DESIGN FEATURES IN GAMES FOR HEALTH

Disciplinary and Interdisciplinary Expert Perspectives

Christina Kelley, Georgia Tech, USA
Lauren Wilcox, Georgia Tech, USA
Wendy Ng, Georgia Tech, USA
Jade Schiffer, Carnegie Mellon University, USA
Jessica Hammer, Carnegie Mellon University, USA

Contact Authors: Lauren Wilcox, Jessica Hammer
wilcox@gatech.edu, hammerj@cs.cmu.edu
Research Questions

How do design features instantiate health concepts?

http://geekwithstyle.ca/Re-Mission 2
Zombies, Run

Physical Activity

Pokemon Go
In Real World

Zombies, Run

Pokemon Go
Zombies, Run

Collect Virtual Objects

Pokemon Go
Run vs. Walk
Zombies, Run

Automatic vs. Skill

Pokemon Go
Research Questions

What counts as a feature in the first place?

http://www.virtuallybetter.com/
Virtual Iraq
Game Corpus

320

health games

Selected from previous publications, prior research databases, searches
Game Selection

16 games selected for study
Game Selection

16 games selected for study

Re-Mission 2: Nanobot’s Revenge, Bronkie the Bronchiasaurus Bubble Rubble, Chicken Farm, Colorfall, Dex: Virtual Pet, Elude, Escape from Diab, Fix Frank, Mindless Eating Challenge, Monster Manor, Packy & Marlon, Rex Ronan: Experimental Surgeon, Snow World, Squire’s Quest II, Virtual Iraq
Study Participants

1. Game Design
2. Health Behavior
3. G4H
Study Participants  $n=18$

Female: $n=11$, Male: $n=7$
Study Participants  $n=18$

1. Game Design  $n=7$
2. Health Behavior  $n=5$
3. G4H  $n=6$
Study Procedure

Individual interaction with **16 games**

Structured and semistructured prompts

- **Exploration**
- **Triading (RGT)**
- **Open Sort + Think Aloud**
Study Procedure

Individual interaction with **16 games**

Structured and semistructured prompts

**Exploration**

**Triading** (RGT)

**Open Sort + Think Aloud**
Triading Analysis

- 270 rounds, 761 instances
- 76 concepts
- 7 high-level themes
Differing Perspectives

1. Game Design
2. Health Behavior
3. G4H
Sensitivity to the **game aspects** of G4H
Sensitivity to the game aspects of G4H

Player as person with autonomy and experiences
Sensitivity to the game aspects of G4H

Player as person with autonomy and experiences

"Why do people play? Why would they keep playing? What makes you stronger? ... Why does the [level] order matter for the player?"

–P2
Sensitivity to the **game aspects** of G4H

Player as person with **autonomy** and **experiences**

Integration of **game mechanics** and **health behavior**
Player *autonomy* in relation to one’s *own health*
Player *autonomy* in relation to one’s *own health*

“Fun” games
Player autonomy in relation to one’s own health

“Fun” games

Game mechanics as representation of health content
The biggest [differentiator] is that game mechanics are representing the disease model.

–P15

Game mechanics as representation of health content
Context and interaction
the fact that she's at level five lets me know, ‘Oh she must have had a chemo day today so she's probably feeling sick and I should reach out,’...[game results could allow her to share this information] without her having to type, ‘I'm sick’

—P1
Context and interaction

Game outcomes and objectives
Context and interaction

Game outcomes and objectives

Game mechanics produce health outcomes
**Integration** of game mechanics and health behavior

Game mechanics as **representation** of health content

Game mechanics **produce** health outcomes
Are people in the field aware of these gaps?

Yes!

Bad health outcomes attributed to gaps
Building interdisciplinary frameworks
Are people in the field aware of these gaps?

No!

Only implicit knowledge
Some surprises (e.g. emotions / social)
Implications

We articulate and deepen implicit knowledge
We can inform framework development with data
We can improve G4H education
... and a move toward defining game features!
THANK YOU

Contact Authors: Lauren Wilcox, Jessica Hammer
wilcox@gatech.edu, hammerj@cs.cmu.edu