

Mobile Communication for All of Us: Progress Report on a Design-Through-Use Technological Probe Study

Melissa Dawe, Center for Lifelong Learning and Design
Poster Submission, Coleman Institute Conference 2006

This poster describes my on-going dissertation work, which is a user-centered design study of a mobile communication device (technically a PDA-based cell phone) for individuals with cognitive disabilities. This research fits into this year's theme of the Coleman Institute Conference, "Cognitive Disability and Technology," as it employs innovative methods in software design, which empower end-users to be the designers of their own technologies, in the development of a cognitive technology to support mobile communication.

This project is one of a suite of projects in the Cognitive Levers Research Project (Clever) (<http://13d.cs.colorado.edu/clever/>) and is a collaboration with AbleLink Technologies (<http://www.ablelinktech.com>). The overall goal of this project is to design a customized mobile communication system for individuals with cognitive disabilities, by working closely with individual families and evolving a customized communication system through use. A secondary goal is to understand the requirements for a "metadesign architecture" (designing a design environment) to support end-user customization. We recognize that individuals with cognitive disabilities often have unique needs and abilities, and a mobile communication system will need to be customized by non-technical caregivers to create a good fit for each individual.

This research incorporates ethnographic methods in the design process to gain an in-depth, nuanced understanding of users' tasks and their social context. We began with a formative interview study with families with a son or daughter with cognitive disabilities. The interview study found that remote communication (e.g. through mobile phones) has the potential to play a key role in safety, increased independence, and social connectedness.

We are currently conducting a "technological probe" study with individual families, in which the family member with cognitive disabilities uses a custom designed mobile communication system for a period of 8 weeks. During this period the researcher meets frequently with the family and discusses breakdowns, improvements, and design ideas with the family. In this way, the family is able to reflect on the experience of use, and co-design modifications to the system with the researcher.

This research brings insight into the role of remote communication in the caregiver-client relationship; uncovers usability challenges of a mobile PDA platform for individuals with cognitive disabilities; and increases our understanding of the customization requirements for a PDA user interface and the processes needed to support metadesign.