
Being Explicit about Underlying Values, Assumptions and Views when Designing for Children in the IDC Community

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Introduction

When designing technologies for children, designers and researchers often implicitly or explicitly incorporate an interpretation of what a child is, how children learn, or how they play etc. in their design process. However, if these assumptions are not communicated explicitly, discussions among researchers and designers can become difficult because they are not based on the same premises. It is important for the IDC community to be explicit about what assumptions are being made about children and how technology can support their life, so we can develop better quality argumentations about our work.

In this full-day workshop we want to discuss how researchers and designers can make their assumptions

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and related values regarding children and childhood in the design process of products for children more explicit. This workshop will lead to a better understanding of how we, as members of the IDC community, whether we are researchers and/or designers, can make our assumptions more explicit.

One of the challenges in the IDC community is that it is highly multidisciplinary. While some of us have a background in e.g. child development or learning, others comes from an engineering, or a design field. However, when designing technologies for children we try and incorporate knowledge from the different disciplines in a particular domain. Below, we will give two examples of situations that can occur when discussing designs for children related to different domains (e.g. play and learning) in different contexts (e.g. at a conference or in a design project).

Scenario of a discussion in the IDC community

Elisabeth presents her design of a learning tool for children from a particular (behaviourist) perspective at the IDC conference. She is asked a critical question by Erik from the audience about the design. Erik holds an alternative (cultural) view on learning. Without making their assumptions about learning explicit, they cannot really have a meaningful discussion.

Similar situations can arise when a designer or researcher is involved in a project with diverse partners with different views and assumptions about creating good design solutions for children.

Scenario of designing play solution

Imagine designing a solution to create play opportunities for children. The designer holds a view on

play, that it has value from an exploration and social perspective. He collaborates with other people in the project who assume that play should be combined with a focus on learning. Without making their assumptions more explicit, they have trouble understanding why they both argue for different design solutions.

Previous work on values in design

While the debate of the role of children in design has been addressed in the Interaction Design and Children (IDC) community, e.g. [2;7;18], the possible influence of implicit views on children when making design decisions, we argue, has been examined and addressed to a much lesser extent.

The importance of considering values of stakeholders in design has been addressed in HCI in general e.g. [4; 8]. Considering values explicitly can be important to ensure that designs meet the values of different stakeholders and provide value to the world. Furthermore, when reporting on values and assumptions the IDC community can acknowledge and discuss that solutions have embedded values. For example, when designing a solution to support teachers in engaging children in design-based learning activities, the values of the teachers, the children, the school, the parents and the designer could play a role in the design process.

Yarosh et al. [19] conducted a content analysis of values as described in papers from the IDC community. They described the behaviours and qualities that authors wished to support in children and criteria that informed technical design choices. They concluded that "Many of these values go unnoticed (perhaps even unspoken, at times) because we share them. The

values that are explicitly spoken in the work may be different from the core values held by the investigators. This may make it difficult for new researchers to interpret and evaluate IDC's contributions, understand its biases, and contribute meaningfully to its academic discourse". We argue that there may actually be several values or assumptions that we do not share, but which we do not discuss either, leading to misunderstandings.

Researchers have provided suggestions for how to incorporate values in a design process, e.g. Iversen and Leong [12] mentioned a three-step process of value-led design including emergence, development and grounding of values and Flanagan et al. [9] described a three-phase process including discovery, translation and verification of values.

In the following section we will discuss some of the domains in which the discussion of implicit values and assumptions are particularly relevant.

Diverse origins of values and assumptions

The origins for the underlying assumptions and views can be diverse in the CCI community. They can be related to the assumptions we hold about the activity we are trying to support, such as learning or play. Furthermore, they might be related to cultural influences about views on childhood and life. Or they can be related to the view we hold of what is childhood, e.g. from a sociological perspective.

Views on children and childhood

In the early 20th century, developmental psychology was the predominant paradigm for studying children [15]. In the late 20th century, childhood studies had

taken on a wider perspective including a sociological view of childhood [6;13]. Some of the main influences of this wider view included:

- The realization that children are interpreted, from a generational perspective, as not yet being adults
- That children can be seen as active participants and not only as passive objects of study
- That they can have a sense of agency in relation to the role of adults in their lives
- Childhood can be seen as a social construction

The extended paradigm of childhood has been characterized by combining different disciplines in the understanding of children. It developed by moving away from a mostly developmental and pedagogical understanding, known from for example Piaget, and insisting on drawing on a large body of research in sociological, philosophical and anthropological aspects in order to frame different perspectives of children and childhood.

Based on different views on childhood a design tool was developed, called the CHId PerspectiveS In Design (CHIPS) tool [14]. For example, it describes a view on childhood, which is grounded in child development literature, and another view on childhood that is grounded in sociological literature. This tool will provide a starting point for the discussion about values in the workshop afternoon.

Children with special needs

In the field of designing for children with special needs, the need to discuss values and assumptions about children is particularly salient.

In the research concerning design for children with special needs there seems to be another tradition for asking questions about the assumptions of the child. Benton et al. [3] point to specific concerns that working with this population in the field of participatory design needs to address. Guha et al. [11] underline important aspects such as the nature of the child's disability and how this could be supported. Also Frauenberger et al. [10] view children with special needs specifically wanting to give them control over the creative process, because it can be liberating for them. All papers underline the importance of empowering the children for the future, but also point to the risk of overburdening them.

It is interesting in the light of this workshop how to reflect upon the views of the child, and making that reflection explicit when taking design decisions.

Methods for making assumptions about users explicit

Where can we look for examples or inspiration for making assumptions about users and the domain we design for explicit?

Methods commonly used for making ideas about users explicit are persona descriptions and user profiles. User profiles are a description of a user's characteristics such as knowledge and expertise, psychological characteristics, physical characteristics and job and task characteristics [16]. The idea for personas was originally suggested by Cooper [5]. Personas are a good technique for making assumptions explicit to communicate with team members and other stakeholders in a design project [17]. Antle [1] described a specific framework for developing child

personas that covers childhood needs, abilities and experiential goals. This approach already helps designers consider the skills, abilities and interests of children by combining different theoretical perspectives.

However, personas are generally used to describe the different kinds of children that the designers should keep in mind when designing. They do not address or make explicit any general assumptions about e.g. how children play, or learn, or socialise.

We therefore expand on this framework by suggesting that considering the assumptions about children, e.g. from a sociological perspective would be a complementary approach to the one suggested by Antle [1]; it would make assumptions about the role of the adult and the amount of agency of the child more explicit.

Purpose of the workshop

The main purpose of the workshop is to initiate a discussion about values and views of children in the design process. We want to explore to what extent ideas of the child in the design process are present in the area of research, and also how ideas will influence actual design decisions.

During the workshop, we will:

- Discuss the implicit assumptions and views of children and childhood that may be present in the participants' (including our own) work
- Discuss these assumptions in relation to perspectives mentioned in literature, e.g. in media studies, sociology and child development literature.

- Discuss how to these assumptions may play a role during the design process
- Discuss examples of design tools to facilitate discussions on implicit assumptions

Call for participation

In this workshop, the participants' experiences will form the basis for the content. Researchers, practitioners, educators and designers from different disciplines involved and interested in the influence of assumptions about children and childhood on design and the role of children in design are welcome. The expected number of participants is about 15 people. We will consider the scope of issues that might arise by asking workshop participants to draw on their individual experiences to present a case study, inspiration or approach to examine views and values about children and childhood in discussing and presenting design decisions.

In this workshop we will discuss how designers' assumptions and related values regarding children and childhood in the design process of products for children can be addressed.

We ask all participants to submit a 2-4 page position paper (using the ACM SIG Proceedings Template) addressing the topic of the workshop (Note: since this workshop is held jointly with the workshop on "How Many Roles Can Children Play?", only one submission is required for both workshops). The workshop invites participants to describe or discuss their experiences with assumptions about children in making and presenting design decisions. The activities at the workshop will include presentation of papers as well as hands-on activities trying the CHIPS tool [14] for

addressing and examining views and values about children and childhood during the design process.

Before the workshop

All accepted authors are requested to read all the position papers before the start of the conference. A website will be developed for the workshop. This website will be used to inform about the workshop, and also serve as a repository for on-going work both before and after the workshop.

During the workshop

Workshop structure

Time	Content	
9.00	Introduction and background	
9.30	Two minute presentations by the participants on their experiences and examples	
10.30	Coffee Break	
11.00	Discuss examples of design cases or projects in relation to values and/or roles in mixed groups of 3-4 people	
12:00	Short presentations and wrap-up of the morning	
12.30	Lunch break	
	Values workshop	Roles workshop
13.30	Presentation of a tool for making values explicit	Group discussion on existing and emerging guidelines to drive the choice of roles to be played by children. What, who, when and how plus points
14:00	Discuss manners in which further support can be provided to researchers/designers, where do the	

Time	Content	
	assumptions come from, e.g. cultural, and theoretical perspectives.	coming from presentations given in the morning
15.30	Coffee break	
16:00 - 17.00	Wrapping up of the afternoon program (plenary)	

The outcome of the workshop may support the IDC community to become better communication partners in the IDC community, but also in our design practices.

After the workshop

The website will be used to share the outcome of the workshop. Furthermore, we will write a summary of the insights for a journal, such as *Interactions* or the *International Journal of Child Computer Interaction*.

We will also examine the feasibility of a special issue on this topic in the *International Journal of Child-Computer Interaction*.

CV and bio for the organizers

Helle Marie Skovbjerg is an Associate Professor in IT, play, and learning design. Helle is a member of the Communication, ICT, and Learning Design (KILD) research group and the Research Lab: ICT and Learning Design, at the Department of Communication and Psychology, Aalborg University Copenhagen. Her research interest is centred on play as a practice of moods, specifically playing with toys and digital tools within the childhood studies. She has worked in a variety of different contexts aiming at conceptualizing play activity, and is currently focusing on risk management in play activity.

Tilde Bekker is an Associate Professor in design research on playful interactions in the department of Industrial Design at Eindhoven University of Technology. She leads and participates in research projects that examine how to design for social and physical play and how to create design-based learning solutions for children. Her main research interests are designing for playful interaction, and designing products for children and older adults. She has over 75 publications in international, peer-reviewed journals and conference proceedings. She served as Co-chair of "Interaction Design and Children" IDC 2002.

Wolmet Barendregt is an Associate Professor in Interaction Design. Wolmet is a member of the Learning, Communication and ICT research group at the Department of Applied Information Technology, as well as the IDAC (Interaction Design and Children) working group and the Linnaeus Centre for Research on Learning, Interaction and Mediated Communication in Contemporary Society (LinCS) at the University of Gothenburg. Her main research interests are the design and evaluation of learning technologies for children. She has over 50 publications in international, peer-reviewed journals and conference proceedings.

References

1. Alissa, N. Antle. 2008. Child-based personas: Need, ability and experience. *Cogn. Technol. Work* 10(2) (March, 2008), 155–166.
2. Wolmet Barendregt, Tilde M. Bekker, Peter Borjesson, Eva Erikson and Olof Torgersson, (accepted) Legitimate Participation in the Classroom Context – Adding Learning Goals to Participatory Design, In *Proceedings of Interaction Design and Children 2016*, ACM.

3. Laura Benton, Hilary Johnson, Emma Ashwin, Mark Brosnan, & Beate Grawemeyer. 2012. Developing IDEAS: Supporting children with autism within a participatory design team. In *Proceedings of the SIGCHI conference on Human factors in computing systems* (pp. 2599-2608). ACM.
4. Gilbert Cockton. 2005. A development framework for value-centred design. Proceedings from CHI '05: *Extended abstracts on human factors in computing systems*, New York: ACM, 1292–1295.
5. Alan Cooper. 1999. *The Inmates are Running the Asylum*. Indianapolis, IN, USA: Sam's.
6. Kate Cregan & Denise Cuthbert. 2014. *Global Childhood: Issues and Debates*. Thousand Oaks: Sage.
7. Allison Druin. 2002. The role of children in the design of new technology. *Behaviour and Information Technology*, 21, 1–25.
8. Mary Flanagan, Daniel C. Howe, & Helen Nissenbaum. 2005. Values at play: Design trade-offs in socially-oriented game design. Proceedings from the SIGCHI Conference on Human Factors in Computing Systems (CHI '05). New York, NY, USA: ACM, 751–760.
9. Mary Flanagan, Daniel Howe & Helen Nissenbaum. 2008. Embodying values in technology: Theory and practice. In M. J. van den Joven & J. Weckert (eds.), *Information Technology and Moral Philosophy* (322–353). Cambridge: Cambridge University Press.
10. Christopher Frauenberger, Judith Good, and Wendy Keay-Bright. 2011. Designing technology for children with special needs – bridging perspectives through participatory design. *CoDesign* 7, 1 (2011), 1-28.
11. Mona Lee Guha, Alison Druin and Jerry Fails. 2010. Investigating the impact of design processes on children. Proc. IDC 2010, ACM Press, 198-201.
12. Ole S. Iversen & Tuck Wah Leong. 2012. Values-led participatory design: Mediating the emergence of values. Proceedings of the 7th Nordic Conference on Human-Computer Interaction: *Making Sense Through Design* (NordiCHI '12). New York, NY, USA: ACM, 468–477.
13. Allison James, Chris Jenks, & Alan Prout. 1998. *Theorizing childhood*. Williston: Teachers College Press.
14. Helle Skovbjerg Karoff and Tilde M. Bekker (submitted) The Value of Considering Childhood Views in Design, *International Journal of Child Computer Interaction*.
15. Mary Jane Kehily. 2008. *An Introduction to Childhood Studies*, Maidenhead, England: Open University Press.
16. Deborah Mayhew. 1991. *The Usability Engineering Lifecycle: A Practitioner's Handbook for User Interface Design*. San Francisco: Morgan Kaufman.
17. John Pruitt & Tamara Adlin. 2006. *The Persona Lifecycle: Keeping People in Mind Throughout Product Design*. Amsterdam: Morgan Kaufmann.
18. Mike Scaife, Yvonne Rogers, Frances Aldrich & Matt Davies. 1997. Designing for or designing with? Informant design for interactive learning environments. In S. Pemberton (Ed.), Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (pp. 343–350). New York: ACM Press.
19. Svetlana Yarosh, Iulian Radu, Seth Hunter & Eric Rosenbaum. 2011. Examining values: An analysis of nine years of IDC research. Proceedings of the 10th International Conference on Interaction Design and Children (136–144). New York: ACM.