The Explorer and the Mystery of the Diamond Scarab

Rob Willems
Hanze University Groningen, Principal Blue (the Netherlands)
Bio

• Projectmanager GAMBAS project (Principal Blue)
• Lecturer Hanze University Groningen
• Owner InnovAid
• Expertise: usability, game design and experience, serious games developing countries
How the project started

• A game for blind children?

• NO

• We want a game for all!
The project

Game Development

Facilitate Creative Design Process

Visually impaired and full sighted children

Project Stakeholder Locomotion & Vision Experts

MAD Multimedia

TNO innovation for life

Visio

principal blue

Project Management
Other partners

Little Chicken
Game Company

Soundbase

The Hague University of Applied Sciences

Hanze University Groningen
Applied Sciences
The Goals

• Game for blind and sighted children

• Play on an equal basis

• Improve locomotion skills
Locomotion (balance) test

- Ogen open
- Ogen dicht

Standaard vs Lichamelijke opvoeding

Tandem stand: (15 seconden)
Challenges

• There are no adventure games where blind and sighted children can play on an equal basis

• Blind children can play special audio games, but other (co-located) children cannot follow the game

• There are not many exercises for blind children to train their locomotion skills in an entertaining way
Improvement of balance: the advantages of the Nintendo Wii

Motivation is the motor for success!!
But ..... 

How to find the game requirements for visually impaired *and* fullsighted children?
How to design & evaluate this game?
NOS Jeugdjournaal, March 2011
(National Television, News for children)

YouTube: http://www.youtube.com/watch?v=l5DEepZqdVs&feature=player_embedded
Approach

• Designing together: collaborative design (co-design)

• Blind & sighted children became part of a multidisciplinary team (4 blind and 4 sighted)
Co-creation steps

- create team
  - create awareness
  - define shared goal

- create ideas
  - experience with new technology
  - idea creation

- evaluate & select
  - evaluate and combine ideas
  - look for mutual ideas

- build & iterate
  - experience concept
  - evaluate & optimize

shared concepts
- torch & sonar
- obstacles & monsters
- collect objects
- friend who helps
Create team

• Analyze relationship with the subject:
  • Create awareness of their fun/interesting gaming experiences and preferences.

• Create shared goals:
  • experience adventures
  • being smart
  • learn new things
  • makes you laugh
Create ideas

• Experience with new technology
  – play Wii and keep a journal:
    • what they like/dislike
    • how to make the Wii more suitable

• Idea creation - assisted
  – role playing adventure
  – creating world with Lego bricks and toy animals
  – user walk through of the interaction (Wii Balance Board & Wii-mote)
Shared concepts

Create a list of mutual elements:

- Adventure in dark world
- Collect objects
- Sound of walls
- Torch & sonar
- Gateway to different level
- Obstacles & monsters
- Information about Egypt
- Friend/ghost who helps you

Functional requirements
Build and iterate

• Game was simulated in a gym:
  – “experience” the basic elements of the game concept
  – audio feedback: musical instruments or voice
  – sighted children had limited vision glasses

• Difficult navigation situations were “solved” in situ
Prototype evaluation

1. Navigation and orientation
   1. First focus: navigation, orientation, audio feedback
   2. Equal challenge for the blind and sighted children

2. Fun and game play
   1. Second focus: design and evaluating game fun experience and the game play
   2. Introduction of mini challenges:
      1. Enrich the game experience
      2. Provide specific locomotion exercises
Evaluation of navigation

• Children prefer rotation of the viewing perspective, however:
  – blind children tend to lose their orientation
  – less possibilities to train the children’s balance.

• Faster speed for walking backwards

• Feedback about the direction of your own movements.
The game
10 levels
Conclusions

• It is possible to offer an equal game challenge for blind and sighted children
  Smart combination of audio & visual & tactile feedback

• Co-design works!
  – valuable method to develop applications for children with visual impairment
  – many valuable insights and experiences for the developers
  – creative input from children throughout the process
  – a lot of the final solutions were created by the children

• Very rewarding that, through listening, blind children can give feedback on other players!
To do

Improvement of locomotion needs to be measured

A method was created for longitudinal testing of the improvement of locomotion skills. This will be implemented in schools for visually impaired children.
Co-creating a Wii-game for the blind and sighted

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ABSTRACT

In the GAMES for the Blind And Sighted project (GAMBAS) the Wii-game "The Explorer and the Mystery of the Diamond Scarab" was developed. Apart from the fun of playing with other children, the blind children benefit from playing the game because it helps them to improve their balance and locomotion skills. This Wii-game can be played both by blind and sighted children on an equal basis in the age between 6 and 12 years. In this paper we

an equal basis is very difficult.

There are examples of computer games designed to be accessible for both visually impaired and mainstream gamers. MIT developed AudiOdyssey for the Nintendo Wii [2]. Another example is a “Battleship” game that can be played using separate interfaces for sighted people and blind people [3].

Blind people do sometimes manage to play some of the regular computer games or even Wii games [4]. Recently ViBowling [5]
Awards

- Oogfonds Innovatieprijs 2011
- Creative City Challenge 2011
- e-virtuoses Award 'Best Project' 2012
- Game Expo Lyon, 2012
- Dutch Game Award, 2012
The Seventh Annual Games for Health Conference
Port of Games Beyond Entertainment Week

The 7th Annual Games for Health Conference is gearing up! On May 18-19 join hundreds of game developers, health professionals, and leading researchers to discover, brainstorm, and debate how videogame and videogames technologies can work to improve health & healthcare.

This is the largest Games for Health to date with a great opening keynote from Dr. Martin Seligman, Director of the Positive Psychology Center at the University of Pennsylvania. His opening talk “Positive Psychology=Positive Computing=Positive Videogames” is one of over 60 talks planned for the three day event.

This year marks several changes and additions to the program we’re excited to highlight:

LUDICA MEDICA DAY
Our medical modeling, simulation & learning track is being transitioned to a standalone preconference day titled Ludica Medica. As a standalone event we will be looking to expand its contributions to the larger medical modeling & simulation space and improve its coordination with our serious games day which includes lots of discussion about simulation and learning in other non-health sectors.

NEW NUTRITION TRACK
We feel the opportunity to utilize games to help improve issues related to nutrition and food is still not fully realized. We’re investing our conference resources towards improving this area within the games for health field.

REG T HERE T OAY!!!

Our Next Event...

The 7th Annual Games for Health Conference is coming May 17-19, 2011. You can submit your talk, roundtable, or demo online here.

Registration is now open. There is extra special early bird pricing until end of 2010!

Read more about the conference and its expanded format here.
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<th>Time</th>
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<tr>
<td>8:00:00</td>
<td>Breakfast and Networking</td>
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<tr>
<td>9:00:00</td>
<td><strong>FEATURED TALK!</strong></td>
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<td><em>A Wii Game for Players with Visual Impairments</em></td>
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<td><strong>Building Accessible Controls : Hacks to Hardware</strong></td>
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<td>A blind accessible game for iPhone</td>
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<td><strong>The BlastBay Game Toolkit : A Powerful Audio Only Game SDK</strong></td>
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Info and order at:
http://www.explorergame.com/?page=home&lang=en
Thank you!

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