Designing for Nomadic Play: A case study of participatory design with children

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ABSTRACT

This poster presents the results from an empirical probe study trying to engage children meaningfully in the design process of systems and artifacts that support nomadic lifestyle. Based on observational studies and interviews with children of different ages (5-15 years), we conducted a participatory design workshop cycle where children were encouraged to envision and virtually play with not-yet-invented future technology. Findings include qualitative characterizations of children's activities (e.g. 'play' culture, use of digital media, age and gender differences, relation to space) and methodological considerations (e.g. the role of context and structure for different age groups, workshop formats, expenditure of time).

Keywords

Children, mobility, play culture, participatory design

INTRODUCTION

Children's lives in the industrialized world today can be characterized as 'nomadic'. Throughout the day, a child typically moves between several settings, e.g. school, after-school, friends' homes, club house, sports club and home. Children's lives are also heavily influenced by digital media artifacts and services[3]. Some of these services are mobile or available in different settings, and they are used by the children as cross-boundary phenomena to stage their personal lives and to create coherence between settings. Our research activities seek to explore and develop digital concepts and artifacts supporting children's playing, learning and social interaction. We want to engage children meaningfully in the design process, but at the same time strike a good balance between child-driven and designer-driven development. There were two objectives of the present study: First, we wanted to investigate 1) what children consider to be 'play', 2) where children play, and 3) to what degree children are using digital media. Second, we wanted to develop a workshop format for participatory design with children targeting nomadic play.

METHOD

Our empirical study had two parts: a combined observational and interview study, and a series of participatory design workshops. In the first study, we visited 3 groups of children in their own daytime environment (kindergarten and school) and documented it with video cameras. The groups consisted of 3-4 children – preschoolers (5 years old), 3rd graders (9 years) and 9th graders (15 years). We also interviewed two pedagogues, one from the kindergarten and one from the after-school program.

The design part consisted of four phases: 1) a small pre-workshop to get some initial experience with the format, 2) an analytical phase where we analyzed the workshop and made modifications to the format, 3) a larger workshop, and 4) an evaluation. For the pre-workshop, we invited two groups of children of different ages (3 from 3rd grade (9 years) and 3 from 6th grade (12 years)) to our lab facilities to have a full day participatory design workshop with each group. Documentation was accomplished by video cameras and posters displaying the ideas and artifacts created during the design workshop. Control of the video camera shifted between the participants, thus the children would interview each other, explaining the ideas during the design process. At the end of the day, they produced a short (2 minute) video clip in the format of a TV news spot presenting the best design idea/product, using a poster and acting out a scenario. Based on the experiences from the first workshop, we modified the procedure a bit and the content of the workshop kit before inviting more children. For this workshop, we had three groups working separately. The sample of children was chosen to spot gender-specific approaches to play and social interaction, and to have these differences explicated in the evaluation of the design workshop. After the last workshop, we evaluated the process from the recorded video and from the artifacts produced during the design workshops. The interviews and observations, the two design workshops, and the final evaluations were conducted within one month, and we enjoyed working with 22 children of different ages and gender.

FINDINGS

Interviews and observational studies

What is play? To the five-year-olds, play seems like a purely good thing, and they were very concrete in their conceptions of play. The nine-year-olds were much more ambiguous as to whether what they were doing together during after-school could actually be called 'play'. There were marked gender differences in play preferences in all groups. The 15-year-olds, two girls and two boys, did, as one would expect, not see themselves as 'playing', at least not in a childish sense. The general impression is that 'play' and 'playful activities' are perceived as terms for *small* children's activities, i.e. below the age of nine, with some individual variance. Although we as adults and researchers may have a broader and more flexible conception of what is covered by the term 'play', the children have a more narrow definition. Furthermore, the older children (i.e. ages 9 and 15) identify themselves in relation to this definition. This is important to bear in mind when talking and interacting with children about play and playful activities. For the teenagers, the word 'play' is simply unacceptable for describing their activities. The risk of being singled out as childish is too high as they are on the brink of adulthood. As interaction designers and researchers have lately been exploring the playful aspects of future technologies[1] this group of users might enjoy what we would call playful technologies, but they would probably not want to call it 'play'.

Where do children play? The physical surroundings are closely related to the possible activities that the children may exhibit, and it is not obvious what constitutes a 'good' place for play. For example, the bathroom is in fact one very popular location for kindergarten children to play. Another example is the area just outside the playground, between two types of barriers surrounding the institution grounds. Although the space between the two barriers is not really a part of the playground, the children can play all sorts of little games and pretend play out there while 'hiding' from the adults. We also experienced how the smaller children are really 'big' if they are allowed (by the older children) to be with the older ones on the far side of the fence. It is a privilege. In this way, there is great significance attached to the place itself. The 15-year-olds are allowed to leave the school grounds during longer breaks. Many of them hang out at local supermarket, but they but use a 'less authorized' route, thereby cutting short the way to the supermarket. In the same way as the children in kindergarten, they know it is a privilege to be allowed to go there, and they enjoy it.

What is the impact of digital media on social interaction? For the five-year-olds, the influence of digital media was primarily in the form of computer games. The 3rd graders were already experienced players of computer games and some of them also had experience using the internet to search for information. A few used instant messaging. Mobile phones were very popular at this age (9 years) as the majority of the children had acquired their first mobile. To the 15-year-olds, their mobile phone was simply a necessity for their social life, and they used instant messaging as well as online communities extensively. There was indeed a huge impact of digital media on social interaction, speeding up at around 3rd grade.

Participatory design workshops

The children's age heavily influences the level of abstraction designers can expect from the children. Preschoolers should be approached mainly with observational methods; the 3rd graders have a hard time working with abstract notions like 'what-if' and trying to understand future context. In the case of the 6th graders, we found that, although difficult, working with 'what-if' scenarios is possible and almost as easy as with the 9th graders, who are close to adult level of self-reflection. A solution that seems to work with the 9-12 year-olds is to introduce more constraints and a more restrictive format for presenting the ideas in order to have them work within a more structured process, thus ending up producing more relevant and interesting ideas. Our reason for having a two stage process was to be able to get some first experiences at a lower cost of time, both for the children and the researchers, before scaling up. And it turned out to be a good idea. One finding was that the brand of the product seemed as important as the functionality, and this showed us that the children from 9 years and up are very aware of the social context they are in and how they present themselves – also through their use of technologies.

LIMITATIONS AND TOPICS FOR DISCUSSION

Although we did our best to assure variety in the sampled population of children in terms of age, gender and cultural background, our results do not warrant extrapolations based on mere statistics due to the small sample size. On the other hand, it seems that our experiences are not contradicted by general accounts, and that similar conclusions regarding subsets of the perspectives we present have been reached in other case studies[2]. It seems clear that the children's 'creativity' is very much guided by the seeds we gave. In realizing this tendency, we should try to account for it, at least by evaluating the benefits by comparing the time and money spent on involving children so deeply in the design process to the added value of the resulting products.

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REFERENCES

1. Gaver, W. Designing for Homo Ludens. *i3 Magazine*, 2002 (June). 2-5.
2. Guha, M.L., Druin, A., Chipman, G., Fails, J.A., Simms, S. and Farber, A. Mixing Ideas: A New Technique for Working with Young Children as Design Partners. *Proceedings of IDC 2004*. 35-41.
3. LEGO Learning Institute. *Children's Play, Learning and Communication in a Digital World*, 2003. www.legolearning.net/download/Play_Culture.pdf.