

# Simulation Education Evidence-Based Best Practices

Session 1  
Introduction to Simulation  
April 28, 2021

### Presenters

Jane B. Paige PhD, RN CCNE, CHSE – Milwaukee School of Engineering  
Leslie Graham RN MN PhD(c) CNCC, CHSE, CCSNE-Ontario Tech U-Durham College  
Barbara Sittner PhD, RN, APRN-CNS, ANEF-Bryan College of Health Sciences

---

---

---

---

---

---

---

---

## Disclosures

Relevant to the content of this educational activity, the speakers and moderator have no conflict(s) with commercial interest companies to disclose.

---

---

---

---

---

---

---

---

## Overview of Program – Seven Sessions

Session Topic with associated WORKBOOK	Date
Session 1: Introduction to Simulation	4/28/2021
Session 2: Creating a Supportive Environment and Psychological Safety to Learner and Facilitator	5/26/2021
Session 3: Debriefing Growth and Assessment - Best Practices	6/23/2021
Session 4: Evaluation of Student Learning	7/28/2021
Session 5: Scenario Design and Development	8/25/2021
Session 6: Curricular Integration and Alignment to Learning Outcomes	9/22/2021
Session 7: Interprofessional Simulations	10/27/2021

---

---

---

---

---

---

---

---

## Session #1: Introduction to Simulation Learning Objectives

1. Identify best practice standards for simulation-based learning to guide evidence-based experiences.
2. Discuss two theoretical models to guide simulation practice for a quality experience.
3. Select the appropriate simulation modality to meet objectives of the simulation-based experience.
4. Describe three types of evaluation used to assess performance.

---

---

---

---

---

---

---

---



## Standards of Best Practice

Identify best practice standards for simulation-based learning to guide evidence-based experiences.

---

---

---

---

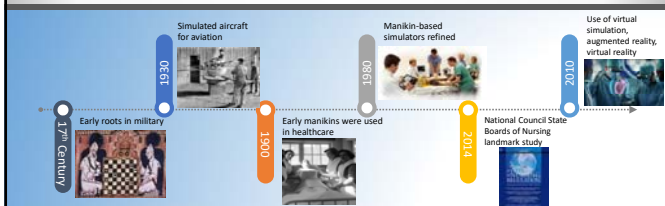
---

---

---

---

## Evolution of Simulation



---

---

---

---

---

---

---

---

## Why Use Standards?

- Simulation standards
- Educational standards
- Organizational standards



---

---

---

---

---

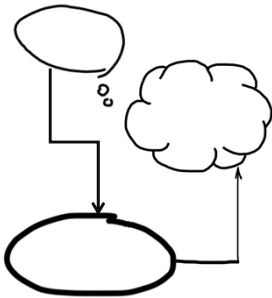
---

---

---

## Theoretical Models

Discuss two theoretical models to guide simulation practice for a quality experience.



---

---

---

---

---

---

---

---

## Models

Zone of Proximal Development  
(Vygotsky, 1978)



Panic Zone



Learning Zone  
*'Safe to feel Uncomfortable'*

Comfort Zone

---

---

---

---

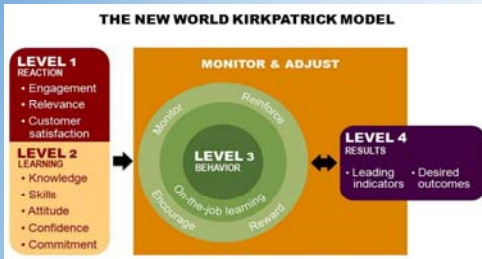
---

---

---

---

## Models



© 2010-2018 Kirkpatrick Partners, LLC. All rights reserved. Used with permission. Visit [kirkpatrickpartners.com](http://kirkpatrickpartners.com) for more information.

Kirkpatrick's Four Levels of Training Evaluation by Kirkpatrick, Wendy Kuyper; Kirkpatrick, James D. Reproduced with permission of Association For Talent Development in the format Republic in presentation/slides via Copyright Clearance Center.

---

---

---

---

---

---

---

---

## Models



Jeffries, P. (Ed.). (2016). *The NLN Jeffries Simulation Theory*

---

---

---

---

---

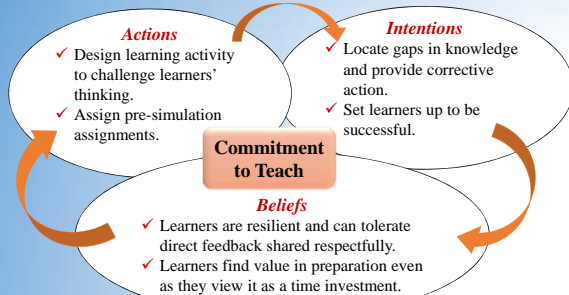
---

---

---

## Reflection on Perspectives of Teaching (Pratt, 1998)

Understanding one's own perspective and your peers




---

---

---

---

---

---

---

---



## Simulation Modalities

Select the appropriate simulation modality to meet objectives of the simulation-based experience.

---

---

---

---

---

---

---

---

### Low Fidelity



Laerdal (2021) Chestor Chest. Image  
<https://www.laerdal.com/usa/0402/370/Vascular-Access-Chestor-Chest>



---

---

---

---

---

---

---

---



---

---

---

---

---

---

---

---

## Medium Fidelity



Gaumard (2021). HAL® S315 - Adult Airway and CPR Trainer <https://www.gaumard.com/s315>

---

---

---

---

---

---

---

---

## High Fidelity



---

---

---

---

---

---

---

---

## Standardized Patient (SP)



Outpatient Office Visit : [https://simulation-center.s3.amazonaws.com/IMG\\_1503.mp4](https://simulation-center.s3.amazonaws.com/IMG_1503.mp4)

---

---

---

---

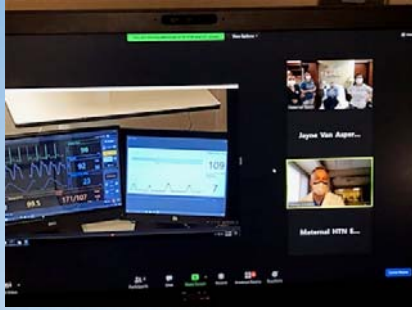
---

---

---

---

## Virtual Simulation



---

---

---

---

---

---

---

---

## Virtual Reality



HealthySimulation.com (March 2021). Virtual Reality in Medicine. Retrieved from: <https://www.healthysimulation.com/virtual-reality-in-medicine/#:~:text=Virtual%20Reality%20Commonly%20Refers%20to,graphic%20and%20other%20memory%20experiences>

---

---

---

---

---

---

---

---

## Haptic Device: Force Sensing Table Technology™

A brochure for Force Sensing Table Technology. The left side features a line graph titled "Learning Engagements with FSIT™" showing an upward trend. The right side shows a photograph of a medical table with the technology installed. The text "Innovations in Education" and "Force Sensing Table Technology™" is prominent. The CMCC logo and website "www.cmcc.ca" are at the bottom.

Canadian Memorial Chiropractic College (nd) <https://www.nwhealth.edu/media/nwsu-website/content/assets/documents/giving/force-sensing-table-technology-brochure.pdf>

---

---

---

---

---

---

---

---



## Evaluation

Describe three types of evaluation used to assess performance

---

---

---

---

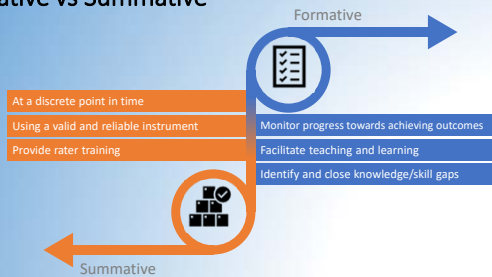
---

---

---

---

## Formative vs Summative



---

---

---

---

---

---

---

---

## High Stakes Evaluation

At the end of a learning process

Conducted by trained, non-biased objective raters

After the participant has had opportunity for multiple exposures including the evaluation tool

Evaluation tool must be tested with similar populations



---

---

---

---

---

---

---

---



## Highlights from Your Needs Assessment (*n* of 20)

- **Prior training:** range from 1<sup>st</sup> time, to a variety of training (webinars, conferences, workshops, and certificate program)
- **Frequency:** ≥ weekly (45%); ≥ monthly (10%); 1-3 times/yr (15%) and have not done (30%)
- **Teach theory:** 55%
- **Participated in a sim oneself:** 50%
- **Primary Type of sim:** Formative (37%); summative (31%); high stakes (19%); don't know (13%)
- **Number of learners:** 1 (7%); 2-3 (27%); 4-5 (47%); > 5 (20%)
- **Role:** range in roles
- **Interest: percent ranked in top 3**
  - virtual (79%); manikin-based (64%); hybrid (53%); SP (53%); virtual reality (53%)
  - evaluate quality of sim (47%); theory (43%); learner needs (42%); objectives (37%); realism (37%); evaluate learner (32%); debrief (26%); scenarios (21%); facilitate (15%); prebrief (0%)

---

---

---

---

---

---

---

---

## References

- Aebbersold, M. (2016). The History of Simulation and Its Impact on the Future, *Advanced Critical Care* 27(1), 56–61. <https://doi.org/10.4037/aacnacc2016436>
- INACSL Standards Committee. (2016). Standards of Best Practice : Simulation. *Clinical Simulation in Nursing*, 12, 51-53. <https://doi.org/10.1016/j.ecns.2016.09.006>
- Jeffries, P. (Ed.). (2016). *The NLN Jeffries Simulation Theory*. Wolters Kluwer.
- Kirkpatrick, J. D., & Kirkpatrick, W. K. (2016). *Kirkpatrick's four levels of training evaluation*. ATD Press.
- Lewis, K. L., Bohnert, C. A., Gammon, W. L., Hölzer, H., Lyman, L., Smith, C., ... Gliva-mcconvey, G. (2017). The Association of Standardized Patient Educators (ASPE) Standards of Best Practice (SOBP), 1–8. <https://doi.org/10.1186/s41077-017-0043-4>
- Lioce L. (Ed.), Lopreiato J. (Founding Ed.), Downing D., Chang T.P., Robertson J.M., Anderson M., Diaz D.A., and Spain A.E. (Assoc. Eds.) and the Terminology and Concepts Working Group (2020), *Healthcare Simulation Dictionary—Second Edition*. Rockville, MD: Agency for Healthcare Research and Quality; January 2020. AHRQ Publication No. 20-0019. DOI: <https://doi.org/10.23970/simulationv2>
- Pratt, D. (1998). *Five perspectives on teaching in adult and higher education*. Krieger Publishing Company, Society for Simulation in Healthcare. Certification. <https://www.ssih.org/Credentialing/Certification/CHSE>
- Vygotsky, L. (1978). *Mind in society: The development of higher psychological processes* (M. Cole, Ed.). Harvard University Press.

---

---

---

---

---

---

---

---