A Serious Heritage Game for Art History: Design and Evaluation of ThIATRO

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Agenda

- Motivation
- Design of ThIATRO
- Evaluation
- Conclusions
Motivation

- Engage players with art history
- Focus on visual exploration of artworks
- Compare and contrast of artworks
Online game that aims at raising the interest in art history and cultural heritage

- Helps students learn art history
- Tangible attributes of cultural heritage
Design of ThIATRO

- 3D game
- Browser based (Unity3d plug-in)
- Puzzle game
Learning Content - Game Levels

- Genres (Tutorial)
- Iconography
- Famous Topics in Art
- Perspective
- Eras of Art
- Lighting and Shading
- Specific Artist (Caravaggio)
Data Source

- Web Gallery of Art (WGA)
  http://www.wga.hu/
- European painting and sculpture from 11th to mid-19th centuries
- Number of artworks: 28,400
The Case of 3D

- Immerse the player into an exhibition by recreating 3D virtual museums
- Raises the curiosity to engage with art and thus creates a persistent idea of art historical concepts in the player’s minds
Making of ...
Making of ...
Making of ...
Making of ...
Design Process

Genre

Core Mechanics

Rules

“creativity”,
“observation”,
“memorization”

Probing the VW:
looking, moving,
investigating,
comparing,
recalling

Fulfill task,
10p correct answer,
-5p wrong answer

Puzzle game
Evaluation

Europagymnasium Baumgartenberg

- 4th grade
- 20 pupils (12 female, 8 male), approx. 14 years old
- Contact person: Mag.a Susanne Schatz, form teacher
- 2 hours arts class at 15 April 2011
Methodology

- Control Group / Experimental Group to get a comparison to prevalent teaching methods

- Checking facts about artists, paintings, years of creation...

- Checking, if ThIATRO changes the way a person perceives art
Aesthetic Response

- How a person feels about a work of art
- How can one best study or measure this response?
- 5 Aesthetic Stages, defined by:

Aesthetic Stages

- **Stage 1:** Viewers are listmakers and storytellers, making simple, concrete, observations
- **Stage 2:** includes the knowledge of the natural world, and the values of their social and moral world
- **Stage 3:** Identify the work as to artist, school, style, time, and provenance
- **Stage 4:** Viewer lets the meaning of the work - its symbols – emerge
- **Stage 5:** Viewers have established a long history of viewing and reflecting about art
**Hypothesis**

- Control Group / Experimental Group, pupils randomly assigned

**Hypothesis:** ThIATRO changes the aesthetic response of a person and allows him/her to perceive art on a deeper level

<table>
<thead>
<tr>
<th>Pre-Tagging</th>
<th>Pre-Questionnaire</th>
<th>Gameplay/Teaching</th>
<th>Post-Tagging</th>
<th>Post-Questionnaire</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

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### Methodology

- **AS1**: simple, concrete, observations and feelings
- **AS2**: using perceptions and knowledge of the natural world, for example naming persons / topics that do not imply art historical knowledge
- **AS3**: Identify school, style, time, provenance, persons, topics, ...

<table>
<thead>
<tr>
<th>Painting 1</th>
<th>AS</th>
<th>Painting 2</th>
<th>AS</th>
<th>Painting 3</th>
<th>AS</th>
<th>Painting 4</th>
<th>AS</th>
<th>Painting 5</th>
<th>AS</th>
<th>Painting 6</th>
<th>AS</th>
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<tbody>
<tr>
<td>Tod</td>
<td>1</td>
<td>sterbende Frau</td>
<td>1</td>
<td>Horror</td>
<td>1</td>
<td>Verkündigung Mariens</td>
<td>3</td>
<td>Fluchtpunkt</td>
<td>3</td>
<td>Barock</td>
<td>3</td>
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<tr>
<td>Wissen</td>
<td>1</td>
<td>Wehmut</td>
<td>1</td>
<td>Blut</td>
<td>1</td>
<td>Religionsmuseum</td>
<td>2</td>
<td>Farbperspektive</td>
<td>3</td>
<td>Hieronymus</td>
<td>3</td>
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<tr>
<td>abgemagerter Mann</td>
<td>1</td>
<td>Verwesung</td>
<td>1</td>
<td>Verwesung</td>
<td>1</td>
<td>Verwesung</td>
<td>1</td>
<td>dunkel</td>
<td>1</td>
<td>abgemagerter Mann</td>
<td>1</td>
</tr>
<tr>
<td>standiges Lernen</td>
<td>2</td>
<td>Mord</td>
<td>1</td>
<td>Mord</td>
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<td>dunkel</td>
<td>1</td>
<td>abgemagerter Mann</td>
<td>1</td>
</tr>
</tbody>
</table>

| Tod | 1,25 | 1,00 | 1,00 | 2,50 | 3,00 | 2,33 |

Result Before: 1,09
Result After: 2,57

avg. pre playing/learning

avg. post playing/learning

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Results – Pre-Tagging

Average Experimental: 1.18
Average Control: 1.29
Results – Post-Tagging

Average Experimental: 2.30
Average Control: 2.32

- AS1
- AS2
- AS3

Control
Experimental
Both approaches changes the aesthetic response of a person and allows him/her to perceive art on a deeper level.

30-minutes playing/teaching too short to change person‘s view on art permanently.
Pre-Questionnaire

Moderately interesting in:

learning games, \( M = 2.75, \text{SD} = 0.85 \)

art history, \( M = 2.65, \text{SD} = 1.18 \)

and visiting museums \( M = 2.70, \text{SD} = 1.13 \)
Post-Questionnaire

- Level of fun

- „I will keep on dealing with art history“

- Sparking interest

<table>
<thead>
<tr>
<th></th>
<th>Exp</th>
<th>Con</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>4.60, SD = 0.52</td>
<td>3.90, SD = 0.74</td>
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<tr>
<td></td>
<td>3.90, SD = 0.57</td>
<td>2.20, SD = 0.79</td>
</tr>
<tr>
<td></td>
<td>3.50, SD = 0.71</td>
<td>3.00, SD = 1.05</td>
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Conclusion

- Exclusively playing is not the solution
- Games do not replace teachers
- The key is to make people learn at home!
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http://www.thiatro.info/