

Family Story Play: Reading with Young Children (and Elmo) over a Distance. Raffle, et al. CHI. 2010.

What are the core research questions addressed by the work?

- How to promote distance communication and active learning engagement in children?

What motivates the work?

- Past evidence suggesting that young children and long distance grandparents often have the most time and desire to communicate, but have the most difficulty using today's tools

How does the work understand the usage, capabilities, and limitations of paper?

- Reading (or being read to) remains a constant in most young children's lives
- Physical page turning as a typical reading pattern
- Low-proficiency technology suitable for young children & the elderly
- Technology provides better support for distance communication and encouraging engagement with children

What is the target application domain of the work?

- Early Childhood Education
- Parenting

What are some proposed extensions to paper proposed by the work?

- Enable synchronous reading between a grandparent and child
 - Ensure both users are aware of the current page
 - Instructions to support the interaction
 - Enable face-to-face remote interaction

How are the proposed extensions implemented?

- Custom tangible interface that houses a paper book, two touch-screen Linux internet tablets, page sensing hardware
 - A paper book is placed in the book reader and its ID and current page are sensed by electronics housed in the frame
 - Two linux tablets are connected via USB to the page sensors, and to each other over Bluetooth, and present a two part graphical interface to the child
 - Left: Video content of Elmo, software agent who can dynamically be accessed according to the software program
 - Content-aware dialog prompts
 - Right: Custom GUI video conferencing application

What findings have been obtained from either the implementation process or an evaluation of the proposed system?

- With the system, the call time and quality was extended
 - Encouraged more engagement
- Support of long-distance communication for families with very young children
- Support for long-distance family members to read with young children
- Providing a "shared context" for long-distance family reading and interaction

- Important to note that one discussed point in the results is that all children reacted positively to the fact that the book was in front of them and that they could flip through the pages
 - Children preferred the integrated system and seem to respond to the physicality of the book
- A few stated limitations:
 - Pages frequently asynchronous, which disrupts the reading experience
 - Integrating a digital avatar (Elmo) was distracting