iOER: Interactive Open Educational Resources

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Session Description

This presentation/discussion will address

I. What is iOER and why it is important?

II. How to use iOER for student engagement and assessment,

III. How to locate and/or build your own iOER

IV. Recommendations for Integrating iOER in the curriculum

V. A Modest Proposal...

Part I. What is iOER and why it is important?

What is iOER? (Interactive Educational Resources)

- "A discrete, digital, interactive instructional resource used to teach a specific learning objective in a course or curriculum" (Shank 2014)]

- Usually a simulation (sim) or serious game (game designed to promote learning)

- Using these tools, students can "learn by doing"– "applying what they know and practicing their skills in a digital environment which can provide instant feedback."

[Source: https://oerinteractive.org/]

What are Examples of iOER?

simulation

Serious game

Interactive Learning Media (ILM)
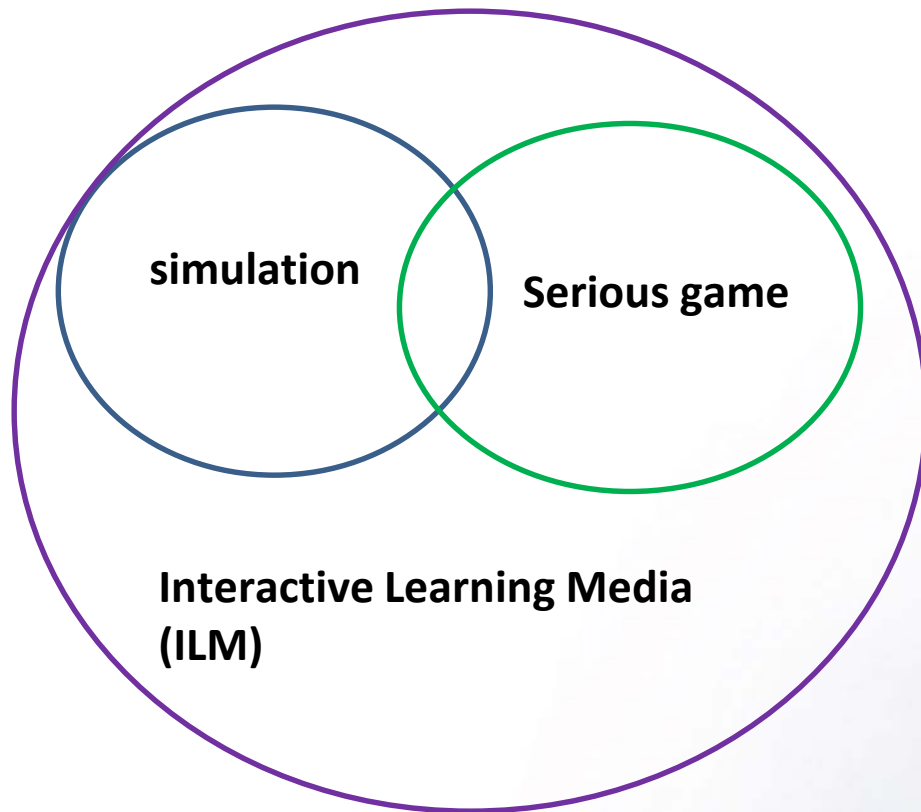
- A simulation is an "interactive environment in which features in the environment behave similarly to real-word events." (Clark & Meyer, 2003).

- "A serious game is a game in which education (in its various forms) is the primary goal, rather than entertainment." (Chen, 2006)

- They are both forms of interactive learning media (ILM)

Why Should We Use iOER?

"The idea of **passively sitting back and gathering around the radio or television** simply watch and listen to a show is becoming increasingly foreign to today's students."

John D. Shank

Something to Think About

"Traditional Linear Content --books, movies, lectures...focus on the passive content of learning-to-know rather than the active content of learning-to-do."
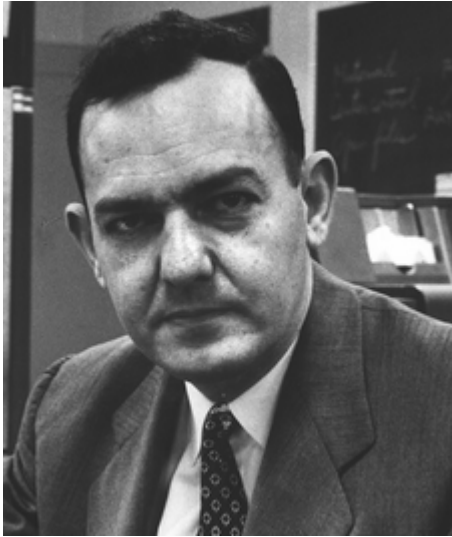
Clark Aldrich *The Complete Guide to Simulations & Serious Games*

Paradigm Shift

Learning to Know

Learning to Do

Something to Think About

"Learning results from what the **student does and thinks**, and only from what the student does and thinks."

Herbert Simon
(Nobel laureate, one of the founders of Cognitive Science)

Part II: Using iOER for student engagement and assessment

Examples of iOER

Short Sims

Fighting a Church fire (Fire Science)
https://goo.gl/vazLOV

Rhet Sims (Composition)
https://goo.gl/90TDHR

Evil Landlady (Global Culture)
http://goo.gl/UKLCKc

A Fine Line (Ethics)
http://goo.gl/5GrXOz

The Dilemma (Philosophy)
https://goo.gl/TAS6jm

Balancing Act (Physics)
https://goo.gl/UWuX7v

Serious Games

Free Rice (Vocabulary review)
http://freerice.com/

Spent (Sociology)
http://playspent.org/html/

iOER (Games and Sims) as Means of Engaging Students

"You can discover more about a person in an hour of play than in a year of conversation." *Plato*

Using iOER to Assess Prior Knowledge

- "We overestimate student knowledge and thus build new knowledge on a shaky foundation." (Ambrose et al., 2010)

- iOER (Games & Simulations) can be used to identify gaps in students' knowledge

- Students can engage in a simulation and game, then report out on their mistakes while identifying the assumptions that led them into error (metacognition)
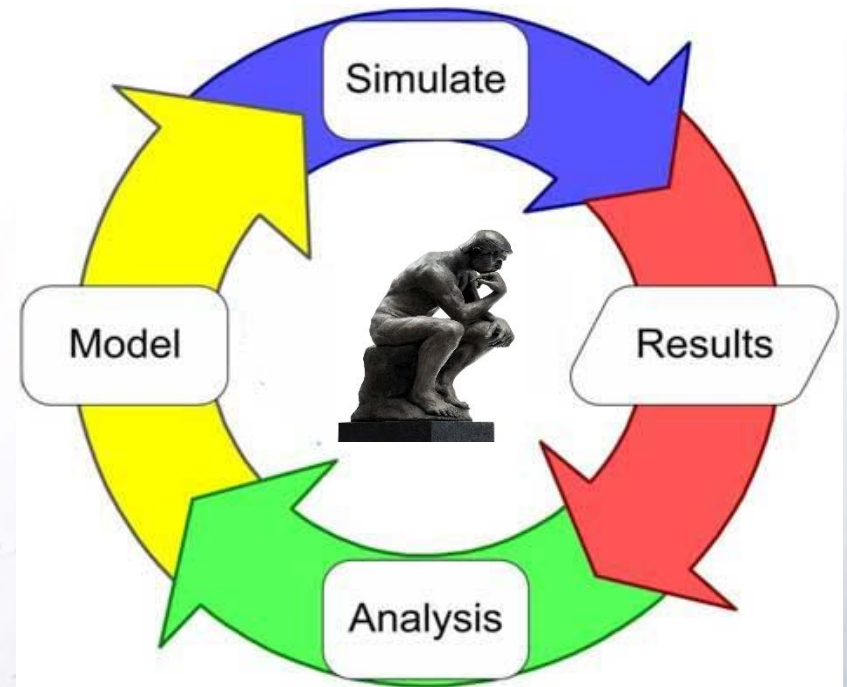
Part III: Locating and/or building your own iOER

Locating Quality iOER

- **Nobel Prize Edugame Site** - http://nobelprize.org/educational_games/

- **PHet– Interactive Simulations for Science and Math**. https://phet.colorado.edu/

- **OER Interactive** - www.oerinteractive.org & www.twitter.com/oerinteractive

Educational

You don't have to be a genius to understand the work of the Nobel Laureates. These games and simulations, based on Nobel Prize-awarded achievements, will teach and inspire you while you're having FUN!

Blood Typing Game

HUMAN BLOOD GROUPS 2012 Winner of the Best Game Category by Swedish Learning Awards. Try it out and learn about human blood types and blood transfusions!

OERinteractive

Icon made by Freepik from www.flaticon.com

Tools for Creating iOER

Freeware

Twine
https://twinery.org/

Quandary
http://www.halfbakedsoftware.com/quandary.php
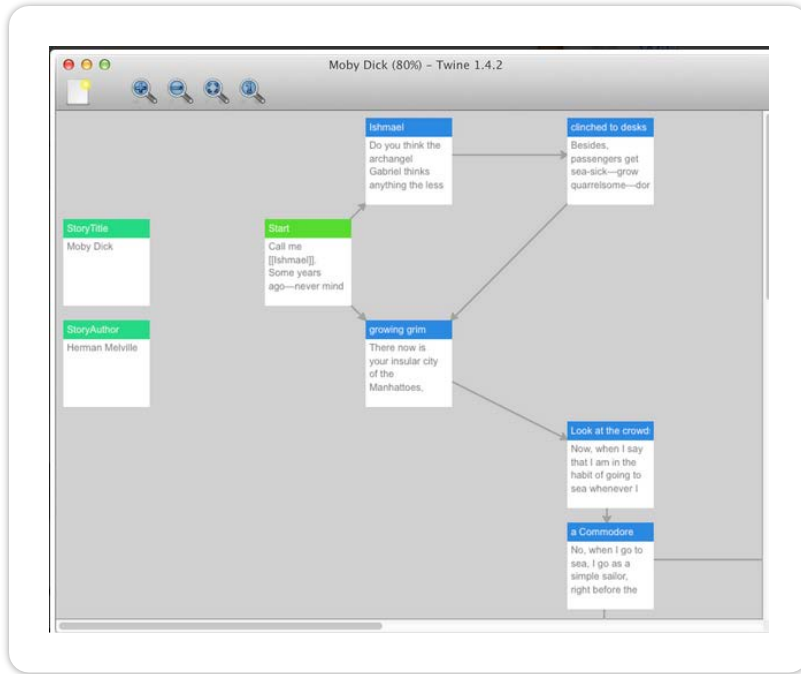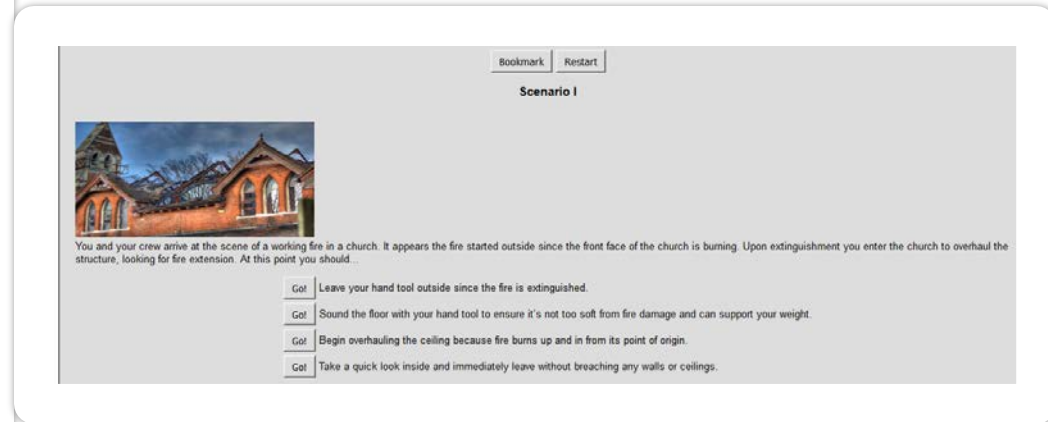
Tools for Creating iOER

Licensed Software

Articulate
https://www.articulate.com/

Branchtrack
https://www.branchtrack.com/
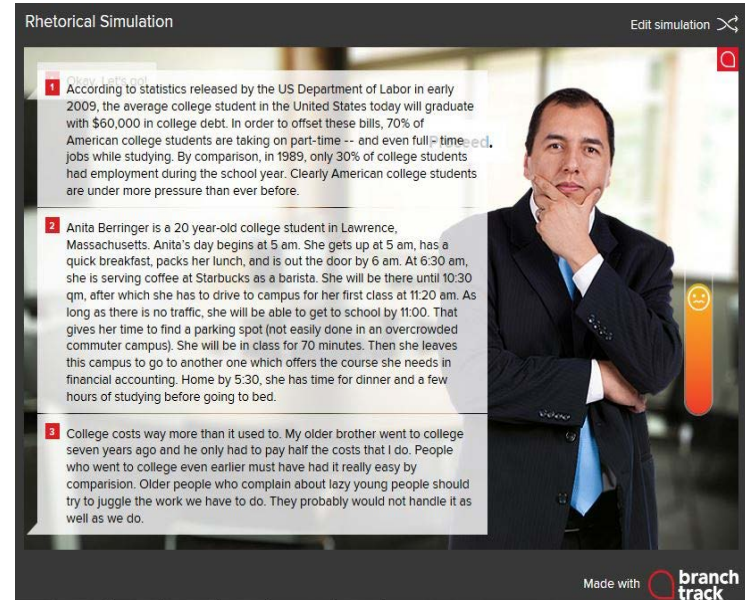
A Primer for New Short Sim Designers

1. What is your target learning outcome? What do you want students to do? What knowledge/skill proficiency should they demonstrate?

2. How would the knowledge be applied in the world? In what situation would the target knowledge or skill be applied?

3. What type of errors do novices in your domain typically make?
   - Errors based on a misconception?
   - Errors that resulted from a knowledge gap?
   - A correct idea that was applied in the wrong context?

Things to Keep in Mind: In the scenario you are designing there should more than one path to a preferred outcome. In the world, there many ways to be right as well as many ways to be wrong. This should be reflected in the sim to the degree that it is possible.

When creating/using iOER consider this checklist….

1. Does it have a clear connection to the course content?

2. Does the iOER artifact confirm to UDL principles?

3. Is it something that can be easily used on a computer or mobile device?

Part IV: Recommendations for integrating iOER in the curriculum

Recommendations for Integrating iOER

- Faculty & instructional design teams partner to develop iOER that integrates with course curriculum

- Slow but steady integration in online course. Experiment. Survey students for their feedback.

- Cite research literature for administrators. Emphasize your focus on both increased engagement & quality assessment.

- Form a community of practice with others.

Integrating iOER with e-textbooks
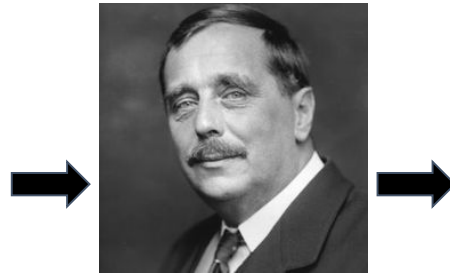
V: A Modest Proposal...

Edutech 1.0 to Edtech 2.0 (or Why We Need an Edwin Porter moment)

Where we are

Where we should be

Timeline of Massachusetts's Contributions to Education

17th Century
1636 - Harvard, first institution of higher learning in North America founded
1647 - The General Court of the Massachusetts Bay Colony decrees that every town of fifty families should have an elementary school and that every town of 100 families should have a Latin school.

19th Century
1817 - A petition presented in the Boston Town Meeting calls for establishing of a system of free public primary schools.
1820 - First public high school in the U.S., Boston English, opens.
1829 - First School for the visually impaired founded
1827- Massachusetts passes a law making all grades of public school open to all pupils free of charge.
1837 - Mt. Holyoke, first American college for women founded.
1839 - First state-funded school for teacher education founded
1848 - Perkins Institute, first school for students with special needs
1850 - First mandatory school attendance law
1854 - First free library opens (Boston Public Library)

21st Century
2002 - MIT Opencourseware, first major OER initiative, promotes idea of "shared intellectual commons"

2016 - Massachusetts Community College system develops first repository of interactive open educational resources!!!

Three Reasons why a Mass CC iOER Repository would be an Awesome idea

- No one else has done it—*yet*.

- It would be a way of distinguishing our efforts from other state OER initiatives

- As the state that led the country into public education, we would be contributing to an important tradition

Recommended Reading

- Aldrich, C. (2009). *The Complete Guide to Simulations & Serious Games: How the Most Valuable Content Will Be Created in the Age Beyond Gutenberg to Google.* San Francisco, CA: Pfieffer

- Hertel, J. P., & Millis, B. J. (2002). *Using Simulations to Promote Learning in Higher Education: An Introduction* (Enhancing Learning Series). Sterling, VA: Stylus.

- Kapp, K. (2012). *The Gamification of Learning and Instruction: Game-based Methods and Strategies for Training and Education.* Pfieffer.

- Mayer, R (2014). *Computer-Based Games for Learning: An Evidence Based Approach.* Cambridge: MIT Press

- Michael, D & Chen, S. (2006) *Serious Games: Games that Educate, Train, and Inform.* Boston: Thomson

- Shank, John D. (2014) *Interactive Open Educational Resources: A Guide to Finding, Choosing, and Using What's Out There to Transform College Teaching.* Jossey-Bass.