Simulation: Accounts for Perceptual and Actual Experiences
Regional SUN
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Simulation in Education and Practice
Student, Faculty, Clinician, Patient
At the center of this universe

User Experience Design making the difference

1. The Why of Simulation Now
2. Prism of User Experience Design
3. Strengthening use and integration
4. Challenges and Responsibilities
Simulation as a technique

Replace or amplify real experiences with guided experiences that evoke or replicate substantial aspects of the real world in a fully interactive manner.

Why is it important now?

- Changing student populations
- New innovations, and the WWW
- Shorter stays and more home settings
- Inconsistent clinical experiences
- Faculty and preceptor shortages
- Increased patient acuities
- Limited clinical experiences

What is involved?
The Perfect...Storm?
No, the Perfect Rainbow of Opportunity for Evidence in action

Our connection is more important than ever

Simulation Spectrum
• Task Trainers
• Mannequins
• Basic Simulators
• High-fidelity Simulators
• Computer Simulation
• Standardized Patients
• Virtual Reality
• Blended Simulation
Simulation adds flexibility and reaches all learning styles

Lab → CAI → Simulations → Distance clinical

- Initial learning: IN clinical simulation lab, classroom, or other setting
- Reinforcement: Practice problems in computer lab, at home, or anywhere online
- Live practice: Problem-solving in virtual or standardized clinical setting
- Live practice: In distant location with virtual supervision by faculty

Providing alternative and additional assessment & evaluation options

As it relates to:
- the psychomotor skills
- critical thinking
- Clinical experiences
- individual learning approaches
- variations among clinical sites
- variations in clinical experiences between sites

Culture of Inclusion

Perceptual experience" of the product attracts users initially, but its "actual experience" is mainly responsible for retaining them
Present - Solutions look like?

- The solutions may combine
  - Verbal or audiovisual media
  - They may be experienced with or without human mediation
  - They may take the form of lessons, courses, or systems

What they do is facilitate "learning in a wide variety of conditions and for a wide range of learners, efficiently, effectively and humanly" (Molenda 2/2006; Fardanesh 2/2006)

Evidence in Action

Each Idea you have today must reflect upon all six constants

http://www.hceye.org/UsabilityInsights/?p=7

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User Experience Design: Influencing Factors

1. aims and purposes of the simulation activity;
2. unit of participation;
3. experience level of participants;
4. health care domain;
5. professional discipline of participants;
6. type of knowledge, skill, attitudes, or behaviors addressed;
7. the simulated patient's age;
8. technology applicable or required;
9. site of simulation;
10. extent of direct participation;
11. and method of feedback used.

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Strengthen through Inclusion: the spectrum of user experience

Educators

Practitioners

Simulation

Need identified

Solution

Produces High quality user experiences moves past ease and efficiency of use

Getting to the end result we want

• Using simulation to improve safety will require full integration of its applications into the routine structures and practices of health care

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Costs and Benefits

- Difficult to determine - Many options with little agreement,
- The most challenging applications, where long term use may be required are harder to identify cost and benefit today.

Driving Simulation into Future

Various driving forces and implementation mechanisms
- consumers
- professional societies,
- professional practice laws/rules
- liability insurers,
- health care payers,

What is our Role

- Commitment and ingenuity of the health care simulation networks and communities
They see change and use differently

(Surry, 1997)

<table>
<thead>
<tr>
<th>Developer (Determinist)</th>
<th>Systemic Change (Macro)</th>
<th>Product Utilization (Micro)</th>
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<tbody>
<tr>
<td></td>
<td>Focus on structure and establishment of effective organization framework</td>
<td>Focus on process of designing, developing, &amp; evaluating effective instructional products</td>
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<tr>
<td>Adopter (Instrumentalist)</td>
<td>Focus on social, political, political and professional environment in specific organization</td>
<td>Focus on the needs and opinions of potential adopters and characteristics of the adoption site</td>
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Adopter (Instrumentalist) based theory opens doors and is inclusive

- Systemic change comes through understanding the social, political, and interpersonal aspects of the organization.
- Technical superiority of a solution alone is seen as least influencing the decision to adopt or reject.
- It defies top-down approach

Present - Types of technology are we using in Healthcare

- CMS
- PDA
- A/V
- Simulation
- CAI
- Computers
- CAI
Instructional Technologies - multi sensory immersion

- Smell, touch, hearing, seeing, and taste from instructional technology in nursing education.

Print to digital and audio.

Instructional Technologies - multi sensory immersion

- Smell, touch, hearing, seeing, and taste from instructional technology in nursing education.

Instructional Technologies - multi sensory immersion

- Smell, touch, hearing, seeing, and taste from instructional technology in nursing education.
Internet Wireless technology send signals directly into the body, augmenting the senses.

http://www.crt.net.au/etopics/sens.htm

Instructional Technologies- multi sensory immersion

- Smell, touch, hearing, seeing, and taste from instructional technology in nursing education

Internet Wireless technology send signals directly into the body, augmenting the senses.

Instructional Technologies- multi sensory immersion

The salinity in our bodies act as cable connection to integrated voice mail message system.

Instructional Technologies- multi sensory immersion

Smell, touch, hearing, seeing, and taste from instructional technology in nursing education

Instructional Technologies- multi sensory immersion

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Inter-operability

- The ability of systems and content to work seamlessly together. Re-usable learning objects role.
  - The ability of content, a subsystem or system to seamlessly work with other systems, subsystems or content using agreed specifications / standards.

http://www.cetis.ac.uk/encyclopedia/entries/2001126150120
Attention to Inter-operability opens new solutions - simulation

- Use alone or in combination including physical or virtual world
- Task Trainers
- Mannequins
- Basic Simulators
- High-fidelity Simulators
- Computer Simulation
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Inter-operability opens new computerized solutions -

- Bedside computers
- Documentation
- Data retrieval
- Education
- PDA
- Electronic point of care
- Bar-coding

Simulation example
Challenges and Responsibilities

Past:
Physical land & time

Present:
Physical & virtual user experience design simulations

Future:

Student, Faculty, Clinician, Patient
At the center of this universe

Responsibilities include

• Infrastructure to support over time,
• Education of Clinicians, faculty, staff & students
• Support of adoption process through integration
  • Organization support and reward for using IT approach through evaluation

Responsibilities

1. Be the Adopter [Instrumentalism] believe that technology is under human control and use can lead to positive or negative results.
2. Keep looking and learning not only local but globally and across disciplines
3. Listen to the learner carefully and do not rule out the seemingly impossible
4. Believe one size does not fit all and $ is not equal to superior value in IT
References and Resources

Council of Educational Facility Planners International – www.cefpi.org
Abramson, P. and Burnap, E. , Space planning for Institutions of Higher Education
Society for Simulation in Healthcare http://www.ssh.org
Association of Standardized Patient Educators http://www.aspeducators.org/index.htm
International Nursing Association for Clinical Simulation and Learning http://www.inacsl.org

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U-Tube and WWW Simulation Now?

- http://www.youtube.com/watch?v=pF1yPzBn6o8
- http://www.youtube.com/watch?v=IT0fPvL59cA