# Empowering people with impairments: How participatory *methods* can inform the design of empowering *artifacts*

**Jelle van Dijk**
University of Twente
De Horst 2, Enschede
The Netherlands
0031534894596
Jelle.vandijk
@utwente.nl

**Niels Hendriks**
LUCA School of Arts,
University of Leuven
C-mine 5, Genk, Belgium
0032476242945
Niels.hendriks
@kuleuven.be

**Christopher Frauenberger**
Vienna University of
Technology
Karlsplatz 13, Vienna, Austria
00431588010
Christopher.frauenberger
@tuwien.ac.at

**Fenne Verhoeven**
Utrecht University of Applied
Sciences
Nijenoord 1, Utrecht,
The Netherlands
0031651800128
Fenne.verhoeven@hu.nl

**Karin Slegers**
University of Leuven
Parkstraat 45,
Leuven, Belgium.
003216323652

Karin.slegers@kuleuven.be

**Eva Brandt**
KADK
Philip de Langes Allé 10,
Copenhagen, Denmark.
004541701847
Ebr@kadk.dk

**Rita Maldonado Branco**
University of Porto
Praça de Gomes, Teixeira 4099-002,
Porto, Portugal.
00351220408000
Ritamaldonadobranco@gmail.com

## ABSTRACT

Participatory Design has developed *methods* that empower people with impairments to actively take part in the design process. Many *designed artifacts* for this target group likewise aim to empower their users in daily life. In this workshop, we share and relate best practices of both empowering *methods* and empowering *designs*. Participants are therefore invited to bring along cases of designing for- and with people with sensory-, cognitive- or social impairments. Our workshop consists of three parts: (1) Foregrounding empowering elements in PD *methods* using method stories, containing the backstory of a method put into practice; (2) Reflecting on *technological artifacts*, exploring the empowering qualities of person-artifact-context interaction; (3) constructing a critical synopsis of the various relationships between empowering products and -methods.

## CCS Concepts

•**HCI design and evaluation methods** ➔**Field studies** •**HCI theory, concepts and models** ➔**Interaction design process and methods**

## Keywords

Empowerment; Impairment; Participatory Methods; Method Stories; Assistive Technology; Artifact, Product Design.

## 1. INTRODUCTION

Participatory Design (PD) has a history of designing for- and with people with impairments, set against the background of innovation in assistive technologies for health and well-being [5].

When designing technology for people with impairments, their active involvement proves to be invaluable to create meaningful outcomes. In other words, it is difficult, if not impossible, to design a meaningful, practically 'fitting' assistive artifact without involving the person in question. High rates of technology *abandonment* [10] [7] may be read as underscoring this very need, caused by the failure to incorporate the client's perspective [7] and the fact that the success of a product in practice depends on individual skills and a person's specific local, contextual circumstances [10].

The term 'empowerment' is often used to describe the way PD methods emancipate 'non- professionals' in design projects [1] [3]. We refer here to the manner in which the approach as a whole, but also specific interventions, techniques, procedures, materials and tools, enable participants to become actively involved in the process. This includes being recognized as true participants and being able to take up position in social interaction with other project members, such as professional designers, engineers, researchers or institutional representatives.

In recent years, 'empowerment' has also become known more generally as a key-term in health care innovation. Traditional roles of care professionals, 'patients' and family-members are being revisited; new care policies aim to support people in recruiting their own social- and material resources to solve problems themselves, thereby regaining (more) control over their own lives [4]. Within this context, various technological products, systems and/or services (henceforth 'artifacts') have been proposed that should work to enhance the empowerment and overall well-being of their persons in everyday life [6] [2].

We may actually see the goal of empowering a person with an impairment in the design process, as part of the more general project of enhancing this person's capability for taking control over his or her life more generally [9]. This refers to dealing with the practicalities of everyday life in ones' own preferred ways, as well as being able to take up a (more) autonomous position in relation to his/her informal- and professional caretakers, and ultimately to the world at large. With this larger perspective in mind we will explore how theories and practical know-how about how to empower people in design, can inspire and inform the design of artifacts that should empower those same people in daily

life. We harvest best practices about empowering PD *methods* to inspire and inform artifact design.

## 2. WORKSHOP STRUCTURE

### 2.1 Morning session: Empowering Methods

First, we untangle the empowering elements in PD methods by discussing method stories. Method stories refer to the back stories of methods [8], narrating how empathic or PD methods are thus made to work in such a realistic design setting. We explored method stories for- and with people with impairments in a series of workshops and a special issue in *CoDesign* [11]. Method stories are an excellent tool to share the making of the methodological approach, including trial & error procedures, adaptations to existing methods, etc. Especially when working with people with impairments, the participatory process needs not only be flexibly adapted to the specific design situation, but also to the participants. Sharing the back stories of methods could be an important step towards scientifically grounding situated empathic methods of involving people with impairments. [8] suggest six elements as the basis of a method story, of which we use five. (1) Impairment positioning: What is the project's view on the impairment? How is it addressed during the process?; (2) Equivalence: How were equal contributions supported? How did activities support a shared language?; (3) Balancing viewpoints: How were the different viewpoints of the participants dealt with?; (4) Ethical challenges: What ethical challenges were encountered and how were they dealt with?, and (5): Adjustment of technique/tool: What level of flexibility of approach and materials was required (e.g. changes made on the spot)? Having presented, discussed and adapted our created stories, we end by reflecting more generally on the ways of documenting the making process of methods for involving persons with impairments.

### 2.2 Afternoon session: Empowering Designs

Based on the method stories, we reflect on (assistive) technological artifacts, identifying empowering qualities within person-artifact-context interaction. We explore empowering aspects of designs by constructing Design Exposés [6]. Discussion is centered on the five story elements of the morning session, but then applied to artifacts. We discuss these centering on five story method elements from the morning session, applied to artifacts:

| | |
|---|---|
| *Impairment positioning* | What is the (implicit) *products'* view on the impairment? |
| *Equivalence* | How are contributions of the impaired person, the product and others managed by the artifact? |
| *Balancing viewpoints* | How are perspectives of the person with the impairment, informal care-givers and professional care-givers integrated into the artifact? |
| *Ethical challenges* | What ethical issues does the product 'install' and how does the artifact deal with these? |
| *Adjustment of technique/tool* | To what extent can the product be flexibly adapted to the specific situation and needs of individual users? |

### 2.3 Closing session

Finally, we draw all insights together, constructing a critical synopsis of the various relationships between both empowering methods and artifacts.

## 3. EXPECTED OUTCOME

A special issue of a relevant journal will be created, publishing experiences and approaches for involving people with impairments in design. The workshop will serve as a preparation for this special issue. Also, we will publish cases and workshop insights online by starting a growing web-repository.

## 4. PARTICIPANTS

A CFP will be published and spread via newsgroups/lists, blogs (design & disability related) and personal networks. Submissions close on June 26th, 2016. More info and case examples can be found at https://igw.tuwien.ac.at/pdc16-empowering/ We aim for about 20 participants. Participants apply by submitting a method story of the making process of a method for involving people with sensory- cognitive- or social impairments in design and/or a presentation of a resulting technological artifact. Participants consider their most suitable format. Do not hesitate to add personal reflections, difficulties encountered, trial-and-error learnings and ad hoc adaptations of plans during the execution of the project.

## REFERENCES

[1] Agre, P.E (1995). From high tech to human tech: Empowerment, measurement, and social studies of computing. *CSCW: An International Journal*, 3(2), 167-195.

[2] Dijk, J. van & Verhoeven, F. (accepted/2016) To Shed Some Light on Empowerment: Towards Designing for Embodied Functionality. *Proceedings of DRS'16, Brighton.*

[3] Ehn, P. (2008). Participation in Design Things. *Proceedings of PDC'08, Indianapolis, USA,* 92-101.

[4] Fisher, D.B. (1994). Health care reform based on an empowerment model of recovery by people with psychiatric disabilities. *Psychiatric Services 45(9)*, 913-915.

[5] Frauenberger, C. Disability and Technology - A Critical Realist Perspective. *Proceedings of SIGACCESS'15.* New York: ACM.

[6] Frauenberger, C. Makhaeva J. and Spiel, K. (2016). Designing Smart Objects with Autistic Children Four Design Exposès. *Proceedings of CHI'16 San Jose.* New York: ACM.

[7] Gitlin, L.N., (1995). Why older people accept or reject assistive technology. *Generations 19(1).* 41-46.

[8] Hendriks, N., Slegers, K., and Duysburgh, P. (2015). Codesign with people living with cognitive or sensory impairments: a case for method stories and uniqueness. *CoDesign* 11(1), 70-82.

[9] Light, A. and Akama, Y. (2014) Structuring future social relations: the politics of care in participatory practice. *Proceedings of PDC'14.* New York: ACM.

[10] Phillips, B., and Zhao, H. (1993). Predictors of assistive technology abandonment. *Assistive Technology 5(1)*, 36-45.

[11] Slegers, K., Duysburgh, P., and Hendriks, N. CoDesign with people living with cognitive and sensory impairments. *CoDesign 11(1),* 1-3