

Kristy Streefkerk
HCID Capstone 05/06

Proposal Approval

Person	Signature	Date
Primary Adviser / Program Director <i>Erik Stolterman</i>		
Capstone Instructor / Administrator <i>Marty Siegel</i>		
Graduate Records <i>Linda Hostetter</i>		

HSC Approval

This message is to confirm that Kristy Streefkerk completed the Indiana University Human Subjects Protection Test (test ID: 1099438328) on 02 November 2004 at 6:32 PM.

STUDENT: Kristy Streefkerk

ADVISOR: Erik Stolterman

PROJECT: A 'child-centered' approach to PDA interfaces

TARGET GROUP: Children between the ages grades of 1 – 5

CAPSTONE WIKI: <http://www.kristystreefkerk.com/wiki>

PROBLEM SPACE:

As technology continuously becomes more and more prevalent in everyday lives, and the importance of being able to use and adapt to technology increases, it continuously becomes more important to introduce children to technology just like we introduce them to other learning spaces such as reading or math. However, as in any other discipline the needs that children have when it comes to technology are widely different to those of high school students, college students and adults.

Over the years not only has technology become more prevalent, it has also shrunk in size; cell phone, PDAs and hand-held gaming devices are just a few examples of these technologies. These devices all have the ability to leverage knowledge, sharing and communication within any demographic, yet most of the interfaces designed for cell phone and PDA technologies generally tend to lead towards the needs of busy professionals and college students.

The challenge of designing an interface on a screen whose real-estate is approximately 320px by 320px, accompanied with the challenge of designing a useful interface tailored for children hasn't been successfully harnessed and the power that the interface could offer from an educational and social standpoint could be limitless.

HUMAN CENTERED DESIGN ISSUES

The following are some early questions and findings from some initial literature reviews.

- What makes an interface child-friendly?
Is it the look and feel of the interface or the tool that the child uses to interact with the system?
- How can a PDA be used to leverage knowledge, sharing and communication between children?
Who should the children be communicating with? Should it be an interface designed for child to child communication, child to parent?
Child to teacher?

In order to address the needs of children these and other questions need to be thoroughly addressed and researched. In order to do this I plan on

conducting various ethnographic observations (in both a classroom environment and a play environment) to see how children interact with the different technologies that already exist in their environments and also how they interact with non technical objects (such as note taking, communicating and classroom interaction).

After the preliminary research phase I hope to narrow down the scope in order to successfully design a whole or part of an interface that children can go through a series of user tests on in order to determine the strengths and weaknesses of the design.

PRELIMINARY PLAN

Below is my preliminary plan of how I will accomplish the needed research and deliverables to complete a successful capstone project:

PRELIMINARY RESEARCH & LIT REVIEW

September 1 - November 15, 2005

Start the process of collection a variety of literature on the topics of; children, education, technology, PDA, hand held devices and any other topics that may come out of this research. I will also start a collection of different technologies and toys that children use on a regular basis; this will help me figure out different interfaces and tools that they enjoy using in order to gain a better understanding for my design.

ETHNOGRAPHIC RESEARCH

November 1 - December 17, 2005

For my ethnographic research I would like to spend time going into school classrooms and observing what kind of tools teachers use, what kind of technologies (if any) the students use), how the students interact and work, and how the day-to-day processes of the class work. Also I would like to observe individuals at play and also groups at play, in various environments; at the computer, game systems, puzzles etc.

PROTOTYPING

December 17 - March 31, 2005

I would like to come out of the research phase with various different concepts, after narrowing down the concepts that I feel are most useful, realistic and relevant, I would like to create some prototypes (depending on the context that I am developing; an application, interface, or guidelines) and use both hi and lo-fidelity prototyping techniques. During this time it would also be a good goal to submit a 'work in progress' to a conference such as CHI 2006.

USER TESTING

February 1- March 31, 2005

Once working prototypes (paper or media) have been developed, and HSC approval has been gained, I will run them through a series of user tests using children as my subjects. If the prototype cannot be emulated using a PDA then as an alternative a laptop or tablet will be used as long as the same input (keyboard, touch, stylus, etc.) can be replicated.

PAPER, POSTER, AND WEBSITE

March 15 - April 20, 2005

Complete the paper, according to the journal guidelines that I select, and present the project in a tasteful and appropriate fashion on a website.