Contemporary Pedagogy:

The Layered Learning Approach for Supporting Innovative Technology

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INACSL is an accredited ANCC provider.
Disclosures

• Conflict of Interest
  • Eric Bauman: CAE Healthcare (Stock Shareholder excluding mutual funds); Clinical Playground LLC (Consultant); Clovis Oncology Inc (Stock Shareholder excluding mutual funds); General Electric (Stock Shareholder excluding mutual funds); Pfizer (Stock Shareholder excluding mutual funds); Springer Publishing Co. (Royalties); Zynga (Stock Shareholder excluding mutual funds)
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• Successful Completion
  – Attend 90% of session
  – Complete online evaluation
Objectives

Upon completion of the workshop, participants will be able to:

1. Compare and contrast traditional experiential pedagogy with contemporary pedagogy designed to support multi-media technology such as game-based learning

2. Demonstrate the concepts of innovation and fit for curriculum through the storyboarding process

3. Design, discuss, and critique game-based interventions applicable to identified curriculum needs
Traditional Experiential Pedagogy

• Kolb – Experiential Learning Cycle

• Schön – Reflection “in” and “on” action

• Benner – Thinking in Action
Could theorists like Kolb, Schön and Benner have predicted the rapid advances in technology being used for clinical education?

Many contemporary theories that support multimedia teaching and learning draw in part from experiential learning theories.
Contemporary Pedagogy
For the digital learning landscape

• Gee – Socially Situated Cognition
• Squire – Designed Experience
• Games & Bauman – Ecology of Culturally Competent Design
• Bauman – Layered Learning Model
Socially Situated Cognition: Refers to learning that is situated within a material, social, and cultural world. Learning that is situated takes place in contextually specific and authentic environment with a host of values and expectations.
**Squire – Designed Experience**

**Designed Experience:** Is engineered to include structured activities targeted to facilitate interactions that drive anticipated experiences. These activities are created to embody participant experience as performance.
Games & Bauman
Ecology of Culturally Competent Design

Four-element model that emphasizes the importance of:

1. **Activities**: What players/learners do in the game or environment
2. **Contexts**: The context in which activities take place
3. **Narratives**: The story that situates the learning and drives psychological fidelity
4. **Characters**: How player and non-player characters are represented in the digital environment
Situated learning experiences link didactic content with practical hands on experiences.

- Didactic Preparation
- Interactive Applications & Games
- Task Trainer or Simulator
- Real World Experience

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Why Embrace Game Based Learning Pedagogy: Connect Learning with Reward

<table>
<thead>
<tr>
<th>Intrinsic</th>
<th>Extrinsic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reward comes from Mastery</td>
<td>Tangible Reward</td>
</tr>
<tr>
<td>Goals are clear, meaningful and situated</td>
<td>Goals assigned</td>
</tr>
<tr>
<td>Progress is intuitive apparent and immediate</td>
<td>Progress is determined or assigned outside of the current activity</td>
</tr>
<tr>
<td>[real-time or just-in-time]</td>
<td></td>
</tr>
<tr>
<td>Endorses or reinforces behavior you are</td>
<td>If you complete this task you will be given</td>
</tr>
<tr>
<td>already committed to or hope to engage in the future – Represents Player Agency</td>
<td>access to another task – Hierarchical Direction</td>
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</tbody>
</table>

**Autonomous** | **Directed**

- Active Learning
- Creative
- Deep Meaning
- Shallow
- Compliance
- Outcome Driven
Lets Play!

Games & Sims

- iAnesthesia
- Medical Bon...
- Embryo Tempus
- Handwashin...
- Diagnose Me
- Histology Card!
- Veterinary B...
- Airway Lab Sim
Identifying Opportunities to Integrate
Game Based Learning

Identify and Solve a Problem

• Ask: Can game based learning solve this problem?

• Ask: Is game based learning a good fit?

• Ask: What is the cost/benefit analysis?
Aspects of Fit: Impact

Effective
Efficient
Appealing

Proper Fit

Aspects of Fit: Constraints

Complexity

Learning Objectives

Cost

Time

## Digital Fit for Learning Situations

<table>
<thead>
<tr>
<th>Learning Situation or Goal</th>
<th>Type of Game or Simulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boring, mundane, undesirable tasks</td>
<td><strong>Games that level up</strong>; intrinsic motivation</td>
</tr>
<tr>
<td>Distinct levels of achievement or competency</td>
<td>Meta-gaming; <strong>use out-of-game resources</strong> or strategies to succeed</td>
</tr>
<tr>
<td>Reinforce information or processes</td>
<td><strong>Mini-games within game</strong></td>
</tr>
<tr>
<td>Define terms; use appropriately; syntax</td>
<td>Quick games; <strong>reward for speed</strong>; <strong>replay from pool</strong></td>
</tr>
</tbody>
</table>

Storyboarding

If you can build a PowerPoint presentation you can build a rudimentary Storyboard

Think about how a comic book or graphic novel unfolds

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http://www.healingblade.com
Storyboarding

**Start Screen**

**EMBRYOLOGY**

Early Cellular Stages

**Intro Screen**

Introduction:
Can you sequence the stages of cellular development?

Watch the video and then sort video clips in the proper order

**Watch the Video**

**Order the Video Clips**

Drag and Drop

**Answer Questions**

Multiple Choice Questions...
What is the name for this stage of cell growth?

Answer 1
Answer 2
Answer 3

**Ordering Completed**

Finish
Storyboarding

Play Your Video

Congratulations! You successfully sequenced the video segments.

Oh no! Try Again
Create Your Storyboard

• Work in small groups
• What problem are you trying to solve?
• Define objectives
• Use flip charts
• Narrate with pictures instead of words
• Share with larger group
• Vote on top 3
• Feedback from group
• Regroup and refine
• Present to larger group
• Vote on ’Best Storyboard’
Discussion & Questions
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References


