

VIRTUAL SIMULATION IN HEALTHCARE EDUCATION

AMERITECH COLLEGE: DRAPER UTAH

Diann Martin, Phd,RN

Current Challenges Faced in Health Care Professional Education

- * Increase demand for staff
- * Decreasing supply of faculty in workforce
- * Reduced availability of sites for clinical placements
- * Increased expectations of regulators and accrediting bodies
- * Growing demand for expanding content and curriculum



87327001

Fuse

Teaching Soft Skills in Simulation

- How do you teach



95445588
iStockphoto



100952281
Hemera

What the Literature Tells Us Simulation

- * Learners retain more information
- * Response to live situations improves
- * Improves psychomotor skills
- * Debriefing is an essential element
- * Seen as the future for medical and
Nursing education



119418149
iStockphoto

Forms of Simulated Learning

- * **High Fidelity-** Interactive robotics with programmed cases
- * **Medium Fidelity-** Mannequins with attachments and clinical needs (wounds, ostomy products, IVs)
- * **Low Fidelity-** Single item simulation, IV arms, pumps
- * **Role Playing/Models-** Use of live actors
- * **Virtual Simulation-** *Interactive computerized case studies*



d771007

Digital Vision

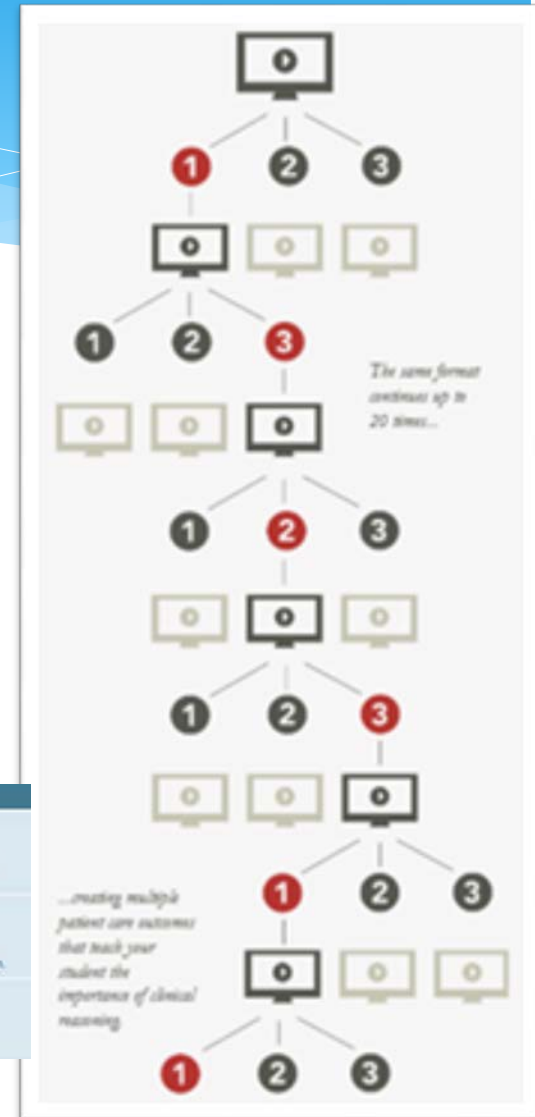


Features of Virtual Simulation

- * Video or animated clinical situation
- * Assessment and interaction embedded
- * Reporting and tracking
- * Student controlled
- * Branching logic
- * Multiple characters
- * Multiple settings



Character Overview	
	<p>Grandson Age: 5 Religion: Catholic Background Info: Very concerned about Grandpa's health and has been struggling at school.</p>
	<p>Grandpa Age: 71 Religion: Catholic Background Info: Joe suffers from diabetes and is depressed about his current health condition.</p>
	<p>Daughter Age: 40 Religion: Catholic Background Info: Anne does not trust medical professionals.</p>



Example Content for Virtual Simulation

Clinical Cases

Maternal Child

Mental Health

Medical Surgical

Trauma

Pediatrics

Soft Skills

Communication

Leadership

Wellness and Self Care

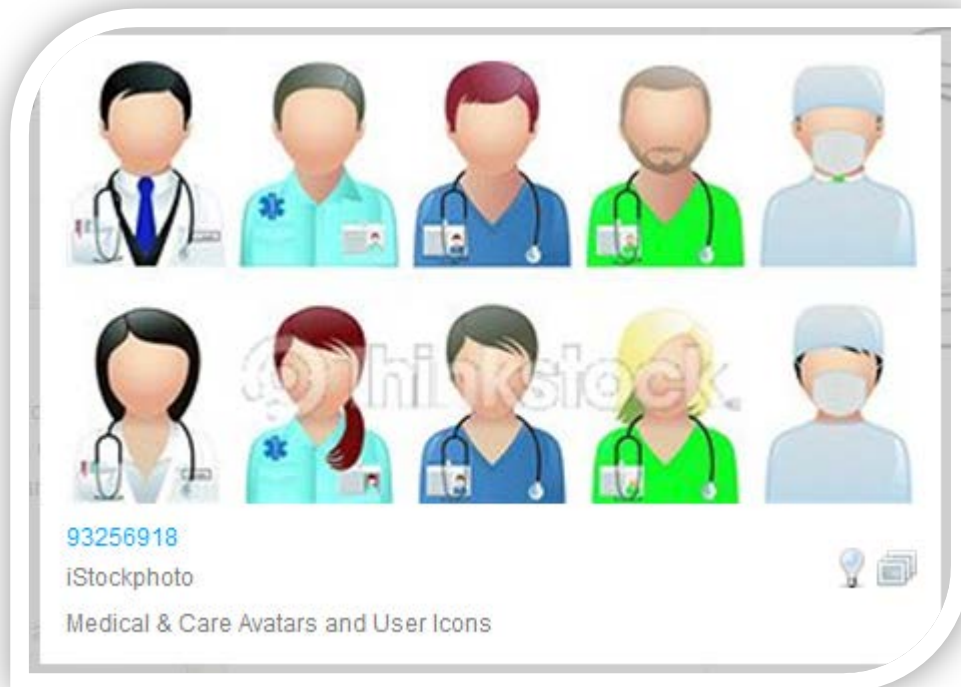
Why Adopt Virtual Simulation in the Classroom ?

- * Consistency
- * Standardized assessments
- * Effective use of faculty time
- * Repeatability
- * No clinical risk
- * Less up-front investment
- * Technical skills not required

TYPES OF SIMULATION

- * Second Life
- * Priority Setting

Maslow's Hierarchy of Needs



Virtual Simulation Demonstration

- * Clinical Reasoning Scenarios
- * Soft Skills Training in Nursing
- * Knowing Learning Styles

Recommendations for Use of Virtual Simulation



- * Infrequent or unreliable clinical experiences

108688371

iStockphoto



- * Clinical that requires precise sequence of actions

- * Experiences with interaction and collaboration

- * When debriefing and repeated review would:

- * Improve retention of knowledge

- * Support reflective learning



200368976-001

Digital Vision

What Simulation Offers

- * Experience failure or in a safe environment
- * Manage risk in preparation for actual clinical practice
- * How much simulation can be used to replace clinical experience?

Simulated Learning vs. Traditional Classroom Learning

* Classroom

- * Conceptual in nature
- * Good for conveying fact based information
- * Labor and time intensive
- * Experience is a function of the faculty member
- * Minimal student engagement in process in some formats

* Simulation

- * Hands-on experience
- * Appeals to various forms of learning style
- * Repeatable
- * Learner actively engaged
- * Requires clinical reasoning and application of knowledge and skill

Benefits of Virtual Simulation

- * May be used to substitute or make up clinical time in nursing and other disciplines
- * Supports timely and prudent use of internal resources
- * Facilitates student confidence and engages student in experience
- * Supports development of clinical judgment and clinical reasoning
- * Promotes use of state of the art instructional strategies
- * Provides administrators with measure of student achievement

Next Steps for Virtual Simulation

- * NCSBN Study of Impact on Clinical Outcomes based on use of Virtual Simulation
- * State Boards of Various Disciplines across the US are considering regulations
- * Active Development and Entry to Market of Products
- * Increase Formality of Training, Credentialing and Faculty Development in Healthcare Professional Programs
- * Potential for integration into NCLEX testing

REFERENCES

- * Brackenreg, J. (2004). Issues in reflection and debriefing: how nurse educators structure experiential activities. *Nurse Education in Practice* 4(4),264-70.
- * Cantrell, M. A. (2008). The Importance of Debriefing in Clinical Simulations. *Clinical Simulation in Nursing* 4(2), e19-e23.
- * Decker, S., Sportsman, S., Puetz, L., & Billings, L. (2008). The evolution of simulation and its contribution to competency. *The Journal of Continuing Education in Nursing*, 39 (2), 74-80.
- * Harder, N. (2010). Use of simulation in teaching and learning in health sciences: a systematic review. *Journal of Nursing Education* , 49 (1), 23-28.
- * Potter, P. Wolf, L., Boxerman, S., Grayson, D., Sledge, J. , Wolf, L., Dunagan, C. & Evanoff, B. (2005). *JOAN* (35),7/8, 327-335. 2005, Lippincott Williams & Wilkins, Inc.
- * Rothgeb, M. K. (2008). Creating a nursing simulation laboratory: a literature review. *Journal of Nursing Education* , 47 (11), 489-494.
- * Shepherd, C. K., McCunnis, M., Brown, L., & Hair, M. (2010). Investigating the use of simulation as a teaching strategy. *Nursing Standard* , 24 (35), 42-48.
- * Sinclair, B., & Ferguson, K. (2009). Integrating simulated teaching/learning strategies in undergraduate nursing education. *International Journal of Nursing Education Scholarship* , 6 (1.7), 1-11.
- * Waxman, K. T. (2010). The development of evidence-based clinical simulation scenarios: guidelines for nurse educators. *Journal of Nursing Education* , 49 (1).
- *

OTHER SOURCES OF SIMULATION INFORMATION

- * The Society for Simulation in Healthcare:
 - * <http://ssih.org/>
- * The Center for Medical Simulation
 - * <http://www.harvardmedsim.org/>