The 5 Myths Of Game-based Learning
"I believe strongly in game-based learning, but..."
Myth #1 – Games-based Learning Is New
"...Life is a kind of Chess, in which we have often points to gain, and competitors or adversaries to contend with, and in which there is a vast variety of good and ill events... By playing at Chess then, we may learn: 1st, Foresight... 2nd, Circumspection (and) 3rd, Caution..." -- Benjamin Franklin
Myth #2 – Games Work Because They Capture Attention
“The Magic Formula”

Games = “fun”

= increased attention

= increased learning
Games Work Because They Are Voluntary!

Game = Voluntary attempt to overcome an unnecessary obstacle = “fun” = …
## Portal II

<table>
<thead>
<tr>
<th>Achievement</th>
<th>Description</th>
<th>Completion Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dual Pit Experiment</td>
<td>Do the same test twice</td>
<td>60.2%</td>
</tr>
<tr>
<td>Tunnel of Funnel</td>
<td>Master the Excursion Funnel</td>
<td>57.9%</td>
</tr>
<tr>
<td>The Part Where He Kills You</td>
<td>This is that part</td>
<td>57.0%</td>
</tr>
<tr>
<td>Lunacy</td>
<td>That just happened</td>
<td>56.4%</td>
</tr>
<tr>
<td>High Five</td>
<td>Celebrate your cooperative calibration success</td>
<td>55.1%</td>
</tr>
<tr>
<td>Scanned Alone</td>
<td>Stand in a defective turret detector</td>
<td>53.2%</td>
</tr>
</tbody>
</table>
Kingdoms Of Amalur - Reckoning

- **Romancing the Gem**
  Crafted an Epic Gem.
  - 22.0%

- **Jack of All Trades**
  Unlocked a Jack of All Trades destiny.
  - 22.0%

- **Destiny Defiant**
  You have defeated Tirdich, and defied destiny.
  - 18.1%

- **Cartographer**
  Discovered 100 locations.
  - 17.9%

- **Streaker**
  You spoke to someone while not wearing clothes.
  - 16.5%
the MIND’S LIE

Figure Out the Truth... Then Save Your Friends!
"The Mind’s Lie is a very enjoyable game to play. It is stimulating, engaging and fun!"

"[The game] should be less intellectual and more down to Earth"

"It was enjoyable and generally entertaining, especially within the context in which we played the game."
Myth #3 – “I Need A Game That Teaches…”
Game-based Learning Is Plural!

You need to consider:

- Different ways of learning
- Different gaming styles
- Different game themes
- Different kinds of “fun”
<table>
<thead>
<tr>
<th>Type Of Fun</th>
<th>1 point</th>
<th>2 points</th>
<th>3 points</th>
<th>4 points</th>
<th>5 points</th>
<th>Total Votes (N=12)</th>
<th>Average Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intellectual Problem Solving</td>
<td>2</td>
<td>3</td>
<td>6</td>
<td>1</td>
<td></td>
<td>12/100%</td>
<td>3.5</td>
</tr>
<tr>
<td>Competition</td>
<td></td>
<td>6</td>
<td>4</td>
<td>2</td>
<td></td>
<td>12/100%</td>
<td>3.2</td>
</tr>
<tr>
<td>Advancement and Completion</td>
<td>2</td>
<td>2</td>
<td>5</td>
<td>2</td>
<td></td>
<td>11/92%</td>
<td>2.67</td>
</tr>
<tr>
<td>Application of an Ability</td>
<td></td>
<td>3</td>
<td>5</td>
<td>2</td>
<td></td>
<td>10/83%</td>
<td>2.42</td>
</tr>
<tr>
<td>Social Interaction</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td></td>
<td>10/83%</td>
<td>2.25</td>
</tr>
<tr>
<td>Discovery</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>1</td>
<td>2</td>
<td>10/83%</td>
<td>2.25</td>
</tr>
<tr>
<td>Creation</td>
<td>2</td>
<td>4</td>
<td>4</td>
<td>1</td>
<td></td>
<td>11/92%</td>
<td>2.17</td>
</tr>
<tr>
<td>Immersion</td>
<td></td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>10/83%</td>
<td>2.08</td>
</tr>
<tr>
<td>Thrill of Danger</td>
<td>1</td>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
<td>9/75%</td>
<td>1.75</td>
</tr>
<tr>
<td>Power</td>
<td>2</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td></td>
<td>9/75%</td>
<td>1.67</td>
</tr>
<tr>
<td>Physical Activity</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td></td>
<td></td>
<td>6/50%</td>
<td>1.08</td>
</tr>
<tr>
<td>Comedy</td>
<td>5</td>
<td></td>
<td>2</td>
<td></td>
<td></td>
<td>7/58%</td>
<td>0.92</td>
</tr>
<tr>
<td>Beauty</td>
<td>4</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
<td>7/58%</td>
<td>0.58</td>
</tr>
<tr>
<td>Love</td>
<td>2</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td>3/25%</td>
<td>0.42</td>
</tr>
</tbody>
</table>

The 14 Kinds of Fun
Gamers vs. Analysts Game Priorities

- Competition: Analysts > Gamers
- Aesthetics: Analyssists = Gamers
- Learning: Analysts > Gamers
- Strategy: Analysts < Gamers
- Argumentation: Analysts < Gamers
- Voting: Analysts = Gamers
Why Not Develop Your Own Games?

1. Mobile game ~ 1 million
2. Web game ~ 1 million
3. PC/Console game ~ 8-60 million
4. MMO 100 million +
Myth #4 – Learning Objectives Come First

The game comes first
The game comes first
The game comes first
Results
Experiment:

Accuracy by Number of Times Exposed to Bias

<table>
<thead>
<tr>
<th>Identification Accuracy</th>
<th>Number of Times Exposed to Bias</th>
</tr>
</thead>
<tbody>
<tr>
<td>FA</td>
<td>2</td>
</tr>
<tr>
<td>CB</td>
<td>3</td>
</tr>
<tr>
<td>AB</td>
<td>4</td>
</tr>
<tr>
<td>BBS</td>
<td>5</td>
</tr>
<tr>
<td>S</td>
<td>5</td>
</tr>
<tr>
<td>MI</td>
<td>6</td>
</tr>
</tbody>
</table>

- FA: 2
- NB: 3
- CB: 4
- AB: 4
- BBS: 5
- S: 5
- MI: 6
Class: Strategic Intelligence
Class: Student Satisfaction

![Graph showing SIR from 2002 to 2012]

- 2002: 4.4
- 2004: 4.15
- 2006: 4.71
- 2008: 4.4
- 2010: 4.04
- 2012: 3.83
What is going on here?
Accuracy Over Time

And here?
“Good games operate at the outer and growing edge of a player’s competence, remaining challenging, but doable.”
- James Gee
Why Games?

“Indeed, experiments have shown that the more mental work readers have to do to infer a cause from a set of facts, the more memorable the causal inference will be.”

– Daniel J. Simons and Christopher F. Chabris
Why Games?

"...variability in constructing learning situations requires greater student effort. As a result, engaging in such situations may be less enjoyable for students and lead to lower student ratings of their instructors..."
Why Games?

"...This can be an important consideration on campuses where small differences in student responses on course evaluations are used—we believe inappropriately—to inform salary, promotion, and tenure decisions."

– Diane F. Halpern and Milton D. Hakel, Applying the Science of Learning to the University and Beyond, 2003
Myth #5

“Play games all term? The students are going to love this...”
thank you!
Resources

http://playinterrobang.com/

http://www.filamentgames.com/

http://jayisgames.com/

http://boardgamegeek.com/

http://www.g4ed.com/index.php/aboutus

http://www.gamesforchange.org/

http://www.jamespaulgee.com/

http://janemcgonigal.com/

http://www.edutopia.org/blog/film-festival-video-game-based-learning