

Together Through Play: Facilitating Meaningful Play for Disabled & Non-Disabled Children through Participatory Design

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ABSTRACT

Design and Sociology are disciplines that rarely interact, but both share significant common concerns, particularly when it comes to matters of inclusivity and “designing out” exclusion. While some of the qualitative methods used in sociology are already a common part of studying user interactions with products, this paper argues that further benefits could be achieved through closer interaction between these disciplines. Design could learn much from the moral and reflective critiques applied by sociologists to their own work to identify assumptions and prejudices, while sociology can benefit from the creative impetus and codesign principles adopted in design, particularly when it comes to working with and understanding children. The paper concludes by describing the Together Through Play project which sets out to explore the benefits of bringing together sociology and design in studying the area of inclusive play between disabled and non-disabled children.

Keywords

Inclusive Play, Disability, Design, Sociology

1. INTRODUCTION

Recent years have seen a growing trend towards Inclusive Education in countries such as the UK, with many more disabled children now attending mainstream schools. Whilst integration is important, research suggests that the co-presence of disabled and non-disabled children is insufficient to ensure real inclusivity or that the disabled children will be able to play a full and meaningful role in school life. This position paper explores some of the issues surrounding meaningful social interaction between disabled and non-disabled children, specifically with regards to play, and describes a novel project which brings together engineering and sociology to help understand the aspirations of disabled and non-disabled children for playing together, and the barriers that prevent this (recognizing here that “disabled” is a term that arouses a certain amount of controversy, and is sometimes deemed politically incorrect, but is the term adopted by the community itself in the UK, and the one most commonly used in emancipatory topics such as disability studies). The paper begins with a discussion of the importance of encouraging inclusive play as part of the development of an inclusive school philosophy or ethos. It then discusses the merits of bringing together sociology with design in order to address this (and other)

issues, before describing the Together Through Play project and its future plans.

2. BEYOND ACCESSIBILITY: THE IMPORTANCE OF PLAY TO INCLUSIVE EDUCATION

The concepts of inclusivity and accessibility have been steadily gaining prominence in the world of human-computer interaction (HCI) and the broader design and engineering communities. One can contrast the traditional individual or medical model of disability – which focuses upon “‘bodily abnormality’, disorder or deficiency and how this ‘causes’ functional limitation or ‘disability’”, laying foundations for approaches that emphasise ‘rehabilitation’ [1:18] – with the social model of disability, which distinguishes between impairment, understood as a characteristic of a person that is associated with their body, and disability as a social construct that arises as a result of modern society failing to ‘recognize or accommodate the human diversity associated with impairment’ [1:29]. The accessibility of technology – as part of the environment which enables or disables given activities – has received much attention in the HCI literature (either through the inclusive design of technologies, or the introduction of specialist assistive technologies intended to make given activities more accessible), but less emphasis has been given to the issues of social interaction.

While the accessibility of classroom environments and technologies is an extremely important part of ensuring inclusivity, they are only part of the picture [2, 3] If we are concerned with engendering positive relations between disabled and non-disabled children then we need to move beyond the so-called ‘contact-hypothesis’, since research suggests that contact (‘proximity’) alone is not always sufficient to change attitudes towards marginalized or socially oppressed groups.

A related area of concern is how to encourage non-disabled children to develop positive attitudes towards disabled peers and others [4]. After all, the aim of inclusive education is not ‘trying to “fix” children so that they can be fit back into relatively untouched “regular classrooms”, (...) inclusion aims to substantially alter general educational classrooms to make them responsive to heterogeneous groups of learners’ [5].

Play is recognized as an important element of childhood, and integral to both how children learn and how they form social bonds [6]. This is reflected in Article 31 of the UN Convention on the Rights of the Child: “the right of the child to... engage in play and recreational activities appropriate to the age of the child” (www.unicef.org.uk/crc/), and in the UK in initiatives such as the National Children’s Bureau (www.ncb.org.uk) which emphasise the importance of disabled and non-disabled children playing together. Play, then, is an important part of the way that children learn and interact, and has a key role in encouraging the sort of inclusivity described above. However, if play is to lead to this sort of inclusivity in education, it must address the social and emotional aspects which make play meaningful to children [6], and which have the potential to foster the positive interactions.

A range of projects have looked at encouraging play between disabled and non-disabled children. For example, the ECHOES (<http://echoes2.org/>) projects look to encourage social interaction and learning between typically developing children and children with Autistic Spectrum Disorder through technology-enhanced learning in the classroom. The P0werball project [7] and the University of Leeds IP-GAME project [8] both try to provide ways of allowing disabled and non-disabled children to play computer-based games together. Away from computer games, efforts in inclusive play emphasise the physical accessibility of games and equipment for disabled children [9]. How play might be made not only accessible, but also might encourage good relations between disabled and non-disabled children is an under-researched question/issue. It is this issue that the Together through Play project sets out to address, using a novel combination of participatory design and sociology, which are outlined in the next section.

3. SOCIOLOGY MEETS DESIGN

Moving beyond accessibility into matters of social relationships and the role of technology in facilitating – or impeding – friendships between disabled and non-disabled children requires a cross-disciplinary approach. Where designers and engineers are well-placed to focus on interactions with technology, sociologists provide a wealth of experience and methodology for studying interactions and understanding relationships between groups. Disability Studies in particular, has demonstrated a commitment to ensuring that disabled people are given voice in research.

Yet, one might reasonably ask: do the two disciplines need to be brought together? Couldn’t matters of accessibility and social relationships be studied independently? After all, many of the qualitative methods used by sociologists – observations, interviews, focus groups, ethnography – are already employed within the field of Human Computer Interaction; and social relationships are influenced by many factors that are independent of the accessibility of technology. Sociologists are familiar with the idea of giving participants an active voice in research, rather than merely making them passive entities to be studied – but then, many designers already recognize the value of *designing with* rather than merely *designing for*. There may be similarities between the two fields, but is anything actually gained by bringing the two together? This paper argues that there are synergies between the fields of design and sociology, and benefits to both designers and sociologists in the field of disability in working together.

While superficially, many of the methods used by designers and sociologists to study a given situation are similar, they tend to employ these methods with different goals in mind. Designers are focused on developing and evaluating technology: sociologists are interested in understanding a much wider range of issues relating to the interplay between individual experiences (personal troubles) and social context (public issues) [10]. Many sociologists also view their work as a ‘moral discipline’ in which they seek to ‘understand a little more fully the people around (them) in terms of their hopes and desires and their worries and concerns” [11]. and the way they apply methods reflects this. Further, sociologists have a strong recognition of matters of reflexivity, the prejudices and social perspective that the researcher brings to bear upon a situation, and how different this can be from the experience of those whose experiences/position is under investigation. They pay greater attention to identifying implicit or hidden power relationships that can be embodied in the design of technology and environments, and to gathering the perspectives of participants. The goals of the project presented in this paper are emancipatory: to identify and provide a platform for the aspirations of children for play, rather than merely presenting solutions that allow them to play together at a functional level. It is by providing insights into individual hopes and concerns and the interplay between individual experiences and social context that sociology is well-placed to support those developing technologies to support disabled children and to move our views away from the medical model of disability where difference from a norm is perceived to be the problem to be solved, towards the social model interpretation of disability which acknowledges that people with impairments are sometimes disabled by the way the world around them that has tended to be constructed by non-disabled people, for non-disabled people. Applying a social model perspective to design involves critically examining the role of the designer in either enabling or disabling individuals who have impairments. The sociologist’s concerns with matters of personal reflexivity encourages the researcher to question their own motives and to seek to understand the impact that they may be having upon the research and, in design-research, their designs. Further, their concern with sociology being a moral enterprise helps them to remain vigilant about the problem of voyeurism within research, where participants are “looked at”, rather than “listened to”, which can be a problem even with participatory design methods, if researchers are not reflecting on the positions and prejudices they bring to their work. It also helps us to understand technology in a more holistic manner, appreciating the wider social, political and cultural contexts which influence technological practices. This may have value in any design process, but when it comes to research and design with groups who are typically marginalized – which could include children generally, but applies to disabled children in particular – this point of view is essential.

Sociology then, brings a new perspective to design, one that can enrich the way designers work: perhaps more a matter of a new way of thinking about problems than an entirely new set of techniques. These, I think are a style and attitude that most in the design and HCI community would be keen to learn from. What, then, can design bring to Sociology, particularly if many of its methods for understanding users have been adapted from social research in the first place?

The answer to this lies in *creativity*: designers have the ability to create, and to facilitate others in creating. This is well understood in the field of HCI, particularly in relation to children, with

Druin's concept of co-operative inquiry [12] where the process of designing with children becomes a way of better understanding them, and their needs. The challenges in doing research and designing with children are well-recognised [e.g. 13], particular when dealing with complex and emotive issues such as social relationships. Designing with children provides an indirect way of approaching the problem, and if we wish to understand children's aspirations, then allowing them to explore those aspirations by embodying them in prototype designs that can be tried out and re-evaluated.

This, then, are the potential synergies between sociology and design: a moral attitude to design, and the ability to explore children's experiences and attitudes through creative exploration. It is this that the Together through Play project tries to bring together.

4. TOGETHER THROUGH PLAY

Together Through Play is a three year research project funded by the Leverhulme Trust to develop an understanding of children's needs and aspirations for inclusive play and the barriers (societal and environmental) that prevent these aspirations being realised. This is a piece of action research [14] that explores ways to facilitate meaningful play between disabled and non-disabled children, through a process of contextual inquiry and participatory design.

This project represents the first attempt to understand disabled and non-disabled children's aspirations for playing together and how the design of toys and games can support or hinder this. This builds upon previous work undertaken by researchers in the fields of Inclusive Design [8] and Inclusive Education [4], to further develop understanding of the social and emotional aspects of play, which have the potential to foster positive interactions between disabled and non-disabled children.

4.1 Aims

The aims of this study are to not only explore the physical accessibility of toys, games and play environments, but also disabled and non-disabled children's aspirations for playing together, through participatory design: actively involving them in developing and testing ideas.

The four key objectives are as follows:

- 1) To observe and interview children at participating schools to identify:
 - a. their experiences of inclusive play;
 - b. barriers to inclusive play; and
 - c. their aspirations for inclusive play.
- 2) To work with participating children to gather their ideas for improving meaningful play between disabled and non-disabled children;
- 3) To prototype and evaluate conceptual designs with participating schools; and
- 4) To derive guidelines for the design of toys/games/environments that facilitate meaningful play between disabled and non-disabled children, based on the experience gained in this project.

4.2 Methods

While there has been much research on special methods and considerations when engaging children in design [13], the issue of engaging disabled children in the design process still remains under-researched, despite early efforts in the domain of Human Computer Interaction [15]. It is worth noting that the fields of engineering and medical technology are significantly less developed than the HCI field when it comes to designing with users, and with children in particular [16], and accordingly it is the fields of HCI and sociology that provide the methods used – although as we have already noted, the two fields use many of the same methods.

The project will provide case studies of involving both disabled and non-disabled children in the development of methods for inclusive play, which will be of benefit to future researchers and designers interested in working with children in the areas of inclusive play and the design of assistive technology in the future.

This research adopts Druin's co-operative inquiry approach [12] using the process of developing and evaluating designs with children as a basis for exploring their views. The main outcome of the research is not new technologies, products or designs per se (although these may be an outcome!), but through feedback and interaction with prototypes, a greater understanding of the children's aspirations for inclusive play and how this can be enabled than could be achieved through interviewing alone.

At each participating school, an existing friendship group of three children has been recruited, where at least one child has a statement of special educational needs owing to a physical impairment, and at least one child has no statement of special educational needs.

This research is not only interdisciplinary (involving engineers and sociologists), but transdisciplinary: recognising that there may be quite diverse perceptions of the "problems" to be addressed and working closely with those close to the "problem". As the researchers seek an in-depth understanding of the aspirations and barriers faced by a small number of disabled children and their friends, the sample is micro-representative, and results will lay the foundations for future studies that could extend the work to larger and more generalisable samples. Owing to the exploratory nature of the research, attention has been restricted to physical impairments, and no attempt has been made to capture a representative range of impairments: this is something that will need to be done in future studies.

A steering group of representatives from a range of organisations that work with disabled people, disabled people's own organizations, as well as children, parents and teachers involved in the project has been set up to help ensure that the views and concerns of the disabled community are reflected in the research.

At present, mind mapping activities and design-based workshops inspired by the work of Druin [12] are currently being developed further to enhance the curriculum at participating schools; to maximise the use of resources available in the local community and to nurture collaborations in the future. The researchers are taking a novel approach to collaborative working, for example, by engaging undergraduate students in the process of designing 'probes' for discussion in participating schools, and

resources for design activities are currently being sourced from social enterprise projects such as Scrap Creative Reuse Arts Project Ltd (S.C.R.A.P.), in order to enable participating children to generate ideas for their designs by reusing waste materials from local businesses.

The Together Through Play researchers have also been building relationships with various stakeholders groups, maintaining the view that inclusion must be understood in the broadest sense: inclusivity for all. Creative workshops, school-based observations and Steering Group meetings thus far have revealed that barriers to inclusion extend beyond disabled and non-disabled groups, and it has been identified that various forms of 'exclusion' are experienced by children from a range of diverse cultural backgrounds.

Moving forward, researchers on the Together Through Play project are confident that a diversity of children would benefit from the design and development of more inclusive products and technologies, and from being actively engaged in the design process. They are particularly keen to explore opportunities related to cultural diversity in the future, which may also be extended to include the specific requirements of young people in developing countries. At the IDC event, researchers on the Together Through Play project would benefit significantly from the opportunity to nurture future collaborations, and are keen to make a positive contribution to the IDC workshop and the publication of the outcomes.

5. FUTURE DIRECTIONS

It is important to note that the Together Through Play project is being undertaken by engineers and sociologists, rather than interaction designers. Nevertheless, the project is of relevance and its goals likely to be of interest to those in the domain of HCI who are developing assistive technologies for disabled children, or aiming to improve the accessibility of technology more generally. The team are preparing to undertake codesign activities with the participating friendship groups throughout 2012, and will use the designs both as a prompts for eliciting discussion on inclusive play as well as developing some of them into working prototypes to test and evaluate with the participating children.

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