Using simulations and gamification in higher education

Marcin Wardaszko Ph.D.
"The opposite of play isn’t work. It’s depression."

Brian Sutton-Smith

Are we going to use games and simulations in education?

But

Howe we can use games and simulations effectively in our curriculum?
Role and place of simulation games

Choice of the role, model and place of simulation games implementation in the educational systems have a great impact upon the way they are used:

• Simulation games as a summary of knowledge and skills
• Simulation games as a motivation to learn and knowledge and skills gaps recognition
• Simulation games as a support to particular and specific field of knowledge or skills
• Simulation games as a assessment and test center
Choice of simulation scenario

- Generic versus specific scenarios
- Level of realism

Kriz 2003 after Duke 1997
Course set-up

1. Planning
   • Establishing/determining learning goals
   • Choosing game and scenario
   • Planning the course route
   • Creating methods of assessment

2. Course execution
   ➢ Introducing game and scenario to the students
   ➢ Game rounds and workshops
   ➢ Effective feedback and debriefing process

3. Evaluation of the course outcomes
   ✓ Evaluation on the level of student and self-evaluation
   ✓ Evaluation on the level of the course
   ✓ Evaluation on the level of organization
## Choosing the solution

<table>
<thead>
<tr>
<th>Licensing</th>
<th>Own/custom solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Scalable cost</td>
<td>• High cost</td>
</tr>
<tr>
<td>• Short implementation span</td>
<td>• Long-term decision</td>
</tr>
<tr>
<td>• Many solutions on the market</td>
<td>• Unique solution</td>
</tr>
<tr>
<td>• Training of the trainers</td>
<td>• Revenue generation potential</td>
</tr>
<tr>
<td>• Buying someone's idea</td>
<td>• Low trainer training cost</td>
</tr>
<tr>
<td>• Lack of local flavor</td>
<td>• Knowledge generation</td>
</tr>
</tbody>
</table>

[www.kozminski.edu.pl](http://www.kozminski.edu.pl)
Gamification in Education Background

• Just Press Play – Rochester Institute of Technology & Microsoft (2011)
Gamification in Education Background

- Just Press Play – Rochester Institute of Technology & Microsoft (2011)

Alternate Reality Game
Storyline
Quests
Achievements
Course framework

**Course name:** Gamification of business and education

**Course narrative:**
Space Quest: students as spaceship crew
teacher as a spaceship commander

**Main goal:** reactivate spaceship generator
SPACE QUEST

WARNING: ALL SYSTEMS OFFLINE
Course framework

The storyline – it needs to have some epic meaning. Thanks to that the course can be more attractive and students motivation will be higher just to see how the story ends.
Course framework

**Points system:** each spaceship system needed some number of energy cells (points) to activate it back.

**How to earn points?**
- Missions accomplishment (one mission for each system),
- Activity during lecture,
- Instant challenges,
Course framework

Challenge + Badge = recognition

**Challenge #1**
Name all the social media platforms from the picture above.
Prize: 10 cells + SocialMediaNinja badge

**Challenge #2**
Why H.G. Wells almost started war of the worlds?
Prize: 10 cells + BookWorm badge
Course framework

Short missions – focuses students attention on certain knowledge/activity

Mission 4.
Your task is to find gamified solution and write short review about its purpose and functionalities. Start from describing the problem that chosen service or platform want to solve. Make a short description of game design elements that you can observe within the system. State your opinion about the solution and do not hesitate to be critical.

Upon successful completion of this mission you will be rewarded with 10 energy cells.
Bonus: +5 energy cells if chosen solution won’t be a marketing based one
Random events – element of surprise that strengthen students participation. F.ex.: student does a dice roll. Then if:

1: +50% of energy cells for one of completed missions
2: nothing happens
3: you can give +100% of energy cells for next mission done by your friend

Etc.
Course framework

Progression:

SPACE QUEST

16% of Systems Online
## Course framework

### Boss fights – case studies, final project

- Worth a lot of points,
- Should be a challenge that uses gained knowledge and/or skills of a student,

<table>
<thead>
<tr>
<th>Mid-Boss</th>
<th>Final Boss</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 case studies + tasks around them during a lecture. Narrative: cadets are divided into teams to gather scrap that can be found around the spaceship. It can be useful for ship repairment.</td>
<td>Final project: individual projects describing chosen gamified solution Narrative: main core of the ship is the most complicated system and needs a huge amount of energy cells.</td>
</tr>
</tbody>
</table>
Conclusions

- Player-centric design
- Stimulating positive behaviour
- Gamification could be the answer for millennials:
  - Short attention span
  - Instant feedback
  - Video games natives
Conclusions

<table>
<thead>
<tr>
<th>No. of students</th>
<th>77</th>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Activity</th>
<th>Number of attempts</th>
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<tbody>
<tr>
<td>Mission</td>
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<tr>
<td>Challenge</td>
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<tr>
<td>Mid Boss/teams</td>
<td>48</td>
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<tr>
<td>Final Boss</td>
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<tr>
<td>Energy cells</td>
<td>8747</td>
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All actions are voluntary
Captian,

I am sending my mission 2 results below.

Mission 2:

After reading the player types description I have graded myself as follows:
Gamification Platforms
Gamification Platforms
# Gamification Platforms

## World of Classcraft

<table>
<thead>
<tr>
<th>Class</th>
<th>Level</th>
<th>HP</th>
<th>AP</th>
<th>XP</th>
<th>Powers</th>
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<td>30</td>
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<td>2995</td>
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Center for Simulation 
Games and Gamification

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