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# The Challenge of Working with Teens as Participants in Interaction Design

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**Abstract**

As participants in interaction design, teenagers offer some very unique and valuable insights both into the often-unconventional world that they inhabit and from a viewpoint that can combine elements of both child and adult perspectives. Teenagers as a user group are not often studied within interaction design and within the field of HCI fall into a space between the Child-Computer Interaction community and mainstream HCI. Special consideration is needed when working with this user group as methodologies developed for child or adult users may not be appropriate or entirely successful. This paper begins by defining and describing teenagers as a user population then giving examples of how methodologies have been successfully adapted and created in order to engage teenagers in design studies. Finally the paper presents a series of challenges, opportunities, and areas to explore within this emerging area of HCI.

**Author Keywords**

Teenagers; Interaction Design; Participatory Design

**ACM Classification Keywords**

H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

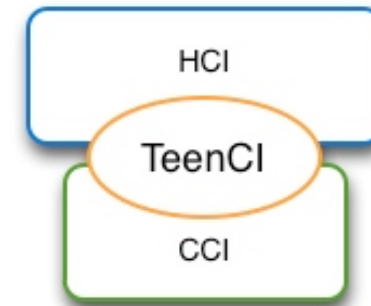
## Introduction

Teenagers have great potential to bring unique insights as participants in the interaction design process as they inhabit a world that is very foreign to most adults with clothing, technologies, social media, etc. used and appropriated in new and unique ways which can vary wildly from one social group to the next. Teenagers (13-19) are usually still living with parents but are very different from younger children; gaining increasing independence from their parents, often having access to a wide variety of technologies and with increasing spending power. Perhaps most importantly, teenagers will soon become adults and should be involved in the design of future technologies. However, teenagers are not often studied within the field of interaction design and fall into a space between the Child-Computer Interaction community and mainstream HCI considering adult users (Figure 1). The HCI and interaction design communities have much to learn about teenagers as users and, for example, methodologies developed for child users or adult users may not be appropriate or entirely successful when used with teenagers. This paper seeks to define teenagers as a specific user group and presents a unique set of research challenges to be addressed in this emerging research area. The paper also highlights some existing research focusing on teenagers within interaction design.

## Related Work

In the past 20 years there has been a growing community of researchers with the field of HCI focusing specifically on engaging child users in the design [5] and evaluation [11] of interactive products. This Child-Computer Interaction community has focused on created and adapting approaches for use specifically with child users. In this context, the age of child users

predominantly focuses around children of 3 to 12 years of age, working with older child participants from 13 to 17 years has received far less attention. In terms of actively involving teenagers in research and design projects there are very few studies and those that are reported, typically position the teenagers as users or testers rather than as informants or design partners [1], [4].



**Figure 1.** The place of TeenCI (Teen-Computer Interaction) within HCI and CCI (Child-Computer Interaction)

The motivation for this paper arose from a workshop<sup>1</sup> at NordiCHI in 2012 where participants present their current research work designing with teenage participants. At the University of Central Lancashire techniques such as the Cool Wall [6] have been developed to gain insights into teen understandings of 'cool' and specialized personas [8] have been developed in order to more effectively understand and design for teenagers. Work at the University of Bremen

<sup>1</sup> 'Designing Interactive Technology for Teens' (DITT 2012) <http://www.chici.org/ditt2012/>

is exploring and adapting techniques currently used with children and adults for teen users in their development of a Web 2.0 application to support peer knowledge transfer between children aged 15-19 years [10]. At the University of Aarhus teenagers have been engaged in the participatory design of a interactive museum exhibition ('Digital Natives') [9]. At Maryland existing work on search roles in the home is being extended to teenagers to gather additional insights [7].

### **Defining Teenagers**

The generally understood definition of teenagers is from age 13 to 19, with the term 'tweenagers' often used to refer to children aged between 10 and 13. These age ranges, 10-19, present a great period of change from childhood to adulthood. Key changes are in relationships with parents, the need for more autonomy, puberty, increased likelihood of experimentation, development of individual identity, increasing importance of peer groups and peer influence, and desire to spend more time in solitude and with peers [12]. Throughout these years children undergo a set of psychological changes [14] which result in, for example, increasing willingness to take risks [13] and a propensity for immediate rewards (as opposed to rewards gained over the longer-term). External changes during this period surround the move into secondary education and an associated change to a different school which occurs at around the age of 11-12 in most countries. This change to secondary education demarks a change where children enter a different environment with older peers which affords many of the key changes listed previously. It is this change of environment coupled with physical and psychological changes when children begin to act as a 'teenager' and exhibit signs of these changes. It is

interesting to note that the term 'tweenager' was conceived to describe children younger than the age of 13 behaving in a way similar to teenagers<sup>2</sup>. Rather than attempting to define the existing term of teenagers is more helpful to define key traits they exhibit:

- Desire for independence and autonomy
- Desire to develop and maintain individual identity
- Desire for association with peers
- High susceptibility to peer influence
- Willingness to take risks
- Increasing dissociation with parents/guardians

In the context of this research the term 'teen' is most useful to describe both those between the ages of 12 and 19 (encompassing later "tweenagers" in secondary education and teenagers).

### **Working with Teens as Participants**

When working with teen participants researchers have several choices of where to do this and each choice is likely to impact the behavior of the participant and the power relationship between the researcher and participant. Teens typically exhibit complex behavior and have a set of different personas depending on their situation. Working within a school setting simplifies access to this user group, however the relationship between researcher and participant will be

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<sup>2</sup> <http://news.bbc.co.uk/1/hi/business/882606.stm>

representative of their experiences with teachers and, if working in a group, behavior is likely to be influenced by the presence of peers. Working with teenagers in their homes may prove problematic as teenagers within their home often isolate themselves and tend to develop confrontational relationships with parents.

Teens are a very diverse and highly contextualized population that influenced by a large range of factors, making it very challenging to generalize in terms of their opinions and preference. While teens are often labeled 'digital natives' their experience of technology use is governed by factors they cannot control, primarily the wealth and choices made by their parents that allow access to technology. Teens are very highly motivated to fit with their peer group, altering their behavior, clothing, preferences, media consumption, technology, and social media use in order to do this. However, motivating teens to participate in research can prove problematic and motivation in general in the context of teens is reduced due to neurological development [2]. Specific consideration is need of the intrinsic and extrinsic rewards teens will perceive in order to encourage engagement.

### **Research Questions for the TeenCI Community**

At the workshop which motivated this paper, where all attendees were currently involved in research work involving teens as design participants, a clear need was identified to address specific challenges within this area of HCI. The following is the set of key research identified at the workshop, these form a set of future research directions for the teen-computer interaction research community.

#### *What methods should be used to engage teens in participatory design?*

Participatory methods are well established and understood with adult users and have been used extensively within the child-computer interaction community, what is unclear is what techniques should be used/adapted for teens and how. While different techniques have been used (e.g. [6],[8],[9],[10]) further work is needed to explore their success and examine issues such as how effectively they engage participants, and how much expression/creativity they afford.

#### *In what context should we work with teenagers?*

Several different possibilities exist for working with teenagers; in school, in the home, in the research lab, at out of school social activities. Each of these possibilities brings different challenges and opportunities in terms of ease of recruitment/access to teen participants, and in terms of the behavior of the teens and the potential power relationship between the researcher and participants. Other factors include group working with teens where there may be a potentially complex peer influence on behavior and the possibility of tension between mixed sex groups. While existing work has engaged teens in different context further work is needed to understand the most effective contexts for working with them and the tradeoffs therein.

#### *How can we develop a cultural understanding of teens?*

Working with teens naturally requires some understanding of their culture in order to begin contextualizing and understanding their language, preferences, perspectives and so forth. Developing technology for and with teens requires a more detailed

understanding as teens effectively construct their own culture, understandings, behaviors and values within a peer group. Further research in this areas needs to explore what are the salient aspects of a teen participant/population to understand (e.g. at the most basic level this may be whether they label themselves as part of group such as 'goth' or 'nerd' etc), how we can effectively use this information, and what tools are appropriate to use. This area has not yet been explored in detail within the HCI community, in existing work a tool has been developed to gain insights into perceptions of 'cool' with teens [6].

#### *How do teens appropriate technology?*

Within the adult HCI and CCI communities understandings of how technologies are appropriated have been developed but within the complex world of teens this is not yet understood. Teenagers are far more highly motivated to fit in with their peer groups than either adults and children, and, unlike adults, teens may have limited control over technology choices they make (due to lack of spending power and/or parental control). Teens may often make technology choices based on their peers, for example selecting a BlackBerry mobile phone in order to be able communicate with their peers using the BBM messaging service, or selecting an Xbox games console in order to use Xbox Live chat for the same reason. A key direction in this research area is the development of techniques and models to understand how and why teenagers appropriate technologies. Following on from gaining these understandings is the development of technics to incorporate them into a design process.

#### *What are the ethical challenges of working with teens?*

When working with teens, as opposed to younger children, participants are much more able to understand the context in which they are participating in research and the potential impact of their contribution; for example, whether their contribution may appear in a research paper or be used in the development of a commercial product. It is therefore important that the context and potential impact of participation is made clear, this is particularly important as teens develop their own moral values which they should be able to exercise if appropriate.

#### **Concluding Remarks**

This paper has identified the need for specialized consideration of teens (between the ages of 12-19) as users of technology within the HCI and interaction design communities. Presently this user groups has received little attention compared to work in CCI and mainstream HCI (considering adult users) communities. Teens offer unique insights valuable in an interaction design process, able to reflect and articulate in more advanced ways than younger children and providing a window in a world which is complex and challenging for adults to understand. Current teens will soon be adults and it is therefore important to involve them in the design of future interactive technologies. Working with teens require careful consideration of the appropriate methods to use, and existing techniques successful with child or adult user may not be successful; this paper has highlighted the complex mental and physical changes undergone during teenage years which researchers work with this age group should be aware of. This paper also presented a set of key research questions for exploration by the emerging teen-

computer interaction community on methodological, theoretical and practical levels.

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