

**Simulation:
Accounts for
Perceptual and
Actual
Experiences**

Regional SUN
Austin Texas May 2009

Simulation in Education and Practice

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

Present **Future**

The point of care/learning

Challenges Responsibilities

User Experience Design

What Why

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**

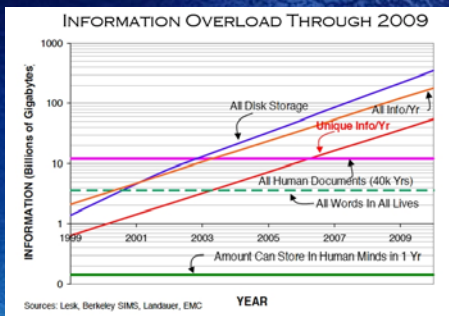
Simulation as a technique

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 ?

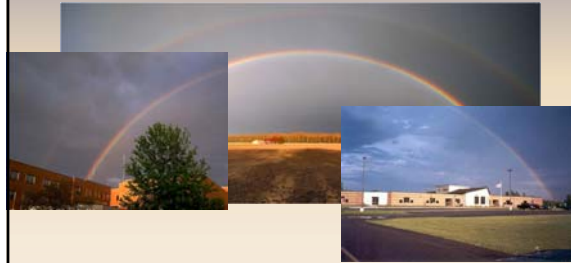


The Perfect...Storm?

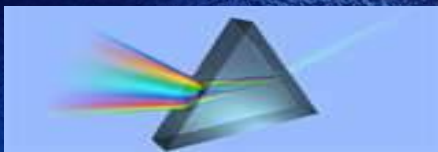
No, the Perfect Rainbow of Opportunity for Evidence in action



Our connection is more important than ever



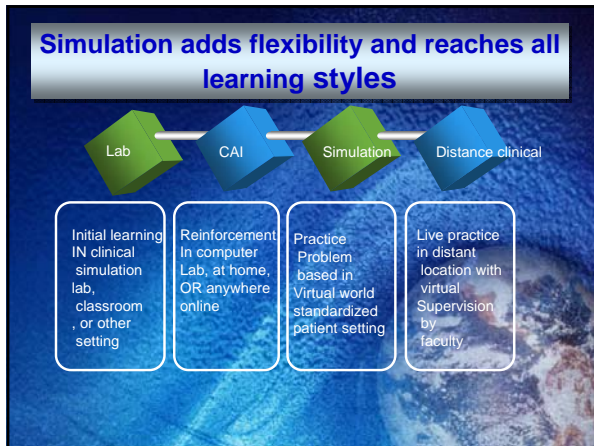
Simulation Spectrum



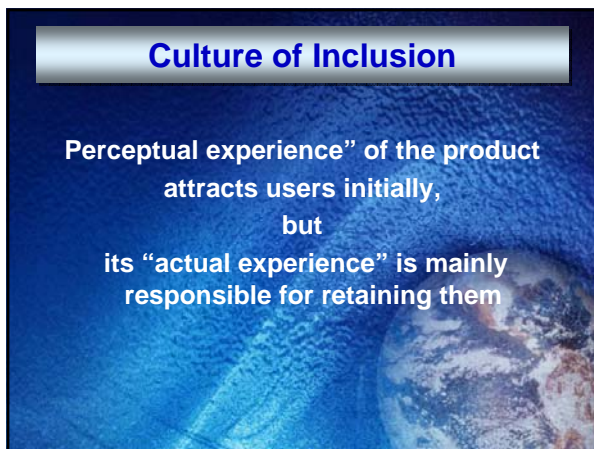
- Task Trainers
- Mannequins
- Basic Simulators

- Virtual Reality
- Blended Simulation

- High-fidelity Simulators
- Computer Simulation
- Standardized Patients







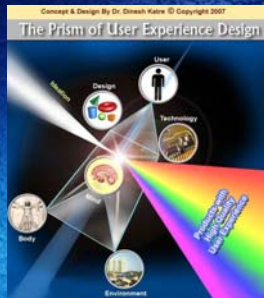
Present- Solutions look like ?

- 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)

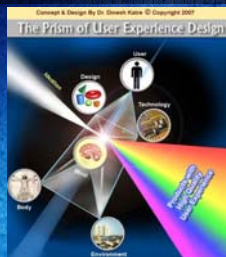
Evidence in Action



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

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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



Design and Development



Simulation application dimensions in healthcare

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

Professor David M Gaba

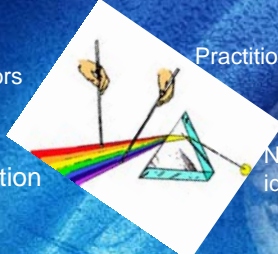
Strengthen through Inclusion: the spectrum of user experience

Educators

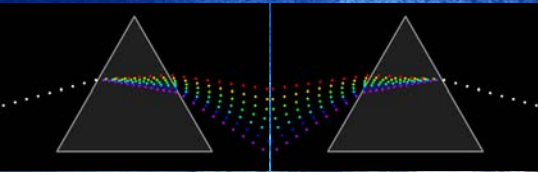
Practitioners

Simulation
Solution

Need
identified



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

Professor David M Gaba

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)	Systemic Change (Macro)	Product Utilization (Micro)
Developer (Determinist)	Focus on structure and establishment of effective organization framework	Focus on process of designing, developing, & evaluating effective instructional products
Adopter (Instrumentalist)	Focus on social, political, political and professional environment in specific organization	Focus on the needs and opinions of potential adopters and characteristics of the adoption site

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



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



Instructional Technologies- multi sensory immersion

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Print to digital and audio



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

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



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/20011126153126>

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
Standardized Patients
Virtual reality
Blended Simulation

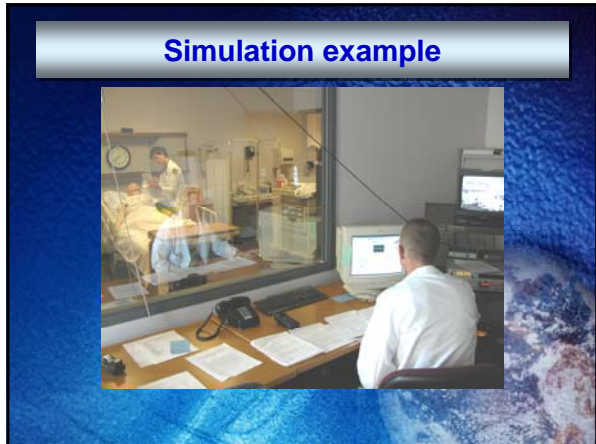


Inter-operability opens new computerized solutions-

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

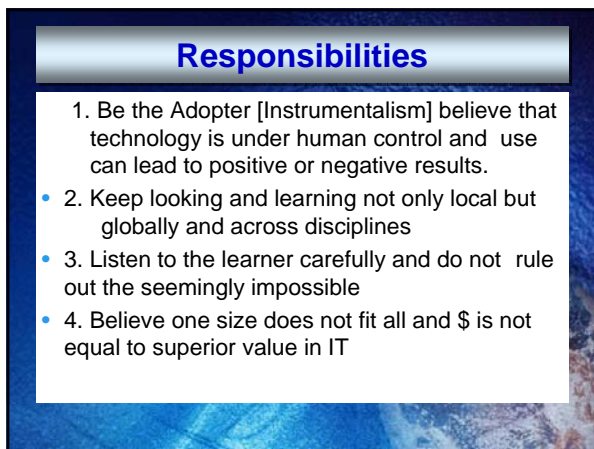


Simulation example









Double Rainbow



Quadruple Rainbow







References and Resources

Council of Educational Facility Planners International – www.cefpi.org
 Abramson, P. and Burnap, E. .Space planning for Institutions of Higher Education
 Jefferies, P (2007), Simulation in Nursing Education: From Conceptualization to Evaluation – <http://www.nln.org/publications/Simulation/index.htm>
 Johnson ,C.,and Lomas, C. (July/August,2005). DESIGN OF THE LEARNING SPACE: LEARNING AND DESIGN PRINCIPLES *EDUCAUSE Review*, vol. 40, no. 4 : 16–28.
 Society for Simulation in Healthcare <http://www.ssih.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=vd7yvHL0mo8>
- <http://www.youtube.com/watch?v=DqB35fBq-bA>