People in Books: Using a FlashCam to Become Part of an Interactive Book for Connected Reading

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Outline

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Introduction

• Maintain relationships
• Communication with children
• the idea from?
• Explore how to use technology
• Interactive electronic children’s books
  • pass-back effect
• focus on the social interactivity of reading
• focus on character voices, play acting, and play
People in Books

• Prototype: reading and open-ended play
  • young children (3-5) \ remote family members

• Dialogic reading practices → Interactive experience

• Minimizing the feeling of distance

• Storybooks: segmented and inserted

• prior experiences designing
  • Togetherness \ Encourage \ Play \ Fit
System Description

• UI minimizes distractions

• Live video avatars
  • contextual locations \ scaled appropriately

• Layers: foreground, background, video

• Interaction through video
Designing Content for People in Books

• Selected & manually modified

• Not every storybook works well

• Location based story
Technical Implementation

- Reading experience • mobile devices → physical size & computational limits

- FlashCam • in motion • close distances

- Video Conferencing Pipeline • Compatible (Nokia N900 phone, Google's browser-based video chat client)

- ARGB color space VS. H.264 video codec • green background & later chroma key

- Front End User Interface • UI using Qt Quick with QML • Ubuntu 9.10
User study

• Evaluate system’s influence
  • dialogic reading and feelings of togetherness

• Prototype control system: Readeo.com

• Controlled lab based study
Methodology

• Families(12) with children(3-5)
• The prior video conferencing
  • grandparents or other close relatives
• None of the families
  • Read a book over video conferencing
• Each session split in to two parts
  • People In Books & control
• Two books
  • Where the Wild Things Are  
  • We’re Going on a Bear Hunt
• Randomly assigned conditions
Methodology

- Prototype
- 15.4 inch laptop screen & 23 inch LCD monitor
- Mirror
- Questionnaire & Interview
Findings

• Closeness to remote participants
  • togetherness
  • touch inside
  • highlight shared & proximal experience
  • In the control system there wasn’t as much evidence

• Closeness to characters
  • closeness to characters
  • more interaction with the other characters
  • try to communicate
Findings

• Play Acting In the Story
  • different settings or locations
  • pretend play
  • more acting
  • limit children

• Play Beyond the Story
  • find their favorite page
  • hide & seek

• Engagement
  • hard to keep children engaged
  • hold the kids’ interest
  • similar reading times

• Problems with Field of View
  • seeing the children
Discussion

• Increasing a sense of togetherness
  • more active engagement with book content
  • stay outside of the field
  • children as “small heads”
  • emotional connections

• Changes in reading practices
  • words on the page
  • dialogic reading: asking & answer
  • drastically increased dialogic reading
  • increased dramatic presentation & open play
  • engage parents in the experience

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<thead>
<tr>
<th></th>
<th>Video Conferencing</th>
<th>Control System</th>
<th>People in Books</th>
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<tr>
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Discussion

• Changes in reading practices
  • the way children responded to the stories
  • empathy for the characters
  • mouse cursor: highlight important words & point out
  • focused on being their own characters
  • different reading styles & different levels of control

• Fitting in with Existing Reading Rituals
  • stories as a “calming ritual”
  • create high energy
  • different types and styles of reading
  • design reading
Future work

• improve immersive experiences
• the lack of vision → raw video
• larger images \ zoom in on certain areas
• more direct way → users silhouettes
• longitudinal studies: fit & change reading behavior
• the living room: large television screen + depth camera remote play?
• 3D book scene
• different classes \ collaborate together
Conclusion

• a new type of reading
• read books together
• more
  • active experience
  • theatrical reading
  • encourage pre-literacy activities
• dialogic and educational reading practices
  • be creative and imaginative
• provide a playful shared point of entry
Thank you for listening!