Research-based Design: Case of an Academic E-Reader Design

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CONTENT

- Introduction and Design Concept
- Literature Review
- Learning Object
- Possible Examples of Architecture and Screen Design
- Design Process
- Concept as Hypothesis
- Critiques
Introduction and Design Concept

- **Design Concept**: E-reader, a mobile app, aims to support academic reading and learning

- **Design Challenges**: the lack of motivation affordances for academic reading, interaction design challenges and the limited application of e-reader in collaborative learning.

- **Design Object**: enhance reading comprehension and improve reading competence.

- **Major Features**: multimodal presentation of texts, exercises with rewarded points and incentives, and collaborative learning platform

- **Target Users**: students in university and college

- **Design Process**: two prototypes with different fidelity (Low-Fidelity, Hi-Fidelity)
  - designer, educational experts and technology developers
  - two workshops
Literature Review

- Problematic Features of E-Reader (Thayer et al. 2011)
- Motivation & Engagement for Reading (Wright et al. 2013)
- Multimodality (Kalantzis and Cope, 2012)
- Gamification (Deterding et al. 2011)
- Collaborative Learning (Dillenbourg et al. 2009; Timmis, 2011)
Learning Brief

Learning objects are to:

- Improve target users’ engagement and motivation towards academic read
- Enhance target users’ comprehension
Possible Examples of Architecture and Screen Design

Screen Design
Possible Examples of Architecture and Screen Design

- Screen Shots

The Home Page of E-reader
Possible Examples of Architecture and Screen Design

- Screen Shots

Multimodal Presentation of the Reading Texts
Possible Examples of Architecture and Screen Design

- Screen Shots

“Gamified” Exercises
Possible Examples of Architecture and Screen Design

- Screen Shots

The Personal Forum of E-reader
Design Process

- Theoretical Framework of design process

Research-based design process (Adapt from Leinonen et al. 2008)
Design Process

- Concept clarification and validation
Design Process

- Concept Development and Refinement

- Learning Brief
  - Conceptual Framework of the product
  - Lo-Fi Mock Up
  - Concept Workshop 1
  - Assessment & Reflection
  - Hi-Fi Mock Up
  - Concept Workshop 2
  - Assessment & Reflection

- Aims
  - Explore the recognizable of the interface
  - Explore the interaction
  - Explore whether learning happened during the using process
  - Explore the parts lost but related to learning
  - Data Collection: Observation, Interview

- Aims
  - Explore the practicability of the eReader
  - Explore the representational effect of the interface
  - Investigate the learning effects of users
  - Investigate the aspects needed further improvement
  - Data Collection: Observation, Discussion, Interview

- Learning Context
  - School & Home
  - Preferable spaces

- Target Users
  - Masters & PhDs
  - Adolescents & Adults
  - Elders

- Learning Objectives
  - Critical thinking skills
  - Synthesis skills
  - Self-learning abilities

- Operational Procedure
  - Diagram of the “Wrist-Watch E-Reader”
Design Process

- Concept as hypothesis

Design team:
- Experts of Literature Practices
- Software developers

Design process:
- Design Plan / schedule
- Budget
- Make the Hi-Fi mock up physical

- Pilot Testing
  - Small-scale
  - Usability
  - Practicality

<table>
<thead>
<tr>
<th>Design the e-Reader</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pilot Testing</td>
</tr>
<tr>
<td>Testing the Design</td>
</tr>
<tr>
<td>Final Content</td>
</tr>
</tbody>
</table>
Critiques

- limits
- Contributions
Thank you for your listening!