
Child-Computer Interaction SIG: Ethics and Values

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Abstract

This SIG will provide child-computer interaction researchers and practitioners an opportunity to discuss topics related to ethical challenges in the design, and use of interactive technologies for children. Topics include the role of big data, the impact of technology in children's social and physical ecosystem, and the consideration of ethics in children's participation in the design of technologies, and in the conceptualization of technologies for children.

Author Keywords

Child-computer interaction; ethics; big data; confidentiality; privacy; social isolation; cyber-bullying; family; ethics by design.

ACM Classification Keywords

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

Introduction

Changes in technological capabilities, together with the proliferation of technologies that affect children and the adults in their lives are bringing new ethical challenges to the child-computer interaction community. This special interest group (SIG) is an opportunity for the community to engage in a discussion about emerging ethical challenges for both researchers and practitioners.

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One area of changes is in terms of the greater ease and cost of data capture and storage. While in the past it would have not been practical to log the use of interactive technologies, it is now common practice, meaning that their use, including children's, is often tracked [9]. In addition, children's behavior in schools is more likely to be electronically recorded by adults, not just in terms of grades and test taking, but also in terms of classroom behavior [2]. This is in addition to the electronic recording of children's lives by family members, often shared through platforms that retain their right to reuse such content [7].

These changes in data capturing and storage have come together with a much wider use of technology by children and the adults in their lives [12][14]. Increasingly, interactive technologies are becoming central to play, leisure activities, communication, and socialization. Hence, any ethical challenges are magnified by the ubiquity of technology in children's lives.

Another related change is the sheer number of interactive technologies designed for children that are out in the market, together with the large number of publishers. This has certainly brought advantages in terms of making a wide variety of offerings available, but it also means that more and more children are likely participating in the design of interactive technologies in some way. While children's participation in the design of interactive technologies at academic institutions in many countries has to go through a rigorous approval process by ethics boards, that is not the case for industry, where most technologies are developed.

Below we discuss in greater depth the ethical issues arising from these changes.

Big Data and Tracking

Children's activities are being tracked in an unprecedented manner through the ease of capturing and storage of information. For example, schools have increasingly introduced electronic student records, which include an ever-growing amount of information (e.g., grades, assignments). In addition, apps such as ClassDojo are being used to track student behavior in the classroom. Student modeling is increasingly used in educational apps, which attempt to use it to provide children resources that better match their needs. Educational content and services are provided through cloud infrastructures by organizations or companies and facilitate, for example, assistive learning and automatic testing. As a consequence of this development sensitive data may be transferred and processed outside the key players of the education system [13]. While in many countries there are strong protections on identifiable student data (e.g., FERPA in the United States), information that is not considered to be part of a child's "educational record" may be shared with third parties. Also, teachers and educators are not necessarily experts in digital media, media didactics, or applicable law in terms of information security and privacy.

Even if protections are in place, there are ethical concerns with respect to seeing children as a collection of numbers, and making educational decisions solely on these instead of on the richer experience teachers have with children, which is likely to negatively affect vulnerable children more than others. There are also ethical concerns with the use of software to train children specifically to pass tests, and the long-term

impact test-focused learning can have on children's development [1]. There is certainly a spectrum of possibilities that arise from big data, some of which are likely to be beneficial to children, while others may be detrimental.

In addition to what happens in schools, there is also the fact that many children make heavy use of interactive technologies, and many of these track every interaction. For example, a doll called *My Friend Cayla* is able to record children's conversations and upload them to the manufacturer's servers, and to another company that sells voice-matching services to military and intelligence services [8]. While this example may not be typical, as we mentioned earlier, it is quite common for apps to track user interactions [9], most often with the goal of improving usability or generating custom advertising. The latter purpose can lead to the creation of sophisticated profiles of children through their selections of interactive media, for example. In most of these cases both parents and children are often in the dark about what is being collected and how it is being used [9].

Children's Social Ecology

Perhaps the best-known criticism of children's current use of interactive technologies is its impact on children's connection to their socio-physical environment. In particular, the concern is about interactive technologies leading to social isolation and to a disconnection with the physical world surrounding children [11]. In addition, there are concerns with children spending too much time experiencing media, and not enough time being authors.

Coupled with children's use of interactive technologies is parent's use of the same [12] [14]. Absorbing experiences with interactive technologies could potentially get in the way of parents paying attention to their children and forming secure relationships, especially during early childhood [10]. There are also questions on the right level of access parents should have to data on children's use of technologies [5].

Parents' use of interactive technologies can also bring about ethical challenges when it comes to sharing about children in social media [7]. Should children have the ability to remove posts about them, or with media featuring them, once they become adults? Earlier?

Finally, there are possible challenges for vulnerable children given the increased use of social media, in particular among teenagers. The main concern is cyber-bullying and the technologies that make it easy to happen and difficult to stop [6].

Design Process

For quite some time, design processes in Child-Computer-Interaction have typically followed a user-centered and participative approach that involves users and stakeholders throughout the process of digital media and content creation. Numerous frameworks, guidelines, methods, and applications have been developed and evaluated (see Chapter 6 of [4]). Researchers and practitioners typically implement design processes according to their values and conception of the project's aims and stakeholders. A review of publications in the field of Child-Computer-Interaction from the last 15 years indicates that the terms ethics and value are used quite rarely (2 and 13 times). Privacy and security are mentioned 2 and 4

times, while evaluation (275) and methodology (91) are frequently used [3]. In the SIG meeting we will reflect on this matter with the community and discuss how to integrate relevant ethical and value-related aspects in the design process, and how to communicate relevant concerns to the practice community. It will be useful to learn about different approaches used in different countries, in addition to legal and practical constraints that differentiate academia from industry.

Agenda

During the SIG, we will introduce the topics, allow those in attendance to introduce additional topics related to ethics, break up for discussion, and report back to the entire group with an opportunity for whole-group discussion.

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