The Educational Potential of Computer Games

Masterclass 19th November 2010
Updated program

09.15-9.30 - Welcome & presentation round by Birgitte Holm Sørensen
09.30-10.15 - A framework for designing educational computer games
10.15-11.00 - Improving GBL Research: Issues and Challenges
11.00-11.15 - Break
11.15-12.00 - Student 1 (25 min. talk / 20 min. discussion)

Lunch break

13.00-13.45 - Student 2 (25 min. talk / 20 min. discussion)
13.45-14.30 - Student 3 (25 min. talk / 20 min. discussion)
14.30-14.45 – Break (15 min)
14.45-15.30 - Student 4 (25 min. talk / 20 min. discussion)
15.30-16.00 - Final discussion, evaluation & wrap-up
16.00 - Informal networking
A framework for designing educational computer games

Masterclass 19th November 2010

CEO, founder Serious Games Interactive
My background

• MA Psychology
• PhD Games & learning
• Jumping between industry & research

Computer games
• Global Conflicts: Palestine
• Global Conflicts: Latin America
• +10 games for clients

Research projects
• Commercial video games for learning
• Educational potential of video games: GC: Palestine
• Research project: Serious Games on a Global Market place
Agenda

1. Introduction: The problem & challenge
2. What is a good learning game?
3. Example: Global Conflicts: Latin America
“Most of what goes under the name "edutainment" reminds me of George Bernard Shaw's response to a famous beauty who speculated on the marvelous child they could have together: "With your brains and my looks ..."

He retorted, "But what if the child had my looks and your brains?""

- Seymour Papert (1998: 88)
Edutainment suffers from

Little intrinsic motivation: Extrinsic motivation through rewards, rather than intrinsically motivating.

No integrated learning experience: Lacks integration of the learning experience with playing experience.

Edutainment limited

Edutainment works for some forms of knowledge & some target groups.

Simple abstract & self-contained knowledge for pre- and early school (ex. spelling, algebra, geography).
The opportunity

“Educational games are [can be] fundamentally different than the prevalent instructional paradigm. They are based on challenge, reward, learning through doing and guided discovery, in contrast to "tell and test" methods of traditional instruction.”

- Report of the Federation of American Scientists,
  "Educational Games 2006"
Learning games history 101

- **1960s**: Strong trend for role-playing, board games & simulations
- **1970s**: Early experiments with educational games
- **1980s**: Full-blown edutainment industry that crashes
- **1990s**: Well-established but conservative brands
- **2000s**: Serious Games movement starts the new century
In summary

One crucial factor – we need to create GAMES...!

We HAVE lost that loving feeling one to many times...
1. Introduction: The problem & challenge
2. What is a good learning game?
3. Example: Global Conflicts: Latin America
Are these learning games?

Are these good learning games?
A good game

A good learning game is also a good game.
A good game is also a good learning game.

<table>
<thead>
<tr>
<th>Substantives</th>
<th>Verbs</th>
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<tbody>
<tr>
<td>• Audiovisual</td>
<td>Engaging</td>
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<tr>
<td>• Story</td>
<td>Challenging</td>
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<td></td>
<td>Interesting</td>
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<td>• Problem space</td>
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<td>• Choices/decisions</td>
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<td>• Feedback</td>
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<td>• Balance</td>
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<td>• Reward</td>
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Are these good (learning) games?

All have elements of learning.

When learning focus increase, motivation tends to decrease.

• Substantivs (ship/cannon)
• Verbs (sail/shoot)

• Integration
• Motivation
• Focus

+ Motivation
--- Integration
--- Focus

+ + Motivation
-Integration
- Focus

+ Motivation
+ Integration
- Focus
A good learning game...

<table>
<thead>
<tr>
<th>Computer game</th>
<th>Learning game</th>
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<tr>
<td><strong>Substantivs</strong></td>
<td><strong>Quality &amp; abstraction</strong></td>
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<tr>
<td>• Audiovisual</td>
<td>• Right substantivs</td>
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<td>• Story</td>
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A good learning game...

Games are the future language for training...

Provide immersive, realistic & meaningful environments...

.....in which learners actually apply information to develop knowledge, attitudes and skills.

Trailer Global Conflicts: Latin America
Agenda

1. Introduction: The problem & challenge
2. What is a good learning game?
3. Example: Global Conflicts: Latin America
Overview GC: Latin America

Basic information
- Platform: CD-Rom (Mac/PC).
- Technology: 3D game engine Unity.
- Play time: 6-8 hours.
- Players: Single player.
- Languages: UK, ES, DE, SE, NO, DK & FR.

Primary Target group: Students, 13-19 years
Secondary target group: Gamers, >16 years

Subjects: Citizenship, geography, media & history

Themes: Unstable democracies, border trouble, pollution, exploitation, ethnic differences, debt slavery, developing countries & immigration
# Educational game design

**You**  
Freelance journalist

**Goal**  
Get the best final interview for your article

**Means**
1. Find informants
2. Select strong line of inquiry
3. Get good statements
4. Build arguments
5. Use arguments to get most revealing interview

**Winning**  
Most revealing story
Learning approach

- Based on same approach as Global Conflicts: Palestine

- Kolb’s cycle covered with different teaching forms in the course.

- The teacher is crucial to facilitate a full learning experience.
Qualitative feedback (students)

"It's a really cool way to learn. Teachers should use this” (student1)

"Instead of someone telling you how it is; you get to experience it and work it out” (student2)

"It sticks better when you have to work things out for yourself” (student3)
"It's a great way to learn... Students are active seekers of knowledge" (teacher1)

"We really need something like this. We scream for it because there is so little like it.” (teacher2)

"It brings the conflict much closer. The problem with these conflicts are that students don't feel anything for them, because they are safe and secure here.“(teacher3)
Design lessons

• Consequences are crucial to keep students engage
• Explicitly present learning material
• Keep it simple & relevant for the target group
• Feedback have to be close in time & very explicit to the student
• Building dilemmas w. branching is hard, buggy & costly
• Frame context so target group compare w. right references
Summary

Games are the future language for training... but we need to expand the range beyond edutainment titles to maintain momentum.

A good learning game:
Provide immersive, realistic & meaningful environments...

.....in which learners actually apply information to develop knowledge, attitudes and skills.
Contact details

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