A Workshop on Disability Inclusive Remote Co-Design

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ABSTRACT

The COVID-19 pandemic forced researchers to find new ways to continue research, as universities and laboratories experienced closure due to nationwide lockdowns in many countries worldwide, including conducting experiments, workshops, and ethnographic work online. While this had a significant impact on the majority of research work across SIGCHI, research relating to disability and ageing was most impacted due to the additional challenges of recruiting participants, finding accessible online platforms, and ensuring seamless participation while juggling platform accessibility issues, facilitation, and supporting participants' needs. These challenges were more extreme for disabled researchers. In this workshop, we aim to bring together researchers, designers, and practitioners to explore effective strategies and brainstorm actionable guidelines for supporting disability inclusive online research methods and platforms.

CCS CONCEPTS

• **Human-centered computing** → Interaction design; Interaction design process and methods; Participatory design.

KEYWORDS

Online research, co-design, disability inclusion, accessibility

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1 BACKGROUND

In design history, various terms and methods have been developed to represent users' participation in the design process [24]. Emerging from the participatory design movement, the co-design approach aims to renegotiate roles and power dynamics between researchers, designers, and participants [8, 10] and create an inclusive space for engaging in more equitable co-creation activities. Disabled people have been excluded from significant positions in design activities resulting in disenfranchisement and powerlessness [25]. In their seminal paper, Mankoff et al. [18] argued for disabled people's inclusion in research about them. They suggest that "engagement with one or a few disabled individuals in a deep way, over time" is needed to understand the "true experience, likes, dislikes, thoughts, and feelings of participants". Co-designing with disabled people can challenge false assumptions and misconceptions about disability that designers and researchers might have simply due to lack of lived experience.

Traditionally, co-design involves one or more ideation and design workshops where the product users, designers, and other stakeholders explore the problem space, engage in collaborative activities and develop prototypes of potential solutions. Although, co-design workshops often include visual note-taking tools and materials, tactile, auditory, and olfactory materials have been used to create multisensory prototypes [3, 19] with the goal of increasing the accessibility of various activities for people with sensory disabilities [1, 20–22]. Since the start of the COVID-19 pandemic, researchers have explored ways to adapt co-design methods from physical to digital spaces to ensure that participatory activities could continue even when in-person engagement was not possible. While recent work has demonstrated clear benefits of online co-design, such as accessing "hard to reach" populations and reduced cost of running co-design workshops [13], it also highlights the challenges including barriers to participation due to "poor internet connection" and lack of participant engagement with the activities (e.g., mic on

mute, video switched off) [9]. Additionally, for disabled people, the shift to digital has been a double-edged sword. While online collaboration has lifted the burden of travelling to workshop venues, the inaccessibility of online collaboration platforms has restricted participants' engagement and contribution [14]. It also places the burden of adapting to the online collaboration space on the participants, which may present additional challenges for people who are unfamiliar with or faced with inaccessible collaboration methods and tools [14, 16].

Digital accessibility has been discussed in SIGCHI and SIGACCESS publications for many years, with increased interest in the recent years on better design of online collaboration platforms [11, 23]. The COVID-19 pandemic has highlighted the barriers to remote collaboration opportunities and the need for accessible online collaboration platforms [15, 16]. Recent research has investigated the remote work practices and the impact of remote collaboration for disabled people where teams are distributed across space, time, and have different access needs [4–6, 15, 17]. Davis et al. [7] propose spatiotemporal quadrant model, distributed across space (physical, digital) and time (synchronous, asynchronous) to engage new communities in co-design when physical proximity is not possible. They suggest a combination of 'low-contact' asynchronous and synchronous, digital and analogue activities including role play, rapid prototyping, and cultural probes can be employed to facilitate co-design across time and space. [26]. Garcia et al. [12] employed an experienced based co-design approach to engage COVID-19 patients and their families while self-isolating at home. They combined a series of online interviews with online ideation and co-design workshops to develop an online community resource for health information for COVID-19 patients. Chen and Jeng [2] explored adapting the double diamond [27] design model to online design workshops. They developed a codesign workshop playbook combining distributed spatiotemporal methods to achieve effective co-design when participants are not collocated and available at the same time.

Despite individual examples of remote accessible co-design, there have been few attempts to promote avenues for mutual exchanges and discussions between researchers and to capitalize on the learning from different research teams to produce insights that might benefit the community at large.

Our workshop will bring together researchers from the HCI and Accessibility communities with experiences conducting remote co-design research involving disabled participants and/or disabled organizers and facilitators. The workshop will represent an avenue for group learning and reflection, where researchers will be able to connect with each other and begin to collate experiences with the goal of sharing learnings and best-practice advice. Ultimately, we aim for these shared experiences to become the base for developing an openly available repository of resources, advice, and case studies for other researchers in the SIGACCESS, and HCI community more broadly, seeking to conduct remote co-design research in a more inclusive and equitable manner [16].

2 WORKSHOP GOALS AND OUTPUTS

The main goal of this workshop is to provide a space for reflection on the strategies researchers and designers have used to conduct virtual/remote co-design with disabled and aging populations and drive an agenda for future disability inclusive research and design in HCI.

The workshop aims to develop a community of practice around inclusive and accessible co-design. The community will be set up on Discord platform for workshop participants prior to the workshop and, after the workshop, will also be made open to the public through free membership. The community of practice will produce an open-source repository of methods, toolkits, and best practices on in-person, remote, and hybrid codesign workshops with disabled and aging populations. A selection of case studies from the workshop participants will be published in an article in ACM Interactions Magazine.

Diversity and Inclusion

The organizing committee is diverse and has expertise in accessible online platforms to ensure workshop accessibility (detailed in section 5). The organizers are committed to inclusion of participants across abilities, gender, ethnicity, location, institution, seniority, and research background. This will be ensured through the pre-workshop questionnaire participants will complete at the time of making the submission. The workshop plan will also accommodate any access needs the participants may have and will ensure use of accessible content and platforms for equitable participation. The participants will be asked to make workshop submissions fully accessible and include alt-text image descriptions. We will also have a sign language interpreter and live transcripts. Alternative communication methods will be used during the workshop including text and voice to ensure accessibility for closed captions and screen reader users.

If participants require financial assistance to participate in the workshop (such as covering workshop registration fees or purchasing internet boosters) we will refer to the SIGACCESS Diversity and Inclusion Fund (https://assets22.sigaccess.org/dei_scholarship.html) in the first instance and engage with the ASSETS organizing committee to provide additional support if needed.

3 EXPECTED WORKSHOP ATTENDEES AND AUDIENCE

This workshop will be of interest to researchers, designers and practitioners interested in developing strategies for disability inclusive digitally mediated collaborative work in HCI research. Primarily, we expect the attendees from the following groups:

- ◯ Working with people with sensory, physical, and cognitive impairments
- ◯ With expertise in digital accessibility
- ◯ Interested in digital accessibility and inclusive design
- ◯ Working with older people and the impact of ageing on digital technology use

4 WORKSHOP PLANS

From previous experience of organising workshops, the organising committee has decided to propose this workshop as a 3.5 hour virtual event. This is to ensure inclusivity for all participants and avoid additional fatigue which is common in online workshops [28]. The workshop capacity will be limited to 15 participants.

4.1 Pre-workshop Plans

Before the Workshop, we will invite the ASSETS and the wider research and design community working in HCI and accessibility to share challenges, learning, and thoughts based on their personal experience of working remotely, particularly on the impact of COVID-19 on remote research and collaborative work with disabled people and older people. We will use Twitter hashtags #CoDesign #Disability #Aging #COVID19 and #ASSETS2022 to target potential conference attendees, as well as #DigitalAccess #Accessibility #DigitalInclusion and tag SIGCHI and SIGACCESS Twitter handles to reach a wider audience interested in these topics. The responses will be collated in a Google Doc as a working document which will be publicly shared. This document, along with workshop submissions, will help set the agenda for the live Workshop discussion. We will also set up a Discord server to engage participants prior to the workshop.

Google Docs will be used for online collaboration during the workshop. Workshop schedule and content structure will be prepopulated in the shared Google Doc prior to the workshop. Participants will be asked to add their short bio and social media information in the document.

4.2 Workshop Structure

We include the suggested workshop structure below. The organizers are flexible to adjust the schedule to most appropriate timings for workshop participants. A tentative timeline of the workshop is summarised in Table 1.

4.2.1 Introductions (10 minutes). The workshop will start with an introduction of the organisers and the participants, their background and research area and motivations for the workshop.

4.2.2 Participant Presentations (~ 50 minutes). Participants will present a 3-minute overview to introduce the context of their workshop submission to other participants.

4.2.3 Activity 1: Discuss methods and tools for future of Co-design (45 minute breakout room + 15 minute general discussion). Next, we will feature a guided discussion and reflections on the barriers that researchers can face when pursuing online research with disabled people and older people. Depending on the number of attendees, breakout rooms will be set up to encourage engaging conversations between attendees. To stimulate more contextualized and practical reflections we will engage participants in targeted discussions on a variety of possible scenarios including:

- Working with people with sensory impairments
- Facilitating co-design as a disabled scholar
- Working with people with co-occurring disabilities
- Working with children
- Working with older adults
- Working in the Global South
- Working across cultures and language

4.2.4 Activity 2: Formulate ideas for sharing best practice and advice (45 minute breakout room + 15 minute general discussion). The final activity will focus on building a community of practice and developing best practices on remote co-design work. Participants will work in small groups to ideate future practices to improve inclusive online co-design practices and creating a shared resource for the community of practice.

4.2.5 Closing (10 minutes). We will conclude the workshop with a summary of group discussions and propose next steps for sharing best practices with the wider HCI community.

4.3 Post-Workshop Plans

The post-workshop activities will focus on developing a community to support each other and continue the work either as a whole group or as sub-groups established after the workshop. The Discord server will serve as the online platform for communication and identify collaborations and develop and publish shared resources on best practices for online co-design work. The summarized workshop findings will be disseminated through our website and published an article in the ACM Interactions magazine summarizing the main contributions of the workshop and a reflective account of the workshop lessons and findings. The workshop participants will be invited to contribute as co-authors.

5 WORKSHOP ORGANISING COMMITTEE

Maryam Bandukda (main contact)

Maryam Bandukda is a final year PhD student at University College London Interaction Centre (UCLIC) and Global Disability Innovation Hub. Maryam's PhD research focuses on enabling and enhancing experiences of blind and partially sighted people in open spaces through participatory and co-creation methods. During the pandemic, Maryam has explored accessible methods for to overcome the barriers to blind and partially sighted people's participation in online research. Her EPSRC funded PhD research is supervised by Prof. Catherine Holloway, Prof. Nadia Berthouze, and Dr. Aneesha Singh.

Giulia Barbareschi

Giulia Barbareschi is a JSPS Research Fellow in Disability and Assistive Technology Innovation at the Keio School of Media Design in Yokohama and an honorary lecturer at the Global Disability Innovation Hub and the UCL Interaction Centre in London. Her research interest centres on the design, development, and evaluation of new and existing technologies to empower people with disabilities living in different parts of the world. A recent focus has been on how assistive technology influence self and external perceptions of disability across diverse cultures and how the work of disabled artist can help to shift existing stereotypes surrounding disability. Since the start of the COVID-19 pandemic, Giulia has been exploring different ways to make co-creation processes more accessible and engaging through the combination of hybrid approaches featuring both synchronous and asynchronous activities.

Aneesha Singh

Aneesha Singh is a Lecturer (Assistant Professor) of Human Computer Interaction at UCLIC. She is interested in the design, adoption and use of personal health and well-being technologies in everyday contexts. Her research focuses on digital health, ubiquitous computing, multisensory feedback and wearable technology, especially in sensitive and stigmatized populations. Aneesha has explored remote and in-person codesign methods to explore user needs for technology design in the context of her work.

Table 1: Workshop schedule

Duration	Activity
10 min	Welcome and Introductions
3 min per participant (~50 min)	Participant presentations including 2 key issues and learnings
10 min	Break
45 min + 15 min general discussion	Activity 2: Discuss methods and tools for future remote codesign
10 min	Break
45 min breakout + 15 min general discussion	Activity 3: Formulate ideas for sharing best practice and advice
10 min	Closing and next steps

Dhruv Jain

Dhruv "DJ" Jain is a PhD candidate in Computer Science and Engineering at the University of Washington, advised by Prof. Jon Froehlich and Prof. Leah Findlater. His research intersects human-computer interaction (HCI) and applied machine learning and focuses on inventing novel sound sensing and feedback techniques to support accessibility applications.

Matiraye Das

Maitraye Das is a PhD candidate in Technology and Social Behavior at Northwestern University. Her research in Human-Computer Interaction and accessible computing primarily focuses on making collaborative content production more accessible and equitable in ability-diverse teams, i.e., teams involving people with and without disabilities. Taking a community-centered research approach, she investigates what roles technology and design play in creating accessibility in the contexts of collaborative writing, creative making, and remote work. Maitraye has conducted remote and in-person design exploration studies with blind and visually impaired writers and fiber artists pre- and during pandemic.

Tamanna Motahar

Tamanna Motahar is a Ph.D. student in the School of Computing at the University of Utah. Her research broadly focuses on the intersection of Human Computer Interaction (HCI), Personal Informatics, and Accessibility. Through user-centric approaches, her research aims to understand how Personal Informatics can better help individuals with severe motor disabilities in their self-care activities. Her research goal is to design accessible technologies to impact and empower marginalized populations worldwide with their personal data. Her PhD work is supervised by Prof. Jason Wiese.

Jason Wiese

Jason Wiese is an Assistant Professor in the School of Computing at the University of Utah. His Human-Centered Computing research program is primarily focused on personal informatics and health, with a particular focus on technology users who have motor disabilities. He has published on the accessibility of HCI methods to people with motor disabilities and has conducted remote and in-person studies with this population as well.

Lynn Cockburn

Lynn Cockburn is an Occupational Therapist, and Adjunct Professor at the University of Toronto. Her research interests focus on mental health, community development, and disability-inclusive research.

Amit Prakash

Amit Prakash is Associate Professor and Convenor of the Centre for Accessibility in the Global South (CAGS) at the International Institute of Information Technology (IIIT) Bangalore. The focus of his recent research and consulting efforts has been equity and inclusion in matters related to technology designs and policy choices. He has co-founded Vision Empower and Vembi Technologies, which are working to create accessible learning ecosystems and digital solutions for children with visual impairments in India.

[Profile page: https://www.iiitb.ac.in/faculty/amit-prakash]

David Frohlich

David Frohlich is Professor of Interaction Design and Director of Digital World Research Centre at the University of Surrey, UK. The Centre is currently researching the topic of 'Assistive media for health and wellbeing' to understand the therapeutic nature of media in a variety of contexts. These include dementia care, loneliness in older people, and digital sight correction on headsets and 3D screens. David developed a simple co-design process called Focusgroup+ with older people's groups and has been trying this out remotely during the pandemic.

Catherine Holloway is Professor of Interaction Design and Innovation at UCL Interaction Centre, the Academic Director and co-founder of Global Disability Innovation Hub and co-director of the World Health Organization Collaborating Centre for Assistive Technology at UCL. Her research focusses on the intersection of disability, design and innovation and has spearheaded the disability interactions framework for human-computer interaction.

6 PARTICIPATION CALL

We invite researchers, practitioners, and designers with an interest in creating accessible online co-design methods and tools for people of all abilities to submit case studies from their recent work in co-design. Submissions can be made in the form of position papers (up to 1,000 words excluding references) in single-column submission template stating their existing work or their position with respect to the workshop topic. Submissions should also include up to two discussion points and issues that participants would like to discuss in the workshop. We also welcome alternate submissions in the form of presentation slides, design sketches, and posters. Authors must ensure the accessibility of their submission by following the ASSETS'22 Guidelines (https://assets22.sigaccess.org/guidelines-policies.html).

Submissions can be made, by September 30, 2022, on the workshop website (to be confirmed) by completing a short questionnaire

which includes demographic questions to help the organizers establish authors' background. Submissions will be peer-reviewed by the organising committee. Selected case studies will also be published in an article which would be published in ACM Interactions Magazine after the workshop. Participants interested in co-authoring the article can indicate so in the questionnaire.

The submissions can be individual or group. If accepted, at least one author must attend the workshop at ASSETS'22 (online) and should prepare a short 3-minute overview to present their submission to the workshop participants. All accepted submissions will be published on the website prior to the workshop.

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