Applying gamification to improve quality of life

Citation for published version (APA):

Document status and date:
Published: 19/03/2018

Document Version:
Publisher’s PDF, also known as Version of Record (includes final page, issue and volume numbers)

Please check the document version of this publication:
- A submitted manuscript is the version of the article upon submission and before peer-review. There can be important differences between the submitted version and the official published version of record. People interested in the research are advised to contact the author for the final version of the publication, or visit the DOI to the publisher’s website.
- The final author version and the galley proof are versions of the publication after peer review.
- The final published version features the final layout of the paper including the volume, issue and page numbers.

Link to publication

General rights
Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal.

If the publication is distributed under the terms of Article 25fa of the Dutch Copyright Act, indicated by the “Taverne” license above, please follow below link for the End User Agreement:
www.tue.nl/taverne

Take down policy
If you believe that this document breaches copyright please contact us at:
openaccess@tue.nl
providing details and we will investigate your claim.

Download date: 22. Aug. 2021
Applying gamification to improve Quality of life

Exploration of the effectiveness of a game that empowers users to improve their quality of life

**Problem investigation**

**Quality of life** is the degree of excellence in the life of a person.

**People**

**Planet**

**Prosperity**

**Tools**

Serious games are games in which education is the primary goal, rather than entertainment.

Gamification is the application of game design elements and principles in non-game contexts.

The municipality of Eindhoven commissioned this research to evaluate the effectiveness of games as a tool to empower people to improve their quality of life.

**Trends**

Urbanization, population growth, climate change, lifestyle diseases (e.g. obesity), increasing gaps are trends that potentially threaten quality of life.

**Challenge:** Empower people to improve their quality of life.

The municipality of Eindhoven aims to offer tools that empower people to improve their quality of life.

**Solution design**

**Goal:** design a game that empowers users to improve perceived health and decrease their ecological footprint.

Perceived health (people) and ecological footprint (planet) are chosen as antecedents of quality of life.

**Solution implementation**

**Target audience**

Anybody who lives or works in the city of Eindhoven.

The marketing campaign has been aimed particularly at government officials of the municipality of Eindhoven and students of Eindhoven university of Technology.

**Sample (n = 16)**

Quasi-experimental research design, including pre- and post-tests for both the experimental group (n = 9) and control group (n = 7).

**Pilot planning**

<table>
<thead>
<tr>
<th>W1</th>
<th>W2</th>
<th>W3</th>
<th>W4</th>
<th>W5</th>
<th>W6</th>
<th>W7</th>
<th>W8</th>
<th>W9</th>
<th>W10</th>
<th>W11</th>
<th>W12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recruit -ment</td>
<td>Pre-test</td>
<td>Challenge 1 Move Consciously</td>
<td>Challenge 2 Green &amp; Smart, Blue &amp; Healthy</td>
<td>Post-test</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Results**

To enhance the game it is advised to simplify the game, approximately 87% of non-value added time that has previously been required to play the game can in the future be made obsolete, e.g. by implementing an automated activity tracker.

Furthermore, it is advised to allow users to review (and “down-vote”) the activities that others have claimed, in order to increase perceived fairness.

Furthermore, it is advised to allow users to review (and “down-vote”) the activities that others have claimed, in order to increase perceived fairness.

**Results**

Compared to the control group, the mobility ecological footprint of experimental subjects increased, instead of decreased. (p < 0.05)

Compared to the control group, bodily functions and social participation of experimental subjects improved. (p < 0.05)

**Solution validation**

**Methodology**

Quantitative analysis using multiple linear regression.

**Results**

Distribution of user activity per type

- Walking / cycling: 80%
- Working-out (physical): 8%
- Social activity: 10%
- "Green" commuting: 2%