Student Learning in Simulation:
Does Instructor Engagement in Design Make a Difference?

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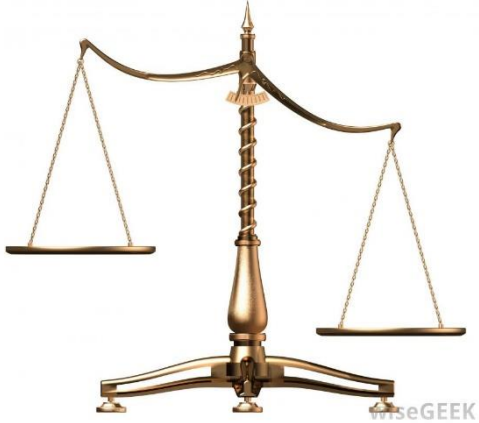
Objectives

- Understand factors that contribute to effective learning in simulation experiences
  - Standards of Best Practice for Simulation Design created by INACSL
- Compare and contrast the usefulness of purchased simulation scenarios and instructor written scenarios
- Discuss factors identified by students which make learning in simulation less stressful
- Identify the roles of the educator when designing simulation experiences

Simulation: Why Use It?



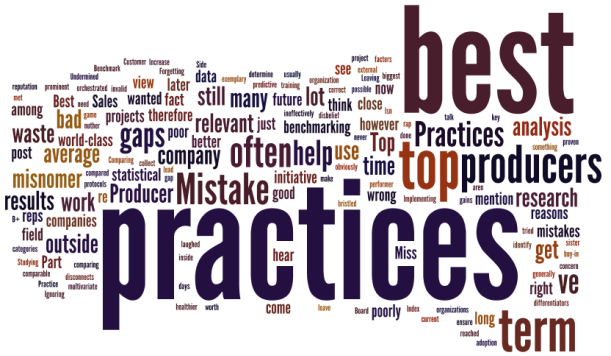
Advantages

- The opportunity to 'think' and 'do' at the same time (Bisholt, 2012)
- No limit on scope of practice
- Simulation actively engages learners AND facilitators (Auman, 2011)
- Has the opportunity to increase critical thinking scores for learners
- Learning can be interrupted for clarification (Cangliosi, 2008)
- Helps to identify gaps in learner knowledge

Disadvantages

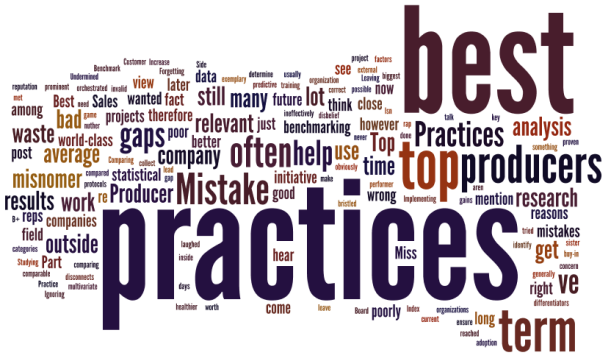
- Participant anxiety: low anxiety is beneficial; high anxiety can be detrimental (Blum, Borglund, & Parcells, 2010)
- Focus for the simulation experience: tasks vs holistic care (Limoges, 2010)
- Finding scenarios to match objectives may be difficult
- Faculty anxiety: Writing scenarios can be time and labor intensive; educators may not be comfortable with the process (Harder, Ross, & Paul, 2013)

International Nursing Association for Clinical Simulation (INACSL) Standards of Best Practice: Simulation (SM)



- Simulation Design
- Outcomes and Objectives
- Facilitation
- Debriefing
- Participant Evaluation
- Professional Integrity
- Simulation-Enhanced Interprofessional Education (Sim-IPE)
- Simulation Glossary

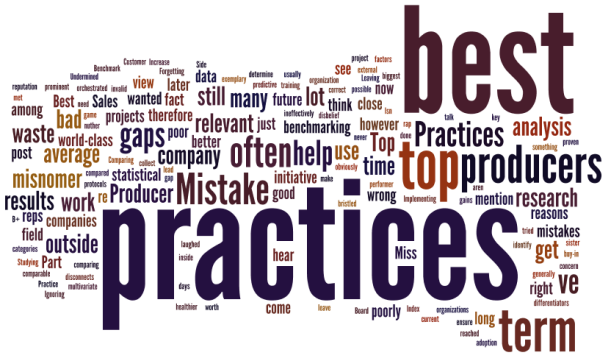
INACSL Standards of Best Practice: Simulation (SM) Simulation Design



- Standard
  - "Simulation based experiences are purposefully designed to meet identified objectives and optimize achievement of expected outcomes"

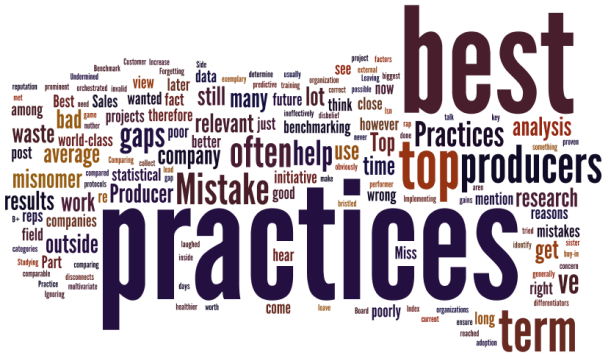
    (INACSL Standards Committee, 2016, pS5)
- Criteria
  - Conduct needs assessment:
    - What needs do simulated patient care experiences meet?
    - Guides the overarching goal or objective for the simulation

INACSL Standards of Best Practice: Simulation (SM)
Simulation Design



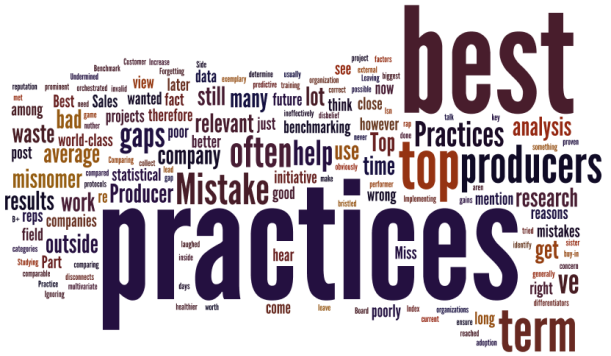
- Criteria (continued)
  - Create **measurable** objectives
    - Objectives need to be **broad** as well as **specific**
      - Broad objectives reflect the purpose of the simulation
      - Specific objectives are related to participant performance
    - **Objectives** should **drive the design** of the simulation
  - **Structure** the simulation **based on purpose, theory, and modality** of the experience
    - Based on needs assessment and broad objectives
    - Need to identify starting point, structured activities, and ending point

INACSL Standards of Best Practice: Simulation (SM) Simulation Design



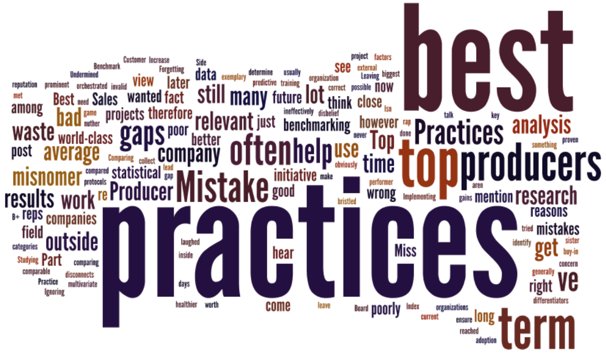
- Criteria (continued)
  - Design scenario to **provide the context** for the experience
    - Provide quality and validity of the content to **support the objectives**
    - **Realistic** starting point
    - **Clinical progression and cues**
    - **Reasonable time frames** to facilitate progression
    - Develop **script for consistency** for repeatability/reliability
    - **Identify critical actions/performance measures**

INACSL Standards of Best Practice: Simulation (SM) Simulation Design



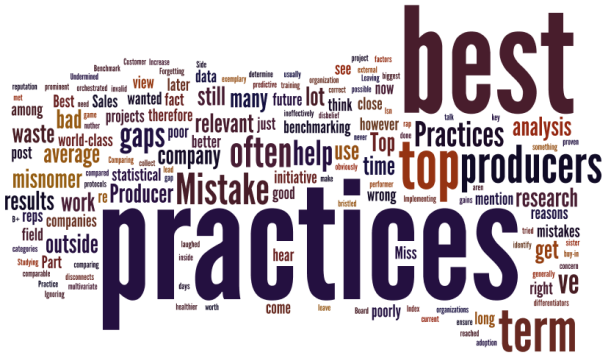
- Criteria (continued)
  - Use **various types of fidelity** for realism
    - Physical – replicating the actual environment
    - Conceptual – all elements of the scenario are realistically related
    - Psychological – realistic conversation, active voice for patient, time pressure, competing priorities
  - Maintain a **facilitative approach**
    - **Participant centered**, driven by **objectives**, **participant knowledge**, and expected **outcomes**
    - The more knowledge/experience the participant has, the less involvement in the actual scenario the facilitator should have

INACSL Standards of Best Practice: Simulation (SM) Simulation Design



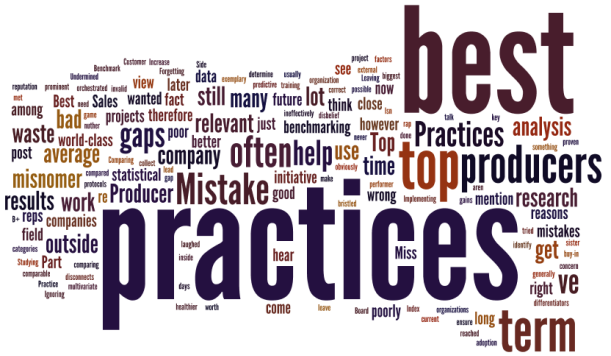
- Criteria (continued)
  - Begin with a pre-brief
    - **Set the stage**; identify expectations
    - Sets grounds rules to **establish integrity, trust, and respect** between participants and facilitators
    - Structured, consistent, and completed immediately before
    - Should incorporate **orientation of participant** to space, equipment, simulator, evaluation, roles, time, objectives, patient situation, and limitations
    - Can be a **written or recorded pre-briefing** plan

INACSL Standards of Best Practice: Simulation (SM) Simulation Design



- Criteria (continued)
  - Follow with **debrief** and/or **feedback**
    - Identify method of debrief during design phase
    - Use **planned debrief** session/feedback to **enrich learning/improve or confirm practice**
  - **Evaluate the experience**: participants, facilitators, the sim experience, facility, and support team (See INACSL Standard on Participant Evaluation)
    - Determine **process for evaluation** in the **design phase**
    - Ensure participants are clear on the method of participant evaluation
    - Use evaluation of other factors (facilitator, experience, facility, and support) for process improvement

INACSL Standards of Best Practice: Simulation (SM)
Simulation Design



- Criteria (continued)
  - Prepare materials to support the participant's ability to meet objectives and achieve outcomes
    - **Preparatory materials** should **address** the **knowledge, skills, attitudes, and behaviors** that will be expected of the participants
    - Preparatory materials are determined once all elements of the simulation have been identified
    - **Design** preparatory activities and resources **for participant success**
    - Allow students **adequate time** to complete preparatory materials **prior to simulation**
  - **Pilot test** before full implementation

That's great! Where do I start?

- **Adopt**: Use a scenario without change
  - *Advantages*: Minimal prep time, scenarios have already been tested
  - *Disadvantages*: May not meet course objectives, facilitator will need to spend time learning scenario to achieve the desired outcome
- **Adapt**: Change an existing scenario to meet the needs of the learning environment
  - *Advantages*: Provides a starting point, freedom to change what doesn't work for the environment, can be further adapted as needed
  - *Disadvantages*: Complicated scenarios take time to learn and adapt
- **Develop**: Design a new scenario
  - *Advantages*: Learning objectives and outcomes are designed for the learning environment; learners are more easily directed
  - *Disadvantages*: Scenarios take time to develop and need to be tested

(Gareau & Gao, 2009)

Sources for Scenarios

- Free scenarios
  - Montgomery College Nursing Simulation Scenario Library
  - University of South Dakota Simulation Scenarios
  - Kansas Board of Nursing Simulation Scenario Library
  - thesimtech scenarios: written for physicians
  - University of Washington: mixture of level of student (undergrad and grad)
- Scenarios for purchase:
  - Laerdal SimStore
- Scenario Development tools
  - Simulation Scenario Development tool: University of Albany
  - Simulation Design Forms: University of Wisconsin Oshkosh

Research: Student Learning in Simulation Based on Instructor Engagement in Design (Laubach, 2015)

Keywordsking.com

- A mixed methods study using quasi-experimental quantitative and descriptive qualitative research was conducted
- Quasi-experimental:
  - Two group comparison between a purchased simulation scenario and faculty written scenario (subjects participated in both purchased and instructor written scenarios)
    - Pretest/posttest analysis using a 10 item multiple choice quiz over basic and advanced pediatric nursing concepts
    - Questions written by the researcher with validity/reliability established using a pilot group
  - Results:
    - **No significant difference** between groups **based on source** of the scenario

Research: Student Learning in Simulation Based on Instructor Engagement in Design (Laubach, 2015)

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- Qualitative Descriptive Results
  - Students were asked *"What did you learn in simulation"*
    - **General nursing concepts**: Assessment, communication, safety, remembering the basics
    - **Simulation specific concepts**: Oxygenation, IV administration, fluid administration, etc.
    - **Personal 'aha' moments**: "I didn't know I knew as much as I did," "I didn't realize I could stay calm"
  - Themes reflected the objectives for the simulation
  - Qualitative statements favored the instructor written scenarios (unsolicited comparisons)
    - **Preference** was based on the *level of preparatory materials available*

Role of the Educator

- Provide a *safe* environment for learning (**Academic safety)**
  - Students are **not ridiculed or embarrassed** and can function without debilitating anxiety
  - Students want to be **challenged** but **not threatened** and want **rich learning opportunities** where the experience empowers the students
  - Students **feel threatened when they do not know what to expect** or feel rushed or intimidated

Role of the Educator

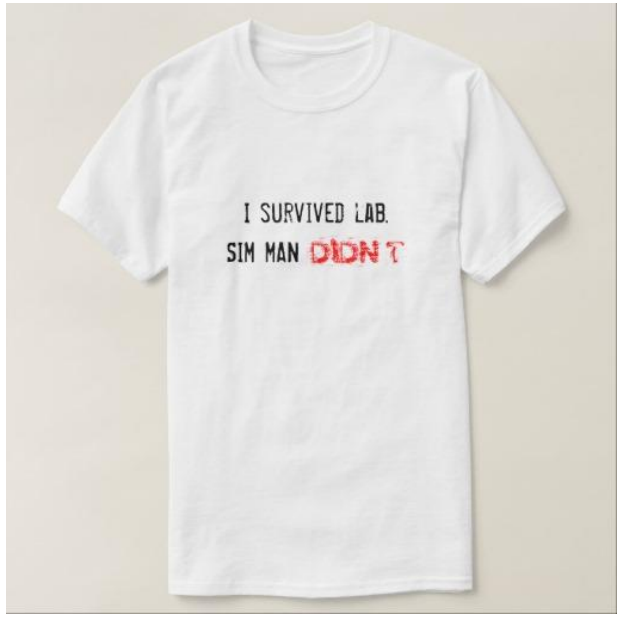
- What students want from instructors (Parsh, 2010)
  - Patience and respect for the student
  - Teaching without giving all of the answers
  - Competence in nursing skills and level of knowledge
  - Interpersonal skills
- What faculty see as important (Cacciamani, et al, 2012)
  - Constructive feedback
  - Nursing competence
  - A sense of humor
  - The ability to let students make independent decisions

The Role of the Educator in Simulation Design

- **Follow the Standards of Best Practice** developed by the International Association for Clinical Simulation and Learning (INACSL)
- **Provide scenarios that meet the objectives** for the experience
  - Adopt, adapt, or develop scenarios depending on time and resources available
- **Provide preparatory information** so learners know what to expect
- **Attend workshops** on scenario writing
  - It will sharpen your own skills
  - It will ensure the scenarios meet the learning objectives
  - It will ensure the scenarios are relevant to the learner

Conclusion

- The benefits of simulation include increasing critical thinking skills and giving learners the opportunity to ‘think’ and ‘do’ at the same time
- Follow the best practice guidelines from INACSL when designing simulation experiences
- Learners learn equally well from scenarios that are adopted, adapted, or developed
- Learners prefer scenarios that have adequate preparatory information
- When choosing to adopt, adapt, or develop, facilitators need to keep in mind student learning outcomes and the level of preparatory information available



Zazzle.com/nursing+student+humor

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Web Links

- http://cms.montgomerycollege.edu/nursingsims
- http://www.usd.edu/health-sciences/nursing/simulation-scenarios
- http://www.ksbn.org/education/Scenario/SimulationScenarioLibrary.htm
- http://thesimtech.com/scenarios/
- https://collaborate.uw.edu/ipe-teaching-resources/simulation-scenario-library/
- http://www.mysimcenter.com/SearchResults.aspx
- http://www.uwosh.edu/nursingsimulation/forms
- http://www.albany.edu/sph/cphce/nyspqcpublic/simulation_scenario_development_tool.pdf

Questions?