Including Children with Disabilities in the Design Process

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Abstract

This workshop aims to bring together researchers and designers to exchange experiences with (participatory) design techniques for children with disabilities that may hinder communication, such as hearing aids, autism or Down's syndrome. More specifically, the main aim is to identify commonalities and differences in current practices and discuss how to apply and adapt participatory design techniques for the different target groups. This workshop will he held jointly with the workshop on "*Values and Stances in Interaction Design with Children with Disabilities*".

Author Keywords

Tools & techniques, User involvement, Participatory design

ACM Classification Keywords

H5.m. Information interfaces and presentation: Miscellaneous.

General Terms

Design

Introduction

In 1999, Druin developed an approach for creating technology for children, called Cooperative Inquiry, which is grounded in theories such as cooperative design, participatory design and contextual inquiry [1]. The approach is based upon the belief that in order to understand what is needed when developing new technologies, partnering and building a relationship with the users is required. With this approach, Druin

attempted to capture the complexity and possibly "messy" real-life situations that occur in an environment, such as a classroom. Furthermore, Druin suggests that a vast amount of information can be obtained quickly from activities and artefacts that are part of a user's context. Understanding such activities and artefacts is crucial in researching and developing new technology. Finally, when involving children in a design process, Druin has defined four different roles that can be assigned to them: user, tester, informant and design partner [2]. Guha, Druin and Fails developed - based on the previous work done by Druin - an inclusionary model for designing for and with children with special needs [3]. This model consists of three layers: Druin's Level of Involvement, Nature and Severity of the Disability and Availability and Intensity of Support. At the first level, the model always sets out to involve children as design partners. However, at the second level, children's involvement as design partners might be impossible due to the nature of their disability. Therefore, at the third layer, support should be provided to allow the children to participate as design partners; overcoming any difficulties caused by their disability. Käarnäa et al. [4] developed a framework for developing technology for children with special needs called Children In the Centre - or CIC -— framework. The framework consists of the following five components: 1) Children's interests, strengths and needs; 2) Partnership between children, families, tutors and researchers; 3) Child-centred technologies; 4) Flexible everyday environments; 5) Participation and inclusion to the society. Based on this framework, Käarnäa et al. ran several workshops with children and their parents; these workshops were called "technology clubs" and tried to take advantage of a range of various senses, including visual, auditory and kinaesthetic-

tactile senses. The CIC framework places the child's interests, strengths and needs at the core of the design process; this is essentially done to challenge the traditional ways of seeing these children as objects of interventions or users of technology, which traditionally places the problems- rather than the children's interests and strengths- in the centre. Moreover, Käarnäa et al. emphasize the importance of including the parents as they know their children best and their relationship and knowledge of their children and their interests is vital for these children to successfully take part in a participation process. Käarnäa et al. state that designing for children with special needs and organizing these types of workshops is challenging, but that these challenges can be dealt with by: 1) having the same personnel working with the same children and their families and preparing children to work with different people alone and in pairs, 2) making small changes constantly to the tools used, 3) using pictorial aids such as personally structured maps of the activities, and 4) developing tools with a clear structure.

The main goal of this workshop is to extract useful techniques and principles in order to set up recommendations for doing (participatory) design with and for children with disabilities. The format of the workshop is similar to that of several previous workshops organized by one of the current organizers at the Participatory Design conference, INTERACT, and CHI. This format has been shown to be successful for creating active participation and collaboration that goes beyond the presentation of papers.

Workshop

Workshop goals

This workshop aims to 1) bring together people who are active in the topic of the workshop to exchange ideas and experiences regarding design for and with children with physical, intellectual or developmental disabilities; and 2) identify some recommendations for involving children with disabilities in the design process.

Issues to be addressed

The focus of the workshop is on children with physical, intellectual or developmental disabilities. The main issues are when and how to involve such children in the process of designing new products or applications. More specifically, participatory design techniques and the workshop participants' experiences with adjusting such techniques are discussed. Yet, other aspects that are relevant to involving children with intellectual and/or developmental disabilities are discussed as well. Examples of such aspects are practical and ethical issues (e.g. recruitment, incentives, informed consent), and ways to involve all relevant stakeholders (e.g., formal and informal caregivers, teachers) while always keeping the authentic experiences of the children.

Target participants

Researchers and designers working (or planning to work) on design-oriented project(s) with children with physical, intellectual or developmental disabilities are invited to participate. Especially researchers and designers who have adjusted existing techniques to understand and involve these children are encouraged to apply. A maximum of 20 people can participate.

Workshop preparation

We ask all participants to submit a 2-4 page paper (using the ACM SIG Proceedings Template) which includes the following information (Note: since this workshop is held jointly with the workshop on "*Values and Stances in Interaction Design with Children with Disabilities*", only **one** submission is required for both workshops).

- A description of the context of their work, including overall goals, target groups etc.
- A description of one or more design techniques that they have used or plan to use.
- Brief reflective statements on their work from the following three perspectives:
    - Goals & Objectives (What has determined the definition of outcomes? Who was making those decisions and what were the main drivers? Have those goals changed over the course of the work and why?)
    - Methods & Participation (Which methodology was applied, and on what grounds? At what level were children with disabilities or other stakeholders involved, and what was the quality of this involvement? What or who determined the relationship between researchers, designers, children and stakeholders?)
    - Evaluation & Knowledge (How were outcomes evaluated and analysed? How were contributions to knowledge identified and constructed?)
- Participants' expectations of the workshop and the specific topics they would like to discuss.

Setup of the workshop

This workshop has a creative, generative character and refrains from using a standard workshop setup of presentations and discussions. Instead, sharing best practices and brainstorms about participatory design techniques for children with intellectual or developmental disabilities are at the core of all activities. The workshop consists of three parts:

Introduction – 60 minutes
Participants briefly introduce themselves based on the description of their target group and the technique they have used or are planning to use. The goal of this part is mainly to get to know each other and to create an informal atmosphere to share best practices and common problems.

Technique mapping – 90 minutes
In small groups, participants discuss their experiences. Each participant in the group discusses one technique they have used or are planning with a specific target group and the whole group discusses the suitability of this technique and whether it should be adapted for this specific target group and what the practical considerations can be. When all group members have discussed their techniques and the issues that can arise, the group extracts four 'take home messages' from the discussion.

Clustering – 90 minutes
The participants present the take home messages for each group and try to determine recurring themes to be presented in the post-workshop poster.

Post-workshop follow-up

After the workshop, the organizers will arrange a poster for presentation at the main conference poster session. We will also aim for publishing a workshop report in the SIGCHI Bulletin or a similar publication. Both the report and the poster will be published on the workshop website as well. Depending on the interest from the participants, we will try to arrange another special issue in a journal suitable for the workshop topic, such as for instance the International Journal of Child-Computer Interaction, perhaps in cooperation with an extended consortium. Another possibility could be a joint article based on the discussions during the workshop and on the different position papers. It is our intention to use the workshop website for continued work and events, and we will try to keep close contact with interested workshop participants.

References

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