

Co-Constructing Universal Design in Citizen Science Workshops

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Abstract. This paper reports on a series of workshops that took place at two Swedish museums during 2017. The workshops were inspired by a citizen science approach, where the participants were not only on the receiving end but also active in producing new knowledge. The importance of turning to peoples' lived perspectives are often brought forward as crucial to understanding how inclusion and exclusion are played out in real life. The study aimed to introduce and discuss Universal Design (UD) of museum exhibitions, by engaging visitors and staff in bringing forward content for joint discussions. As there is an ongoing shift from traditional work on accessibility towards UD taking place in Sweden right now, the study was also part of raising the awareness of UD within the disability movement and at the museums. Museum visitors representing different disability organizations worked together with museum staff in photo exercises, supervised by two researchers. In total, 31 participants took part in six three-hour workshops. The workshop format encompassed three steps. First, one of the researchers introduced UD, after which the participants were divided into mixed groups with both visitors and staff. Their task was to take photos of museum features that were in line with, or in conflict with, UD. At the end of the workshop, all groups gathered to discuss what they had found. In this paper, we tell about the examples the participants brought forward and the ensuing joint discussions, and discuss the further implications for UD.

Keywords. Universal Design, Citizen Science, museums, participation, CRPD

Introduction

An inclusive society is designed with all people in mind, as denoted in United Nation's Convention on the Rights of Persons with Disabilities (CRPD) [1], where Universal Design (UD) is brought forward as a key strategy towards building a society for all [2]. UD is built on the notion of diversity and offers strategies and principles recognizing the need to design for all people. It is still understood as primarily being about people with disabilities, but the development it is supposed to support and promote is meant to include people of all ages and abilities. Herein lies a challenge and an opportunity for UD: there is a need for renewed inter- and transdisciplinary knowledge when implementing Universal Design, based on a right to the products, services, and environments as a human rights issue. As Lid states it in her conclusions [3], this kind of perspective is dependent upon "effective participatory planning processes involving a

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dialogue between both stakeholders situated and professional knowledge”. The importance of turning to peoples' lived perspectives is often brought forward as crucial to understanding how inclusion and exclusion are played out in real life. Scholars also stress the need for new methods and methodology. Who and how stakeholders are involved in knowing-making matters, as does the mindset guiding the knowledge creation. As Hamraie puts it: “Knowing what defines a more accessible world depends, in one sense, on how *much* we know, and in another, on the *politics* of knowing-making” [4, p. 223].

There is a shift towards UD in Swedish policy, taking place right now. In 2017, the Swedish Government proposed a new national objective for Sweden’s disability policy [5] with UD as a core principle. This was recently (Feb 2018) followed up with a new proposed policy for architecture and design [6], stressing the importance of UD. This paper reports on a series of workshops that took place at two Swedish museums during 2017. The workshops were inspired by a citizen science approach [7, 8], where the participants were not only on the receiving end but also active in producing new knowledge. The purpose of the paper is to tell about the examples the participants brought forward during the workshops and the ensuing joint discussions, and finally to discuss the further implications for UD.

Methodology

The citizen science workshops were part of a study that aimed to introduce and discuss Universal Design (UD) of museum exhibitions, by engaging visitors and staff in bringing forward content for joint discussions. Because of the current shift from traditional work with accessibility towards UD in Sweden, the study was also part of raising the awareness of UD within the disability movement and at the museums. Museum visitors representing different disability organizations worked together with museum staff in photo exercises, supervised by two researchers. The workshop format encompassed three steps. First, one of the researchers introduced UD, after which the participants were divided into mixed groups with both visitors and staff. Their task was to take photos of museum features that were in line with, or in conflict with, UD. At the end of the workshop, all groups gathered for joint discussions about what they had found.

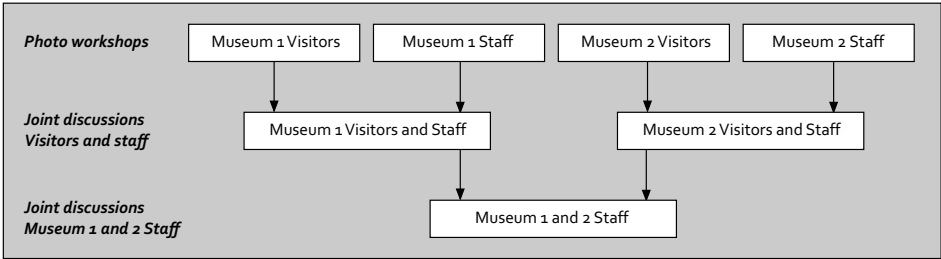


Figure 1. Overview of the workshops.

In total, 31 participants from two museums took part in six three-hour workshops (see Figure 1 for an overview). Recruitment was performed by our collaboration partner in the study, HSO Skane, an umbrella organization for more than 30 interest organizations within the field of disability in the south of Sweden. Thus, the participants

represented a wide range of different perspectives, instead of just one organization. Each workshop lasted three hours. First, the visitors and the staff took part in one workshop each. After that, they met in a joint workshop, comparing and discussing their examples. At the end, staff from both museums participated in a workshop comparing the results and experiences from the different museums.

For the data collection, we made sure that each group had at least one person with a smartphone that could be connected to a projector. The participants were free to use any camera app they wanted. When they returned from the photo exercises, they connected their smartphone directly to the projector and presented what they had photographed and why, in the order they had taken the photographs. During the first four workshops, the participants presented and discussed 208 photos that they had taken to illustrate examples of something in line with or in conflict with the seven different UD principles (See Figure 2). All the presentations and discussions were recorded on video and with a digital sound recorder, imported into Transana 2.61, and transcribed. The transcriptions were then anonymized, imported into NVivo 11 for Mac, and analysed using conventional content analysis [9], supported by the videos for recollection of different photographs.

Results

The content analysis yielded five different themes:

- Being part of the solution - not only the problem
- Contributing to a shift in mindset
- Exploring and experiencing own and others' perspectives
- Deliberating priorities, compromises, and optimization
- Implementing UD in museum development processes

Below, we present each of the themes more in-depth and give examples of what came up during the workshops in relation to each of the themes.

Being part of the solution - not only the problem

Several of the participants had previous negative experiences from taking part in discussions regarding accessibility, in for instance reference groups at their municipalities, where the discussions often became quite frustrating and problem-oriented. They described UD as a positive mindset that should be a main goal in society since it stimulates people to think in new, more inclusive and positive directions. At the same time, they expressed concerns regarding how far the UD perspective can be stretched, without the disability movement being perceived as fundamentalist.

The participants saw potential in UD. From an organizational perspective, it offered them a way of opening up for and contributing to discussions across several special interests, instead of keeping the discussions within each field of interest. The participants expressed a wish for the disability organizations to not only being part of and describing the problems, but also in suggesting solutions in a constructive manner. From an individual point of view, they described UD as supporting people in having new experiences, breaking isolation, getting new interests, wanting to move on and learn more, meeting other people with similar interests, and being happy.



Figure 2. The participants in action during the workshops. (Photos: Sarah Granholm)

Contributing to a shift in mindset

The participants discussed the shift towards an inclusive mindset at length. Signs and signage came up several times, and the participants questioned the frequent use of the symbol depicting a person in a wheelchair to highlight for instance a door opener, since this device was often used by other people than people with disabilities. Here, UD provided the participants with a way of thinking critically about and discussing categorizations of people, and if and when this is needed. In the door opener case, the participants came up with the idea to switch the disability sign to a pictogram based on function instead, i.e. what happens when you push the button.

Many topics that came up during the workshops involved the relation between specialized design and inclusive design. The participants from disability organizations highlighted that also within their own organizations, there is a need to understand different needs. They reflected on how UD relates to the understanding of accessibility that they were used to. They discussed other perspectives as well, such as coming to Sweden as a refugee, children's perspectives, parents with prams, and older adults. From the participants' point of view, creating a more accessible society also fosters integration, and UD opens up for a kind of dialogue that frames the understanding of accessibility as part of an inclusive agenda.

Exploring and experiencing own and others' perspectives

The workshops offered the participants a chance to experience their own and others' perspectives. The use of the seven UD principles supported a way of seeing new aspects of the familiar, and at the same time experience them from other people's perspectives as well. Participating in the workshops, and walking about taking photographs while

discussing with the other participants, together contributed to a better understanding of UD.

For the staff, the workshops also made them realize that some of what they were already doing fits very well within a UD perspective. In a way, they are already used to meeting a range of different people visiting the museums. The staff said that everyone is different, and not all visitors will be able to experience all aspects of the museum's exhibitions. Their foci rested on feeling comfortable, enjoying the content, and having a positive experience of the museum as a whole. While the staff were recognizing UD aspects in their existing practices, they also said that they could think more on UD and shift from thinking in terms of extra efforts for particular groups of visitors, to a more inclusive way of framing their pedagogy and design of the exhibitions. They thought UD might be particularly useful, when it comes to getting the visitors to engage more with the exhibitions. Nowadays, it is often allowed and even encouraged to touch, pull and open some parts of the exhibitions. This opens up for new experiences and the use of different senses to explore the exhibitions. However, many of the visitors are stuck in an old paradigm, where you have to regard the objects from a distance. By utilizing UD, the staff saw an opportunity to nudge all visitors towards engaging more fully with the content. But, they also acknowledged that this could still not be allowed in all types of exhibitions and that it might be difficult for visitors to know when it is allowed or not.

Deliberating priorities, compromises, and optimization

A discussion about gluten and gluten-free food sparked an intense debate among the participants, regarding how to think about the "for all" in UD, and how to address several conflicting demands. Should all food be gluten-free? Free of soy as well? And dairy? Or can the notion of flexibility in UD aid in understanding how to optimize and prioritize among different needs and preferences? Maybe it is better to focus on the process leading up to different kinds of cookies instead of the cookies themselves? This is just one example of many similar discussions where the solution demands finding the best option, while weighing together several practical aspects. Another angle on prioritizing, focused on the fact that only some kinds of functioning usually are catered for. The three most common ones are sight, hearing and physical abilities. Physical aspects often dominate and allocate large parts of the available budget. One of the participants came up with a suggestion as to why separate solutions for people with physical disabilities are so dominant: when you install for instance a separate elevator it becomes really obvious to others, such as politicians, management, and the general public, that you care and have put in some real effort. If it was a less stigmatizing and inclusive solution it would become more tacit and less visible, and the same goes for many solutions regarding cognition – they are less obvious.

The participants discussed that UD might be overwhelming when you first encounter it and start to open up different perspectives. Where do you start? How do you prioritize and whom can you involve in the decision-making process? Can UD even make some exhibitions more boring, for instance by an increased lighting of darker parts, or by pinpointing and explaining every detail to the extent where some of the attraction is lost or spoiled? One optimization point that the participants brought forward was that no one should ever be completely left without a viable alternative.

Implementing UD in museum development processes

One part of making the leap towards UD is to start implementing it in development processes. In the museums' case, UD has to be part of and guiding the process from the very get-go, from early synopses and first sketches and on. The participants were quite convinced about the importance of building on a UD mindset from start, and also discussed whether they by avoiding separate solutions could avoid some of the costs associated today with "adaptations" of the exhibitions to different target groups. One of the participants cited a saying in Silicon Valley and related that to UD: "Fail fast, fail cheap". From this transpired a discussion about the potential of different stakeholders and interested parties acting as alpha and beta testers in the development of new exhibitions. From the disability organizations' point of view, it would be beneficial to have established habits and routines regarding how they can be involved and support development. The participants said that when they are involved in user testing and other similar activities, they are often one-off activities, and never reaches the point of ongoing work. It is a new process and a separate solution every time, which raises the thresholds regarding if and when they are involved.

Procurement was another process aspect that was highlighted several times. The staff participants described getting better at procurement as a key aspect in furthering an inclusive agenda. Their experiences were that even when they tried to find inclusive solutions, these could be quite hard to find. For instance, some suppliers of elevators do not have tactile buttons as part of their offering. The person doing the procurement has to have a firm grasp of what is needed. The same goes for architects, exhibition designers and other professionals involved.

Staff ranking of the UD principles

At the last workshop, staff from both museums convened to discuss their experiences during the workshops, and what thoughts they had gotten regarding UD in relation to museum contexts/activities, with the future in mind. There were five participants. During the workshop, they were given several different tasks. One of them was to rank the different UD principles from their own perspective. By then, they had been working with and discussing UD for eight hours in total, and they hence had a rather deep understanding of UD and of the different underlying principles. We had printed the seven UD principles on an A3 sheet. The participants were given ten adhesive dots per person and were asked to put them next to each principle in whatever order and weight they wanted, in relation to their importance in a museum context. Figure 3 is a diagram showing their overall ranking of the principles, based on 50 dots (5 persons * 10 dots) in total.

In the discussions regarding accessibility, inclusion, and UD during the photo workshops, the staff initially brought up many different physical aspects. They did the ranking exercise much later in the process, i.e. when they knew UD a lot better. It was still interesting to see the low scores on principle six and seven, which are the ones most clearly related to factors such as size, space, and effort. Instead, the principles they ranked the highest were Equitable use, Simple and intuitive use and Perceptible information. When looking at what was discussed during the workshops, and at the results from the content analysis as well, many examples related to information and signage. Principle three and four are important for both of these. The first principle,

Equality in use, also got a high ranking. This was expected since equality is a core tenet of UD and came up in a number of ways during the discussions.

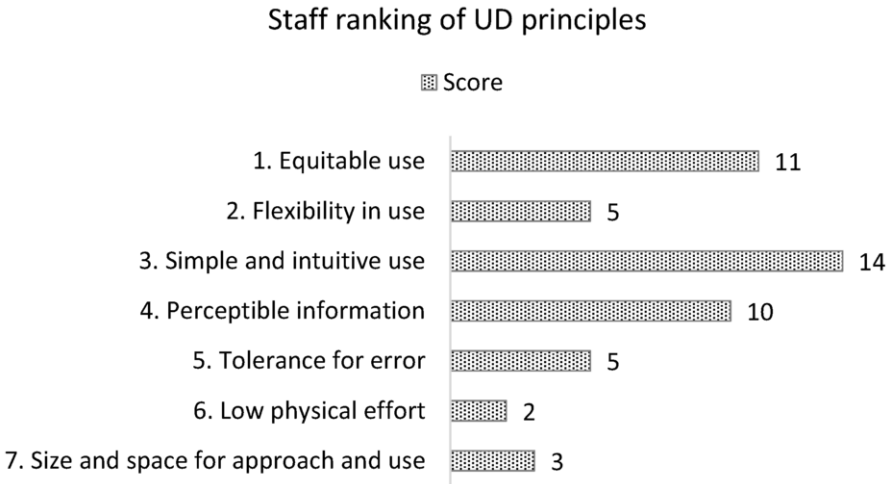


Figure 3. The overall staff ranking of the seven UD principles and their importance in a museum context.

Discussion and conclusions

Current practices when dealing with accessibility at museums are to a large extent built around the notion of accessibility for people with disabilities. This is reflected in a lack of habits of discussing other perspectives than the ones emanating from just people with disabilities. Adopting a UD mindset demands a different way of reasoning. Instead of regarding some people as normal and the rest as more or less deviant from the norm, and in need of adaptations and specialized design, thinking in terms of diversity offers a different starting point. Maybe just saying out loud that everyone is different can help. For the participants in the study, taking photographs of and discussing inclusive and exclusive aspects of design opened up for a wide range of topics related to UD of museums and exhibitions, and several threads besides that topic. The part where we all struggled a bit was in discussing priorities, compromises, and optimization. Having a visitor to the museum who is blind is not an argument against printed information or signage – it is an argument highlighting the need to provide several options to achieve equal results, in this case taking part in and experiencing the exhibition.

In taking and discussing the photographs, the participants also took part in collecting empirics and in the analysis of the material. Doing the activities together, in situ, gave the discussions a grounding that would have been hard to reach otherwise. Since all participants took part in several workshops, it also gave them a deepened understanding of UD as the process went along. Using photography seemed to work as intended and provided both information and inspiration for the participants to discuss. Since using photos in this way tends to favour taking pictures of physical aspects, we explicitly asked the participants to have this in mind and try to find examples for instance also relating to cognition and perception. One of the participants had severe vision impairments, which

led us to describe what was in the photo in question. Since he had also been part of exploring and walking around the museum while taking photographs, he was already familiar with the environment and some of what the photos depicted, and this helped a lot as well.

Using the seven UD principles to examine an already existing environment the way we did, has its limitations. It provided us with a means of making UD concrete for the participants, but we also stressed that the principles' main purpose was to guide design processes leading up to finished design. Even though we discussed already existing design, the participants came up with several solutions that were more inclusive and/or less stigmatizing as a result of the discussions, since they had UD in mind.

It would be interesting, in future studies, to take this one step further. The workshops were primarily designed to introduce UD and to create a foundation for a constructive dialogue about UD among participants with different backgrounds and roles. In this case, the context was cultural heritage, but we have used similar workshops in other areas as well, and as part of educating future industrial designers. The results from this study have encouraged us to apply for funding for new workshop-based participatory studies. We have also considered developing the workshop format into a set of teaching material for introducing the UD mindset and principles to a wider audience.

Several of the participants expressed an interest in continued collaboration, both staff from the museums and participants from the disability organizations. One suggestion from the workshops was to have a group of people from the disability organizations available as discussion partners, who could be called upon during various stages of the process of designing new exhibitions at the museums. Maybe working like that, in an iterative process, one exhibition at the time, might lead to a new model of collaboration between different stakeholders and other interested parties, bringing us closer to a more inclusive society and providing new knowledge of the value and implementation of Universal Design.

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