunday at 11:59 pm for grade credit.

Implications for Nursing Practice

- Resources
 - Use existing virtual simulations
 - Create virtual simulations

Steep Learning Curve



Image: Creative commons, attribution, non-commercial share alike from <http://johnrogers960.blogspot.com/2013/02/the-abc-of-managing-expectations-always.html>

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Implications for Nursing Practice

- To get started, we have some “favorite picks”
- In this webinar we will share some non-commercial, free virtual simulations

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Available Virtual Simulations

- Disaster in Franklin County: A Public Health Simulation
- http://ustar.ahc.umn.edu/cptheo/catalog/main.cfm?event_id=4516&activity_id=7594



Available Virtual Simulations

- Watersedge
- <http://www.mclph.umn.edu/watersedge/>

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Available Virtual Simulations

- Pathophysiology Virtual Patient
- The Virtual Autopsy
- <http://www.le.ac.uk/pathology/teaching/va/titlpag1.html>



Available Virtual Simulations

- Health Assessment
- Virtual Patients
 - Images and descriptions of exams
 - <http://www.lumen.luc.edu/lumen/MedEd/MEDICINE/PULMONAR/PD/Contents.htm>

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Available Virtual Patients

- Cardiology Virtual Lab
- Virtual Patients
- <http://www.hhmi.org/biointeractive/cardiology-virtual-lab>

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Available Virtual Simulations

- Pediatrics
 - Pediatric Trauma Course
 - <http://emed.unm.edu/pem/programs/pediatric-trauma-course/course-directory.html>



Available Virtual Simulations

- Pediatrics and School Nurse Virtual Simulations
- <http://emed.unm.edu/pem/programs/school-nurse-program/vsnems-course-directory/index.html>

Virtual Excursions



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SYLLABUS SELECTION: INNOVATIVE LEARNING ACTIVITY **FREE**

Virtual Excursion to the Legislature

Robbie South, D.H.Ed., MSN, RN, CNE

Journal of Nursing Education

January 2015 - Volume 54 · Issue 1: 60

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DOI: 10.3928/01484834-20150109-11

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Article References

Nurses must serve as advocates for individual patients, families, and populations in their communities. *Advocacy* is "the act or process of supporting a cause or proposal" (Merriam-Webster, 2014). Tomajan (2012) identified problem solving, communication, influence, and collaboration as necessary advocacy skills for nurses. An initial step in the process of effective advocacy is learning about proposed legislation to voice an informed opinion to legislative representatives. Nursing students in their last semester practiced these skills in the Community Health Nursing class assignment, Virtual Excursion to the Legislature.

The Virtual Excursion to the Legislature assignment was designed to provide nursing students with the opportunity to

Virtual Excursions--WebQuests

Nursing WebQuest: Patients and Families with Chronic Illness

- Introduction
- Task
- Process
- Evaluation
- Conclusion
- Credits
- Teacher Page

by Nancyruth Leibold, EdD, RN, PHN, School of Nursing, Minnesota State University

Chronic illness is an important concept for nurses to understand. Understanding the meaning, trajectory, family influence, and impact that a chronic illness has on a family is important for the nurse who helps patients and families dealing with a chronic illness.

Introduction



wheat from stockvault.net with permission



(Voki Script: Welcome to this Web Quest about Familiee focused care for Chronic Illness. My name is Doctor Nancyruth Leibold in Saint Paul Minnesota, and I am the guide and author for this Web Quest. In a Web Quest, you explore a concept at your own pace. Click on the menu at your left in order to work through this Quest! I suggest you use the right click and open new tab feature when exploring the web resources. Happy Questing!)

This Nursing WebQuest focuses on chronic illness and the practice of family focused nursing care. Developing an understanding of what chronic illness means and how it impacts patients and families is a critical skill for nurses. The topic of patients and families with chronic illness is explored in this Quest.



Conclusion

- Rewarding
- Effective
- Faculty Development
- Share among Colleagues
- Well received by learners!
- Promotes knowledge acquisition and higher order thinking skills

Questions





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