He’s Alive!: Using Human Patient Simulation in a Physical Assessment Course

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Objectives

• 1. Differentiate the use of simulation from pedagogical and andragogical viewpoints.
• 2. Integrate simulation technology into an undergraduate physical assessment course.
• 3. Describe how to implement a comprehensive simulation experience into a physical assessment course.

Definition of Simulation

• “... artificial replication of sufficient elements of a real-world domain to achieve a stated goal- and typically includes training individuals and teams to deal with the domain, or testing the capacity of personnel to work in the domain” (Gaba, 2004, p. 7).

Simulation Includes

• “... role plays, games and computer programs; it encourages the student to become an active participant, to think more deeply and to become a part of the educational environment” (Conrick, Dunne, & Skinner, 1995, para. 1).

Definition of Human Patient Simulator (HPS)

• Control Logic
• Sequence of events
• Mathematical differential equations
• “... a full-body computerized mannequin that provides real-time physiological and pharmacological measurements programmed to immediately reflect persons of different ages, both genders, with a variety of health conditions” (Nehring, Lashley, & Ellis, 2002, p. 130).

Definition of Fidelity

• Fidelity R/T Student Outcomes
• Fidelity, in regards to simulation: “... refers to how closely it replicates the selected domain and is determined by the number of elements that are replicated as well as the error between each element and the real world” (Gaba, 2004, p. 8).
Simulation

- Education
- Training
- Mastery of concepts and skills
- Integrated patient management
- Performance assessment
- Team training
- Interpersonal and communication skills
- Evaluation

Simulation

- Diverse student population
- Shortage of nursing faculty
- Limited clinical sites
- Patient safety: forgiving learning environment
- Employers seeking safe, confident and competent graduate nurses who can work as team members
- Financial concerns R/T training G. N.s

Simulation

- Static simulation
- Partial task trainers
- Patient simulators
  - Vary in technological complexity

Social Learning Theory
(Bandura, 1977)

- Purpose of education:
  - Model new roles and behaviors
- We learn vicariously by:
  - Observing and Interacting with other
- Role of educator:
  - Guide and facilitate

Education Theories

- Develop teaching philosophy
- Creative teaching strategies
- Art and Science of nursing
- Be true facilitators of knowledge

Constructivist

- Purpose of education:
  - Construct knowledge though meaningful experience
- We learn by:
  - Construction of meaning through experiences with others
- Role of educator:
  - Thoughtful curricular goals to facilitate self directed learning to construct knowledge
  - Paradigm shift
**Experiential Learning**

(Dunn, 2004, p. 17)

- Active Experimentation (what is done differently)
- Reflective Observation (what happened)
- Abstract Conceptualization (what was learned, future implications)
- Concrete Experience (an event)
- Planning for Implementation (what will be done differently)

**Pedagogy**

- Pedagogy is the art and science of educating children
- Embodies teacher-focused education
- Teacher directs learning
- Teacher is responsible for making decisions about what will be learned, how it will be learned, and when it will be learned (Knowles, 1973)

**Pedagogy**

(Knowles, 1973)

- Our academic system grown in reverse order
- Teachers and subjects constitute the starting point
- Learners are secondary
- Learner is dependent
- Learner's experience of little worth

**Andragogy**

- We learn what we do....
- Experience is the adult learner’s living textbook (Knowles, 1973)

**Key Assumptions of Andragogy**

- As a person matures:
  - Motivation to learn becomes internal based on individual needs and interests
  - Life-centered Orientation to learning becomes of immediate application of knowledge leading to focus of learning is more problem-centered and related to life situations

**Key Assumptions of Andragogy**

- Experience is accumulated that becomes an increasing resource for learning through analysis of these experiences
- Self-concept moves from one of being a dependent personality toward one of being a self-directed human being to be engaged in mutual inquiry
Key Assumptions of Andragogy

- Individual differences based on age, cultural and ethnic considerations, gender, learning styles, time, place and pace of learning must be considered to be effective (Knowles, 1973)

IDEAL....

- The Learner Feels....
  - Safe and supported
  - Uniqueness is honored
  - Life achievements are acknowledged and respected
  - Intellectual freedom in encouraged
  - Responsible for their own learning

IDEAL....

- The Learner Feels....
  - Intellectually challenged
  - Involvement in learning is active not passive
  - Student receives regular feedback
  - Faculty makes changes based on student input

Today’s Challenge

- How do we meet the learning needs of our present student population ranging from
  - Early Adulthood (18-30),
  - Middle Adulthood (30-65) and
  - Later Adulthood ?

- How do we create life-long learners?

Simulation

- Ties in Andragogical model and active learning principles to:
  - Meet the needs of today’s learner
  - RN-BSN students learning Holistic Health Assessment

Why Use Simulation?

- Skills Acquisition (Nehring, Lashley, & Ellis, 2002)
- Critical Thinking (Hawke, 2002; Nehring et al., 2002; Morton, 1997; Rauen, 2001)
- Competency Evaluation (Nehring et al., 2002)
- Patient Safety!!! (Cooper, 2004, Morton, 1997)
Integration Into Undergraduate Curriculum at UTA

- Started Fall 2004, in Assessment, Foundations, and Clinical Make-ups
- Goal is to have all clinical courses incorporate 4-hour blocks
- Spring 2005 added:
  - Medical-Surgical
  - Psychiatric
  - OB
  - Pediatrics
- Critical Care to come

Assessment Course-BSN Development

- Early adopter
- Listening to sounds
- Scenarios
  - Topics
  - Supply list
  - Lab directions
  - Stations and simulation directions

Later Added

- Learning objectives
- Evaluation (student satisfaction)
- Debriefing

Topics

- Vital Signs
- Skin, Hair, & Nails
- Lungs
- Heart
- Abdomen

Simulation Process

- Groups of 4- each with specific job
  - Nurse
  - Client
  - Recorder
  - Group Leader
- Skills
  - Assessment
  - Documentation
  - Communication
  - Critical Thinking

RN-BSN Student

- True Adult Learner
  - Self-concept
  - Experience
  - Readiness
  - Orientation
  - Motivation (Knowles, 1971)
Evaluation of Simulation

- Student evaluation
  - Post-simulation satisfaction
  - Quiz
  - Midterm- check off on BP (training arm)
  - Class grades
  - Looking at for practicum

Competency Evaluation

- Assessment Example
  - Objective measurement
    - BP on task trainer arms (midterm)
    - Quiz on heart sounds, lung sounds, respirations and pulses

Increased Test Grades?

Class Example

Practicum

- Looking at for Fall
- Assess manikin and chart findings
- More objective than traditional

References

- See attached handout for references.

Faculty Development

- Training/Workshops
- Gantt chart
- Taskforce
- Support
- Newsletter
Simulation Website

- [http://www.geocities.com/wave2menow@sbcglobal.net/webpage141.html](http://www.geocities.com/wave2menow@sbcglobal.net/webpage141.html)