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Increasing Performance with Mobile Games and Gamification

Brenda Enders, Enders Consulting

Austin, TX • June 8 – 10, 2016
“a system in which players engage in an abstract challenge defined by rules, interactivity, and feedback, that results in a quantifiable outcomes.” Kapp

Games are driven by:
storylines, feedback loops, rules, consequences, and immersed in gameplay
Breaking the Gaming Stereo Type

Source: 2015 Essential Facts About the Computer and Video Game Industry 2015 report

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**AGE of Game Players**
- 26% under 18 years
- 30% 18-35 years
- 17% 36-49 years
- 27% 50+ years

**GENDER of Game Players**
- 56% male
- 44% female

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Game Effectiveness in the Work Place

65 studies over over 6,400 adult trainee’s

Game-Based Learning Increases:

• Skill-Based Knowledge by 14 %
• Factual Knowledge by 11 %
• Retention Rate by 9 %

Key Characteristics of the Experience:

• One Component
• Active Learning Experience
• Designed to Engage Intrinsically

Traci Sitzmann “A meta-analytic examination of the Instructional effectiveness of computer-based simulation games” Personnel Psychology
Gaming Under the Arches in Japan

• Assembling Burgers
• Making Fries
• Cleaning Work Stations


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Lowes: Virtual Store

- 6 mini-games
- Complete store footprint
- Fully articulated appliance department
- Assessment tracking
- Developed in Unity
The Grading Game

Providing Students Resources To Practice On Their Own

http://www.gradinggame.com
Playing the Game

http://www.gradinggame.com
Debrief and Reward

http://www.gradinggame.com
Taking Learning Out of the Classroom

Solve a Murder Mystery by Interacting with Simulated Characters, Other Players and Local Citizens

http://www.mentira.org/
UNM: Applying Spanish Skills

Week 1
Play Game Outside of Classroom

Classroom Debrief

Week 2
Play Game Outside of Classroom

Classroom Debrief

http://www.mentira.org/
UNM: Applying Spanish Skills

Week 3
Play Game in Groups
Field Trip

Week 4
Work Together to Solve
the Mystery

Present the case

http://www.mentira.org/
Key Characteristics for Gaming Success

- Embed within larger instructional program
- Include debriefing and feedback
- Support users in how to use the game
- Provides interactive experience that support learning objectives
- Needs to include all of the functions that a good ILT experience provides such as evaluation, debriefing and feedback

Gamification – Common Definition

Applying game mechanics within a non-gaming context.
# Mechanics & Motivation: The Building Blocks of Gamification

<table>
<thead>
<tr>
<th>Game Mechanics</th>
<th>Reward</th>
<th>Status</th>
<th>Achievement</th>
<th>Self Expression</th>
<th>Competition</th>
<th>Altruism</th>
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<tbody>
<tr>
<td>Points</td>
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<td>Levels</td>
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<td>Challenges</td>
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<td>Leaderboards</td>
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<td>Gifting &amp; Charity</td>
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</table>

Points, Badges and Leaderboards

http://www.creativepro.com/article/adobe-launches-levelup-photoshop
http://success.adobe.com/microsites/levelup
“using game-based mechanics, aesthetics and game thinking to engage people, motivate action, promote learning, and solve problems” Kapp
Thinking Like a Gamer

Levels

Time-based Activities

Social

Stories & Characters

Feedback Loops

Freedom to Fail
http://www.youtube.com/watch?v=lChOuUPFeUQ
Learning a Language

Brenda Enders Session P12: Crafting Your Mobile Learning Strategy to Ensure Its Success
Post Graduate Medical Education Reinforcement

Supplement traditional graduate medical education and encourage extracurricular learning

- Points, Badges & Leader Boards
- Voluntary Participation
- Individual & Group Competition
- Residency Website
- Three Rounds
- Thirteen Levels

http://pmj.bmj.com/content/early/2014/11/24/postgradmedj-2013-132486/F1.large.jpg
Welcome, Paul McRingo (update info)

Season 1 scores

Team Harrison is in the lead with 288 points!
(Calculated by average number of points per player)

<table>
<thead>
<tr>
<th>Rank</th>
<th>Name/Alias</th>
<th>Score</th>
<th>Hot streak</th>
<th>Marathon</th>
<th>Level</th>
<th>Team</th>
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<tbody>
<tr>
<td>1</td>
<td>T-dub (PGY3)</td>
<td>345</td>
<td>3</td>
<td>35</td>
<td>coffee lord</td>
<td>Harrison</td>
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<tr>
<td>2</td>
<td>possimpible (PGY1)</td>
<td>325</td>
<td>3</td>
<td>22</td>
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<td>Lennon</td>
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<tr>
<td>3</td>
<td>Cheese Toast Assassin (PGY3)</td>
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<td>1</td>
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<td>Blackstone (PGY1)</td>
<td>314</td>
<td>2</td>
<td>2</td>
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<td>Rigby</td>
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<tr>
<td>5</td>
<td>Ehrmagerd (PGY2)</td>
<td>310</td>
<td>2</td>
<td>35</td>
<td>petri dish</td>
<td>Martin</td>
</tr>
</tbody>
</table>

You have 18 unanswered questions

Get next question

Review your answer history
View your badges
View the entire leaderboard
Experience and Retention

11.9% Average Increase in Knowledge Retention
Round 1: 10.2% increase and Round 2: 17.4% increase

Post Graduate Medical Journal “Gamification as a tool for enhancing graduate medical education

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Post Graduate Medical Journal “Gamification as a tool for enhancing graduate medical education

Question #10

A patient with rheumatoid arthritis diagnosed 4 weeks ago is admitted with fever, dry cough, severe dyspnea, and a diffuse interstitial pattern on a chest radiograph. The most likely diagnosis is:

- Atypical pneumonia
- Pulmonary lymphoma
- Rheumatoid lung disease
- Methotrexate toxicity
- Idiopathic pulmonary fibrosis

Correct!
Answer: Methotrexate toxicity

Methotrexate pulmonary toxicity may present in an acute, subacute, or chronic form. Cases have been reported as early as 12 days and as late as 18 years after the drug was initiated. The clinical presentation is nonspecific, with symptoms such as fever, malaise, nonproductive cough, dyspnea, and chest pain. Rapid progression to respiratory failure may occur. Some patients may progress to pulmonary fibrosis.

You have 18 unanswered questions
answer another question?

Rate this question: ★★★★★
Gaining Buy-In

- Dispel the Myths
- What problems are you trying to solve?
- What are your reasons for wanting to gamify your learning?
- What are your goals?
- What are the main benefits or outcomes you expect to achieve?
- How will you define and measure success?