Social Class, School and Visual Impairments: Reflections from the field

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Abstract
Research on the design of assistive educational technologies rarely explicitly address the implications of children's sociodemographic characteristics, such as class, race and gender. Through a field-study with children with visual impairments, we investigated how their experiences of the classroom and of disability varied depending on their socioeconomic contexts. Children whose families were of lower socioeconomic status were more likely to report feeling excluded, and to refer to school as a "*hardship*" with "*little purpose*." We reflect here on the extent to which design interventions can contribute to (re)shape these experiences, and on the position of the researcher as an ally.

Author Keywords
Intersectionality; Educational Technologies; Experience.

ACM Classification Keywords
H.5.m. [Information Interfaces and Presentation (e.g. HCI)]: Miscellaneous; K.4.2 Social Issues: Handicapped persons/special needs

Background
Disability and social class interact in multiple ways, a process often described as intersectionality. Children born in a lower socioeconomic contexts are more likely to born with an impairment [10]. They have an increased risk of poorer

mental and physical health, conduct difficulties, and peer problems, compared to children coming from more privileged families [5]. They experience more difficulties to access adequate care [12]. Furthermore, both disability and coming from an under-privileged family affects children's experiences at school. For instance, children lower social status attain lower academic achievements [13], while living with a disability increases the risk of being exposed to bullying at school [2]. We acknowledge that gender, ethnicity, race, age, and geographical location also greatly impact life experiences, but will focus on disability and social class only in this proposal.

Field-study

We conducted an 18 months field-study in a non-profit French organization providing various services to children with visual impairments and to deaf-blind children. This includes rehabilitation, therapy, adapted documents, assistance in mainstream schools, as well as segregated education. The field-study consisted in observations, interviews, and the deployment of participatory designed probes and prototypes. It included 50 children with visual impairments and their various caregivers (parents, specialized teachers, assistants etc.). The project first focused on substituting visual information in the case of geography.

However, we were quickly confronted to the fact that children attending a segregated classroom were much more likely to come from under-privileged families. Caregivers observed that children's socioeconomic context usually impacted the skills acquired when reaching adulthood, both in term of autonomy and academic achievements. As an argument, they mentioned multiple children with similar impairments receiving similar services by the same team, but often with drastically differing outcomes. In fact, several caregivers argued that the severity of sensory impairments (e.g., mild or severe visual impairment) had less impact on children's development and academic achievements than the family's socioeconomic context. In their own words: "with the assistance we provide, they perform pretty much like their able-bodied peers." In Great Britain, Chanfreau and Cebulla [1] found that visual impairment alone had only a small impact on academic achievements.

Furthermore, the early inclusion of children in the research process revealed a predominance of negative opinions about school. This led us to refocus our research on children's experiences of school, and how educational technologies contribute to shape these experiences. Early results suggested that children's strategies at school (e.g., willingness to engage with the teacher and with their peers), their motivations to attend school (e.g., finding a good job as an adult), as well as their descriptions of school (e.g., a hardship) varied depending, among other factors, on their family social status. This is not surprising in regard to the social sciences literature on education [4, 7]. However, if we are to take into account children's characteristics other than impairments when designing for them, multiple research issues emerge.

Research questions

These questions synthesize the impact of an intersectional framework on our research through four lenses: the researcher's posture; the assumptions on participants; the impact on design interventions; and the requirements for interdisciplinarity.

- *How does intersectionality affects the researcher's posture?*
  Intersectional research have a clear emancipatory aim: its goal is to reduce social inequalities. Using this framework places design researchers in three

positions, sometimes contradictory. The first is the activist. Researchers have to become allies to the participants, and carefully consider the political agendas their work support, but also devise ways of talking about these issues with children. Then there is the position of the designer, bringing a specific set of skills, and aiming at building "things-that-work." Finally, there is the position of the researcher, who has to develop theoretical work valued by the research community. Each position brings its own set of priorities, which can be in conflict [3]. For instance, publishing on under-privileged communities may contribute to their objectification, and to the production of negative policies. In this case, the researcher contradicts the activist. On the other hand, activism may over-simplify a situation for political gains. Additionally, it questions researchers's own identities: how do our sociodemographic profile influence the type of research we do? How do children relate to researchers during design activities depending on how resemblant they are? [6]

- *How do we understand and take into account participants intersectional identities?*
  This question is multi-faceted: a first aspect is to consider diversity in the recruitment process. In our case, rather than only considering children's disability status, we were attentive to include children from a variety of backgrounds. A second aspect is that designers's productions both embody and shape certain representations of "users" [9]. These representations need to be carefully crafted, and designers need to consider their own biases explicitly. A third aspect is that participants may have conflicted priorities, depending on their own demographic characteristics. Whose needs should be considered first? [11] How can researchers deal with such conflicting priorities?

- *What is the impact of intersectionality on the design approach?*
  Design approaches with an implicit social justice goal may emphasize empowerment [8] or interdependence, or universality or individuality. These choices have consequences: empowerment may place the burden of accomplishing social change on children's shoulders. Respecting universal design's rules may reduce the user and hide new emerging inequalities [14]. In our field-study, we took position for supporting children's agency, diversity and own ways of knowing. We crafted design interventions for children's resilience, and engaged to change teaching practices and teachers's biases. But these results (and long term impact) can hardly be guaranteed.

- *How do we facilitate the necessary interdisciplinarity?*
  This type of research is likely to require interdisciplinary research, from social and political sciences, to design and engineering. Although sometimes the same researcher can switch disciplinary hats, collaboration should be encouraged for pragmatic reasons. For instance, we have been struggling with the amount and endlessness of research literature that can inform our research. How do designers and social scientists can collaborate?

Expectations regarding the workshop

We are submitting to this workshop because these lines of questioning merit to be discussed collectively. Indeed, one may not be aware of one's own bias. We hope this workshop will be the occasion to share insights and doubts, and to develop collaborations for future empirical and theoretical developments.

Brief personal bios

Émeline Brulé is a PhD student at Télécom ParisTech, University Paris-Saclay. Their research articulates design studies, HCI and sociology. They investigate how inclusion, as an educational paradigm, impacts caregiving practices, and the design of instructional technologies.

Gilles Bailly is junior researcher (CNRS researcher) in Human-Computer Interaction at UPMC (Paris). His research focuses on developping users' expertise with interactive system throught interaction design and modeling.

Annie Gentès is associate professor in information and communication sciences and design at Télécom Paristech. Her research focuses on the evolution of design practices, teachings, and tools, and the epistemology of design.

REFERENCES

1. Jenny Chanfreau and Andreas Cebulla. 2009. Educational attainment of blind and partially sighted pupils. *London: RNIB* (2009).
2. Stella Chatzitheochari, Samantha Parsons, and Lucinda Platt. 2016. Doubly Disadvantaged? Bullying Experiences among Disabled Children and Young People in England. *Sociology* 50, 4 (2016).
3. Eric J. DeMeulenaere and Colette N. Cann. 2013. Activist Educational Research. *Qualitative Inquiry* 19, 8 (2013), 552–565.
4. François Dubet. 2008. *Faits d'école*. Number 6. Éditions de l'École des hautes études en sciences sociales.
5. Eric Emerson. 2012. Understanding Disabled Childhoods: What Can We Learn From Population-Based Studies?. *Children & Society* 26, 3 (2012), 214 – 222.
6. Gary Alan Fine and Kent L Sandstrom. 1988. *Knowing children: Participant observation with minors*. Vol. 15. Sage Publications, Inc.
7. Goretti Horgan. 2007. *The impact of poverty on young children's experience of school*. Citeseer.
8. Amy Hurst and Jasmine Tobias. 2011. Empowering Individuals with Do-it-yourself Assistive Technology. In *ASSETS' 11*. ACM, 11–18.
9. Nelly Oudshoorn and Trevor Pinch. 2003. *How users matter: the co-construction of users and technology (inside technology)*. the MIT Press.
10. Deborah A Phillips, Jack P Shonkoff, and others. 2000. *From neurons to neighborhoods: The science of early childhood development*. National Academies Press.
11. Alison Phipps. 2016. Whose personal is more political? Experience in contemporary feminist politics. *Feminist Theory* (2016).
12. Gloria Simpson, Barbara Bloom, Robin A Cohen, and P Ellen Parsons. 1997. Access to health care. Part 1: Children. *Vital and Health Statistics. Series 10, Data from the National Health Survey* 196 (1997), 1–46.
13. Colette Van Laar and Jim Sidanius. 2001. Social Status and the Academic Achievement Gap: A Social Dominance Perspective. *Social Psychology of Education* 4, 3 (2001), 235–258.
14. Myriam Winance. 2014. Universal design and the challenge of diversity: reflections on the principles of UD, based on empirical research of people's mobility. *Disability and Rehabilitation* 36, 16 (2014), 1334–1343.