Next Time Won't You Play With Me:

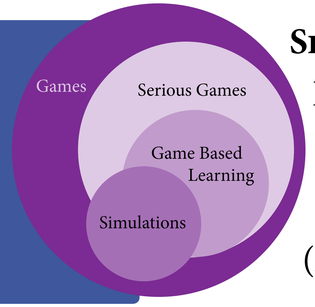
# Scalability of Simulation-Based Learning at Northwestern University

*By Derek Thurber*

**Research Question:** What variables of scale affect the stated goals of the simulation-based medical education at the Feinberg School of Medicine and in what ways do these variables have to be accounted for when replicating simulation-based education innovation at scale?

## Rationale

- The average age of gamers today is 34
- Games have extraordinary motivational pull—more people play Candy Crush than live in France, Germany, or Canada
- 40 percent of games are played by women




**Simulations** include "devices, trained persons, lifelike virtual environments, and contrived social situations that mimic problems, events, or conditions that arise in professional encounters" (McGaghie et al., 2014, p. 376).

## Literature Domains

- Definition and Historical Contexts of Games in Learning
- Game Elements and Learning
- Games-Based Learning and Motivation
- Scalability of Education Innovations

## Variables of Scale Categories

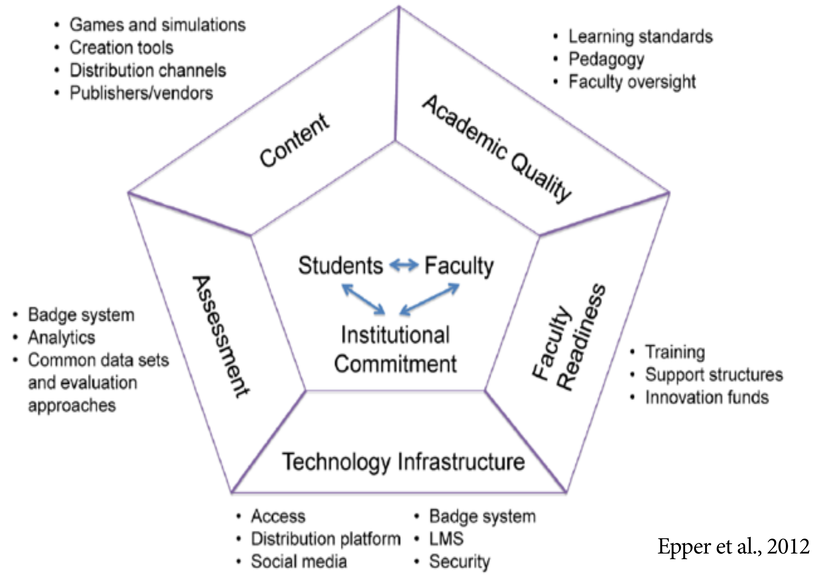
1. Student Level Variables
2. Teacher Level Variables
3. Technology Infrastructure Conditions
4. School/Class Level Variables
5. Administrative/School Culture Level Variables

Clarke & Dede, 2009

## Data Triangulation

1. Artifact Analysis of publicly available information
2. In Depth Faculty Interviews
3. Simulation Lab Observations

***Institutional Perspective of the Game-Based Learning Ecosystem.***




Epper et al., 2012

Clarke, J., & Dede, C. (2009). Robust designs for scalability. In Learning and instructional technologies for the 21st century (pp. 1–22). Springer.

Epper, R. M., Derryberry, A., & Jackson, S. (2012, August 9). Game-Based Learning: Developing an Institutional Strategy. EDUCAUSE Center for Applied Research. Retrieved from http://www.educause.edu/ecar

McGaghie, W. C., Issenberg, S. B., Barsuk, J. H., & Wayne, D. B. (2014). A critical review of simulation-based mastery learning with translational outcomes. Medical Education, 48(4), 375–385.

## Initial Data Findings

### Artifact Analysis of Feinberg Website

- The simulation and surgical skills labs occupy a total of 11,000 $ft^2$.
- 5 patient rooms with a double trauma room, 2 skills labs, and a large and small operating room.
- 12,000 $ft^2$ standardized patient Clinical Education Center (CEC).
- Over 1,200 learners who utilize the CEC every year.
- Trains students, residents, fellows, attendings, nurses and paramedics.

## Implications for Practice

The research will create a reference which a faculty member, administrator, or instructional designer could use when designing a new simulation-based learning environment using similar characteristics and goals as the Feinberg simulation lab.