

NiCEBook: Supporting Natural Note Taking. Brandl, et al. CHI. 2010.

What are the core research questions addressed by the work?

- How do characteristics of note taking with paper notebooks affect the design of combined paper and digital solutions?
- How to extend and improve physical note taking with a digital representation?

What motivates the work?

- Previous work has shown that paper can be used as an interface for digital systems in various forms; however, to support note taking in its entirety, a profound exploration of the activity itself is necessary
- An enhanced note-taking solution must be carefully designed in order to preserve the quality of a paper notebook
- There are currently shortcomings in available augmented notetaking technology that have prevented their widespread adoption
 - There is a disconnect between current systems and how people actually take notes

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

- We still deal with paper in our daily work environments. Paper is still preferred because it facilitates highly specialized cognitive and social processes.
- Still a challenge for developers to reproduce or exceed the simplicity of taking notes on paper with a digital system
 - High expectations
- Note taking
 - Notebooks, in contrast to single sheets of paper, sticky notes, or whiteboards, provide a series of entries created over an extended period of time
 - Have a more complex structure and history than single notes requiring strategies for organization and retrieval of information
 - Providing limited restrictions to its organization or contents, personal notebooks are very flexible and can be used for different purposes simultaneously
 - Notebooks provide instruments for multiple types of mediation in that they allow users to articulate, record, and reflect on ideas as well as organize their own working process
 - Notebooks often used to record information for future usage
- From field study
 - Quality of paper: Affordances of paper stated as criterion for using traditional paper for taking notes instead of digital device use
 - Structuring notes: Common task of keeping notes organized, use of notebook guided strategy
 - Marking notes: Personalized strategies
 - Re-using notes: Collected notes for archiving and documentation reasons
 - Limitations: There is a user need to share and exchange notes between several people, to store and search notes like digital files

What is the target application domain of the work?

- Note taking

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

- Combine note taking with enhanced structuring and sharing functionality while preserving the quality and simplicity of writing in a paper notebook
 - Digitization in the background
 - Tagging system for structuring
 - Tag by categories, topics, and dog ears
 - Searching
 - Transferring of notes to other applications

How are the proposed extensions implemented?

- Anoto pen and paper

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

- Prototype combines analogue quality of note-taking on paper with digital capabilities of structuring and reusing notes. Supports organizing notes through multiple tagging options, including marking of whole pages with dog-ears. Tagging system found to be more accurate than competing systems.