

Curriculum Design



An open access professional development module for simulationists

How to use this module



Module progresses from foundational concepts to advanced practice. Self direct how deep you want to go!

Exercises are designed to work on your own or to discuss with a friend over coffee.



Open access links sometimes break! Let us know via @sim_podcast

This module is a collaboration with :

NYC
HEALTH+
HOSPITALS

Harlem

SIMULCAST
a hi-fidelity podcast



This document is licensed under a Creative Commons Attribution 3.0 Australia licence. To view a copy of this licence, visit creativecommons.org/licenses/by/3.0/au

© Simulcast 2022

Last reviewed 21.6.2022

You are free to copy, communicate and adapt the work, as long as you attribute the authors of this module and their institution.

For more information contact:

Simulcast at @sim_podcast

An electronic version of this document is available at simulationpodcast.com

Curriculum Design

Module Author : Felicia A. Hercules, MD

Harlem Hospital, New York

Overview :

Simulation is being embraced by medical education institutions at an exponential rate. While the value of simulation education cannot be denied, like most things, it is only as good as its foundation. The foundation of a robust simulation program starts at the curriculum.

A thoughtful and focused curriculum will be able to deliver simulation education that is high quality, reproducible, adaptable to learner needs and responsive to feedback. Many institutions have established validated curriculums and the challenge of integrating simulation to support these established milestones are evident.

Exercise 1 : What is all the fuss about?

It is important to understand why simulation education has grown to be such a vital educational modality.

Read this paper: [Simulation-Based Learning: No Longer a Novelty in Undergraduate Education¹](#)

Ask yourself:

- What benefits have you seen using simulation as an educational modality?

Ask a colleague :

- What was your first exposure to simulation?
- What makes an effective simulation session?

Thorny questions:

- How can you obtain buy-in from those who do not believe in simulation?
- How can you develop faculty to produce more simulation educators?

Exercise 2 : Getting Started Using Kern's 6 Steps of Curriculum Design

Listen to the podcast:

- [Simulation in Healthcare Education Series 1 Chapter 2 : "Curriculum Development"²](#)
- In this interview from Northwestern University Dr. Barsuk interviews Dr. David Salzman on curriculum development in mastery learning. As you listen think about how these concepts relate to a curriculum or learning goals within your own service.

Ask yourself :

- How can I integrate simulation into an already established overall curriculum?
- What level of learner am I targeting?
- Do I have sufficient resources?
- How will I get feedback on my courses?

Discuss a local curriculum or learning objective with a colleague :

- Is simulation a good fit to address a problem?
- What are sources of funding that we can tap into?

Retrieval Practice:

- Give one example of how to address each of the 6 steps of curriculum design.

Exercise 3 : Dabbling in Education Theory

Education theory can seem overwhelming but teaching novice learners requires a different course of action than teaching experienced learners. A little attention to theory can profoundly impact your ability to respond to a variety of learner's needs.

Start by focusing on the following 3 theories by reading this blog : [Learning Theories - InstructionalDesign.org](https://www.instructionaldesign.org/learning-theories)³

1. Experiential Learning Theory
2. Transformational Learning Theory
3. Cognitive Load Theory

Ask yourself:

- What are some occasions where you felt overwhelmed learning a new task? How did you respond?

Thorny Questions

- How can I use education theory to help me build a robust curriculum?
- How do you address the challenges of teaching experienced learners?

Exercise 4 : Challenges to Overcome - To Infinity and Beyond

There will always be challenges, but don't be discouraged. Many of these challenges are published and you have the opportunity to use other's experiences to shape yours. The literature also offers how others have tailored their curriculums to fit their particular needs. Build on what others have created so we can all succeed together!

Read this article:

- [Most significant barriers and proposed solutions for medical schools to facilitate simulation-based undergraduate curriculum in OBGYN](#)⁴

Then consider how these barriers are impacted by a four-component instructional design approach:

- [Fundamental underpinnings of simulation education: describing a four-component instructional design approach to healthcare simulation fellowships](#)⁵

Additional Resources: Deep Dive

- [Curriculum development for medical education: a six-step approach](#)⁶
- [Cognitive load theory in health professional education: design principles and strategies](#)⁷

References :

1. Aebersold, M., 2018. Simulation-Based Learning: No Longer a Novelty in Undergraduate Education. *OJIN: The Online Journal of Issues in Nursing*, 23(2).
2. Barsuk, J., 2022. Curriculum Development. [podcast] Simulation in Healthcare Education. Available at: <https://www.jiosaavn.com/shows/Podcast-SHE-Season1Ch2-CurriculumDevelopment/V66LaOG6T9A_> [Accessed 3 June 2022].
3. InstructionalDesign.org. 2022. Learning Theories - InstructionalDesign.org. [online] Available at: <<https://www.instructionaldesign.org/theories/>> [Accessed 3 June 2022].
4. Salman, Hira. "Most significant barriers and proposed solutions for medical schools to facilitate simulation-based undergraduate curriculum in OBGYN." *Archives of gynecology and obstetrics* vol. 304,6 (2021): 1383-1386. doi:10.1007/s00404-021-06133-4
5. Meguerdichian, Michael & Bajaj, Komal & Walker, Katie. (2021). Fundamental underpinnings of simulation education: describing a four-component instructional design approach to healthcare simulation fellowships. *Advances in Simulation*. 6. 10.1186/s41077-021-00171-3.
6. Kern DE, Thomas PA, Hughes MT (2009) Curriculum development for medical education: a six-step approach. Johns Hopkins University Press, Baltimore⁶
7. Van Merriënboer, J.J.G. and Sweller, J. (2010), Cognitive load theory in health professional education: design principles and strategies. *Medical Education*, 44: 85-93.⁷

About the Author :



Dr. Felicia Hercules
Emergency Medicine Physician and Medical Simulation Educator
@Debrief_Doctor
Harlem Hospital Center

Dr. Felicia Hercules is a Board-Certified Emergency Medicine Physician in New York City. She received her medical degree from Albert Einstein College of Medicine in 2011. Dr. Hercules went on to complete her Emergency Medicine Residency at Jacobi Medical Center where she was selected as a Chief Resident during her final year. During residency, she discovered her passion for teaching and was drawn to medical simulation as a unique training modality. She went on to complete a Fellowship in Medical Simulation at Mt Sinai St Luke's Medical Center in New York, NY.

Dr. Hercules currently serves as the Clinical Director of Medical Simulation at Harlem Hospital Center. She balances her clinical responsibilities at a busy Level I Trauma center with providing simulation training to the next generation of hospital educators.