

Working With Participants

Christopher Power and Helen Petrie

Abstract Involving users in the design and evaluation of websites is one of the keys to ensuring they are accessible to as wide a range of people as possible. In this chapter, we present the core barriers and solutions that are often encountered by participants in user research activities that are undertaken as part of modern user centred design processes. We close the chapter with a discussion of future areas of research around measurement of accessible user experiences and a short list of key things to remember when undertaking user research with people with disabilities.

1 Introduction

Working with users in a participatory, cooperative and meaningful way is now an important aspect of modern web design. Whether it is to understand the goals of users, co-design of new websites¹, or evaluate the experience users have with them, involving users in all stages of user research is vital. This increased emphasis on user research means we have to make our design processes inclusive and accessible as well.

When user researchers work with users as a regular part of their design work, it is essential to include people with disabilities and older adults. Inclusion at early stages of design shifts the discussion of accessibility away from being something that is done as a special case, as a niche design problem, or as something done after

Christopher Power
Department of Computer Science, University of York, York, UK, YO10 5GH, e-mail: christopher.power@york.ac.uk

Helen Petrie
Department of Computer Science, University of York, York, UK, YO10 5GH, e-mail: helen.petrie@york.ac.uk

¹ In this chapter we use website broadly to mean both more traditional content heavy websites and more modern interactive web applications

the fact, to being about designing for the diversity of users from the outset (Clarkson and Coleman, 2015; Clarkson et al, 2013). From this diversity, there will come a variety of challenging and potentially conflicting requirements (Newell and Gregor, 2000), and creative designs that are sensitive to those different needs are needed to resolve them. This is easier to do throughout a design process rather than as a later adjustment at the end of a design cycle.

When it comes to the evaluation of websites, there is a need for pragmatic yet robust user evaluation with people with disabilities and older adults to ensure that there are no barriers to using it for them (Sears and Hanson, 2011; Newell et al, 2007). Often this takes the form of checklists to ensure technical accessibility, and then collecting a broad set of problems that users encounter after technical accessibility has been achieved (Power and Petrie, 2007; Power et al, 2012). However, it is not sufficient to just ensure that there are no barriers, it is necessary to understand the lived experience of people who use our websites, as to whether or not the planned accessible design choices actually meet their needs and preferences (Hedvall, 2009a).

This chapter provides an overview of the common issues that researchers encounter in working with people with disabilities and older adults in user research along with solutions and hints regarding how to make user research activities more inclusive. We discuss activities that employ *generative user research methods*, which are intended to help inform design, and *evaluative user research methods* that are used to evaluate technology. In this chapter, we do not aim to give complete details of the different methods, but will instead leave that to other authors within this volume for readers who want to read more about each of them. We aim to provide an overview of these methods such that they could fit in user centred design processes which is a common framework of design processes used by many web designers. For those who work with other models such as design thinking (Brown, 2009), or the double diamond British Design Council (2007) or more holistic individual approaches (Hedvall, 2009a), the framing we provide should be readily adaptable to any of those approaches.

2 General Advice

In this section, we discuss a wide range of issues that relate to working with participants no matter the activity you are undertaking or the setting in which researchers are conducting their sessions with people with disabilities. Specifically, we discuss: the ethical conduct of working with participants, participant recruitment and engagement, the physical environments in which studies frequently occur, the preparation of alternative format or enhanced materials, the provision and support of individual assistance, and issues of language relating to working with people with disabilities.

2.1 Ethical Conduct

Before starting any user research with people with disabilities, as with all research with humans or animals, ethical approval should always be should obtained for the activities to be undertaken. For researchers in universities and research institutes, this is standard practice and there are well developed procedures for such approval. For commercial organisations undertaking user research, there may not be an appropriate authority to give ethical approval. In such cases, creative alternatives are needed. At the very least, the protocol for the research should be checked by someone in the organisation not involved in the research against an ethical research checklist (Rosnow and Rosenthal, 2012). A larger organisation may be able to set up its own ethics committee with a combination of people from within the organisation and several “critical friends” from outside the organisation. In addition, in some countries, some groups of people with disabilities (for example those with intellectual disabilities) and older people are considered “vulnerable” groups, so researchers and practitioners need to obtain specific approval for working with these groups. In the United Kingdom, this is a Disclosure and Barring Service CheckDisclosure & Barring Service (2018).

2.2 Recruitment and Engagement

Recruiting sufficient numbers of participants from particular populations can be one of the most frustrating aspects of conducting user research with people with disabilities and older people. However, with some patience and persistence, this problem can be overcome. For participants with particular disabilities, there are often local or national organisations which can be approached. However, such organisations do not usually have large numbers of people from their particular group ready and waiting to be involved in research. It may be necessary to give a talk about the research at a general members meeting, take part in some of the organisation’s activities, or write a short article for a newsletter. These activities may seem time-consuming in the short term, but in the long term can build very valuable partnerships with such organisations. Once some participants are recruited and have been involved in research, snowball recruiting can be very valuable in expanding the pool of participants. This involves asking participants to suggest being involved in research to other people from the same group that they know. This is best done after an individual has been involved in some research, and has hopefully found it an interesting experience, so can make a positive recommendation.

Recruiting older participants is somewhat easier, as there are many organisations of older people and many activities which attract older people which can help with recruitment. In addition, we have found that retired people are often curious about learning more about new technologies, and are more flexible and giving with their free time. We have found that publicising our research through the local community

centres, golf clubs and volunteer groups have been very helpful in recruiting older participants.

An important aspect of recruiting participants is to make the research an interesting experience for them. This may include explaining the background of the research, explaining the choice of methods used in the research and providing feedback after the research is complete about how it influenced the development of the system (for example by providing a short report for participants). In addition, participants' should be offered a pleasant social experience, perhaps meeting a number of members of the organisation, having a tour of the organisation and appropriate refreshment breaks during the research session. Finally, appropriate recompense for the time and effort should be offered to participants. We always offer the equivalent to the salary we pay casual research assistants, as this is a very similar role being fulfilled by the participant. In some situations, such as for tax reasons, it is necessary to offer a gift voucher rather than cash, and many participants find this more appropriate. Some participants ask that their "fee" get donated to a charity and if a user organisation or charity has helped recruit participants, we recommend researchers make a donation to that organisation as well.

When participants are recruited it is important to provide some information about what will be involved in participating in the research. Participants should be led through a *briefing*. This may involve some elaboration of the research goals but not revealing so much that it risks biasing the participants' reactions. For example, in our work researching at the strategies of people with disabilities on the web (Power et al, 2013), we had to be very careful explain to the participants that we wanted to understand how they browse the web, without revealing that we were looking at low level interactions they were having with the web content. However, a fine balance must be struck where they are given sufficient information so they can give informed consent, and as such they must have a reasonable idea of what is going to happen and how they can withdraw or refrain from doing something they are asked to do. Further, participants should also understand what will happen to the data collected from them in the session, how it will be stored, for how long, and who will have access to the data. When the participant is clear about all these aspects, they should be asked to sign an informed consent form to this effect.

At the end of the session, the participant should be *debriefed*. In particular, if there was anything which was not revealed in the briefing session, this should now be fully discussed with the participant, and they should be given ample opportunity to ask questions or make comments about the research. This not only helps in creating an interesting experience for the participants, but can often reveal important information that was not gathered during the research session itself²).

² Note: If new information comes to light that researchers want to use as primary data as a result of these after session discussions, researchers should confirm with participants that they can indeed use it.

3 Physical Setting

When conducting user research with people with disabilities and older people it is particularly important to think about the physical setting of the session. Researchers should identify how participants will travel to the venue, whether public transport accessible to the participants, and whether they can find their way from the public transport to the exact location in the venue. Similarly, if participants come by taxi, participants need to make the journey from the taxi into the venue. Taxi drivers have been known to drop blind participants outside a large university building with instructions “it’s over there”.

For participants with mobility disabilities, researchers should ensure that lifts³ are available and that there are no stairs impeding entrances to rooms. The most embarrassing moment in the research career of one of the authors was when a wheelchair using participant finished an evaluation at about 5:30pm in a room on an upper floor of a university building. It was discovered only then that the lifts in the building were turned off at 5pm, something the researcher had never realised. No porters or security staff could be found, so eventually two very strong PhD students carried the participant in his wheelchair down the stairs. So a careful pilot of the physical facilities, at the appropriate times of day is always reassuring. Researchers need to ensure that surfaces are such that they can navigate easily (i.e. no heavy carpet) and that there is sufficient clearance for wheelchair access in both the doors and the interior furniture. Finally, researchers should ensure that there are displays, surfaces and/or materials at a height that is accessible for participants who use wheelchairs so they can participate in the full range of research activities.

3.1 *Preparation of Materials*

When conducting different user research activities, some research participants will require alternative or enhanced formats for different types of media or communication that are used before, during or after the actual sessions.

Participants with print disabilities (e.g. people who are blind, have low vision, or have dyslexia) often need different formats or alternatives to print materials. This can include large print, wider line spacing, alternative colour schemes or in some cases Braille transcriptions. It is also important to remember that participants who are pre-lingually Deaf (that is were born Deaf or lost their hearing before they acquired spoken language) may be reading text in a second language (their first language being a sign language), and so they may need simpler written materials than other participants.

However, which specific alternative formats are required are specific to the individual participating, and so it is vital to ask as a matter of course which format individuals would prefer. In general, we have also found it useful, where possible,

³ Elevators for some of our readers!

to provide information ahead of time instead of on the day of the session. This gives participants not only the opportunity to check to ensure the format meets their needs, but also gives them the opportunity to review the documents ahead of time for preparation for sessions (Kroll et al, 2007). A common omission made by new researchers is to not provide information sheets, consent forms or recruitment notices in alternative formats as researchers tend to focus on the main protocol materials.

If sessions include any audio material it is necessary to provide at a minimum a transcript of that material for people with hearing disabilities, and if using video it is preferable to provide captioning of video content, and if working with participants who are blind, audio description, which describes what is happening in the visual content of the video, may be necessary to fully explain video content.

3.2 Individual Assistance

Participants may wish to bring someone to assist them in research sessions. In some cases, this will be one or more professional personal assistants who are employed by individuals to assist in their day-to-day care. In other cases, participants may bring a family member or close friend acting as a carer, guardian or providing other needed support.

For participants who are Deaf it is important to establish what their level of competence in the spoken language is and whether they would be more comfortable with a sign language interpreter. An important misconception of newcomers to accessibility research is that people who are Deaf and use sign language will bring their own sign language interpreter with them. However, if working with sign language using people who are Deaf, researchers should arrange for appropriate interpreters to attend activity sessions. It is important to spend some time with the interpreters before the sessions, briefing them on any technical words or concepts which will be used, so they can be confident in interpreting.

In each of these cases, when planning user research activities, researchers should plan for refreshments and meals for those individuals, as well as for the participants, and provide places where they can wait comfortably if they are not going to be present in the planned activity sessions all the time. Some participants may bring a service animal, often a guide dog, with them. In these cases, most service animals will wait patiently with their owner until they are needed. However, providing a water bowl and identifying a place where the animal can have a comfort break would be appreciated by both the participant and the service animal!

3.3 Language

Researchers who are new to working with people with disabilities often are concerned about how to discuss a participant's disability or refer to groups of people

with disabilities. This section is specifically about the use of language when working with people with disabilities, for purposes of writing inclusively, please refer to the chapter on Inclusive Writing in this volume.

In general, people should not be referred to by their medical condition (e.g. having Glaucoma or Cerebral Palsy) except in specific medical contexts or if it is directly relevant to the research at hand. Further, the accessibility research field has evolved so that we do not refer to people as having specific functional limitations (e.g. visual impairment). The reason for this is that we are almost always discussing individuals' capabilities in relation to technology and whether the technology meets their needs and preferences. Thus, in this chapter we adopt the "people first" language of disability, such as referring to people with visual disabilities, or people who have learning difficulties. In particular, many people find it offensive to be identified just by their disability or group. So avoid using terms such as "the blind", "dyslexics", "the elderly" or "autistics". However, we recommend that when working with individuals and their identity as a person with a disability, that researchers ask as to how that person would like to be referred, as there can be many cultural and individual differences.

On a related point, when preparing materials for evaluations researchers need to think carefully about terms used information sheets, consent forms and other materials. References to "clicking" on particular components of a website assumes the use of a mouse, while statements that orient by direction, such as "using the box below", assume participants can get an visual overview of the two dimensional nature of the screen. Care should be taken to check materials for such language prior to sessions and in pilot trials of studies.

4 Generative User Research

With the above general guidance in mind, we now turn to the methodologies for understanding users and their needs and preferences. There are a wide variety of user research methodologies used across the field of human computer interaction (HCI) that can be applied in web accessibility studies. However, broadly speaking, there are a common set that reoccur across both research and practice on web accessibility. While there are more contextual design based methods or ethnographic methods that could be applied (Holtzblatt and Beyer, 2016), in general there are few examples of these being used in web accessibility research. Therefore, in this section, we focus on three different and distinct methods: online questionnaires, interviews and focus groups.

4.1 Questionnaires

In user research, questionnaires represent one of the most efficient ways to collect data from users. A well-crafted questionnaire distributed on the web could net a user researcher many dozens or hundreds of responses from across a wide range of people with disabilities or older people. However, there are a number of common pitfalls that can be encountered by researchers.

First, the survey platform itself needs to be technically accessible, meaning it complies with necessary web standards so that users of assistive technologies can successfully engage with the questions. Fortunately, many surveys now claim to be compliant with technical accessibility standards; however, the coverage of accessibility standards is varied at the time of writing across products. For example, Qualtrics Qualtrics (2018) and SurveyMonkey SurveyMonkey (2018) both provide statements that a set of their templates comply to both WCAG 2.0 and Section 508, with Qualtrics WebAIM (2018) providing external validation of this claim at the time of writing. Similarly, QuestionPro QuestionPro (2018) claims to meet Section 508. SnapSurveys SnapSurveys (2018) claims compliance to “web accessibility guidelines” and Section 508, but on further investigation the guidelines compliance is to WCAG 1.0. Google Forms Google (2018), one of the widely used free survey platforms, offers no statement about accessibility conformance, but does state that their forms can be used with screen readers for both creation of and responses to questionnaires. However, like many systems that allow content creation by non-technical authors (Sloan et al, 2006; Power and Petrie, 2007; Power et al, 2010), such compliance statements largely only apply if the authors ensure that the content is accessible. Common problems often encountered in surveys by participants with disabilities and older adults that we have noted include:

- Logos and other images lacking alternative descriptions, which means they are inaccessible to screenreader users
- Buttons not being labelled with words like Previous, Next and Done, but which instead have caret characters such as “>>” or “<<” that are misread by screen-readers
- Generic error messages on each question which result in users being disoriented, being unable to link specific error messages to specific questions
- Questionnaires with an autoscroll feature, usually question by question, which result in a variety of barriers related to users either not having control of what is in their viewport on a screen magnifier, or requiring extra key presses for people using keyboard navigation
- Poor layout of questions which results in large gaps between question text and interactive elements of the question
- Exceptionally long or complicated texts which are inaccessible to a variety of users with learning difficulties, cognitive disabilities or those who have lower literacy
- Questions without numbers, which prevent individuals from being able to orient themselves within the survey

Even if all the above problems have been avoided, it is valuable to check the questionnaire with a screenreader and using keyboard only navigation to ensure that there are no unexpected problems in a template due to the content that was added to it.

4.2 Interviews and Focus Groups

While questionnaires can provide a good means of gathering large amounts of information quickly, during the initial stages of user research it can be difficult to contextualise the data collected either due to the quantitative nature of much of the data collected, and the tendency for participants to not answer more broad and open answered questions. In these cases, supplementary information will often be gathered through interviews or focus groups. Focus groups in particular are useful for starting a co-design process with target users, brainstorming around possible design ideas for a particular website.

In terms of the practicalities of focus groups, much of the advice discussed in other sections of this chapter are relevant such as making sure the venue and all materials such as consent forms are accessible to the participants. In addition, there needs to be careful consideration of how the interaction will work. Obviously people who are visually disabled will not necessarily pick up non-verbal cues about when it is appropriate to start speaking, so the facilitator may need to be more directive than usual in guiding people when to speak and not letting people speak over each other (which renders a recording of the discussion difficult to transcribe). Focus group facilitators sometimes use visual aids in focus groups, such as a list of topics on a large flip-chart or screen, again obviously these need to be rethought with participants with visual disabilities. Participants who are Deaf may have an interpreter and the logistics of including an interpreter and the additional time that may add to the focus group need to be considered. Balch and Mertens (1999) provide excellent guidance on conducting focus groups with participants who are Deaf or have low hearing. Similarly, Kaehne and O'Connell (2010) provide useful information about conducting focus groups with participants with learning disabilities and Prior et al (2013) provide useful information about conducting focus groups with participants with profound speech and physical disabilities.

While it may seem economic and interesting to include people with different disabilities in the same focus group, we have found that this can be problematic both practically and in terms of the content elicited. In practical terms, mixing participants with different sensory disabilities can create challenges. For example, a participant who is blind cannot see when an interpreter is signing and may talk over them. Similarly, we have encountered situations where a participant who was blind found it confusing when a participant who was Deaf had a person of a different gender interpreting their sign language to spoken language. More generally, the pace of discussion with participants with different communication needs can be quite

variable, and mixing participants who need different paces can cause confusion and frustration within the group.

In terms of content elicited, because different groups of participants may have different issues with websites and use different assistive technologies to access the web, mixed focus groups can become discussions explaining the issues and technologies to each other. In some circumstances this could be interesting and useful, but in other circumstances it can away valuable time in a discussion that could be about a topic the user research wishes to understand.

One key question about focus groups is how many participants to include. Recommendations for focus groups in general range widely from three to 12 people (Preece et al, 2015; Lazar et al, 2017; Adams, Anne and Cox, 2008). Number of participants is always a balance between getting views from a range of individuals versus having enough time for each individual to express their views on the various topics of interest. (Sani et al, 2016) investigated the effects of small (3–4 participants) versus larger (6–7 participants) focus groups with older participants across several technology related topics. They found that the number of contributions per participant was much higher in the small focus groups (42.5 contributions/participant) compared to the larger groups (25.3 contributions/participant). However the number of different contributions in a given amount of time was much higher in the larger focus groups (larger: 20.5 contributions/10 minutes, small: 14.3 contributions/10 minutes). This suggests that if user researcher are looking for depth of information, then small focus groups are probably preferable, whereas for breadth of views, larger groups are probably preferable.

Interviews with participants with disabilities or older adults are generally an easier proposition. The usual procedures for interviews should be followed, with additional considerations as discussed on other sections of this chapter in relation to the preparation of materials, venue and language.

5 Evaluative User Research

Evaluations of websites are a key activity undertaken for a variety of different purposes. In some cases, researchers are undertaking formative evaluations to collect information from participants in order to refine the design through an iterative design cycle. In other cases, researchers are conducting summative evaluations of a website collecting information about a variety of usability and user experience measures of a nearly finished website. Finally, researchers may also be conducting experiments or other types of studies to try to understand the impact of different design choices on the experiences of different groups of people with disabilities or older adults, which can use techniques from either formative or summative evaluations.

For any of the above, the first step is to make sure that the website has a sufficient level of accessibility that it can be used by the participants involved in the test. This sounds like a bit of a paradox: having to do accessibility testing in order to do accessibility testing! However, if a participant is unable to even get started on a

website during an evaluation, then both the participants' time and researchers' time are wasted. For example, consider the example of testing a new editor in a virtual learning environment with screenreader users, or any user who navigates with a keyboard (Power et al, 2010). If it is impossible to reach the component of the web page where someone needs to enter text because it is either not in the tab order or entirely inaccessible by keyboard, then the test cannot succeed in collecting any meaningful data about the editor itself. As such, it is necessary that any website that will be used in evaluations be tested for technical accessibility and, preferably, confirmed to be compatible with key assistive technologies.

If an evaluation is going to be conducted in a user experience laboratory or other setting other than the participant's own home or work or study venue, it is often impossible for participants to bring their own equipment with them for use in an evaluation. It is important to identify during recruitment what different types of technology participants use and ensure that it is installed and thoroughly tested on any systems used in evaluative research studies. For testing websites, this includes both the browser and the participants' preferred assistive technologies. Further, prior to undertaking any tasks specifically related to research questions, participants need to be given the opportunity to configure the different pieces of technology such that they are comfortable working with the equipment. Exact replication of their home, work or study systems is unlikely to be possible all the time.

Alternatively, researchers can conduct remote evaluations with participants, which requires less set up, configuration and travel on the part of the participants, however some control is then given up by the researcher. These types of evaluations can be done either asynchronously, where participants conduct evaluations and then send in results to the researcher or, in situations where qualitative or observational data is required, synchronously through online meeting services (Brush et al, 2004; Petrie et al, 2006; Bruun et al, 2009; Power et al, 2011). When conducting remote evaluations or any kind, it is important that participants be given appropriate training material in advance of any testing, along with additional support in installing any extra software or settings on their systems (Petrie et al, 2006).

In formative evaluations, in which participants are documenting user problems on websites, it is common to use a concurrent verbal protocol (CVP) or a retrospective verbal protocol (RVP), where the most recent research with participants who are not disabled indicates CVP is generally superior to RVP (Alhadreti and Mayhew, 2018). However, when working with blind users, RVP appears to reveal more user problems relating to users interacting with a website, as opposed to content or information architecture problems (Savva et al, 2016). However, the workload in RVP is substantially higher, even when taking into account the offloading of concurrent problem identification. As such, if tasks are particularly long, RVP may result in fatigue in participants (Savva et al, 2015).

Researchers use summative evaluations to collect a wide variety of different performance and reference information in relation to their websites. This can include task success rates, efficiency, standardised scales or more complex measures such as mental and physical workload (e.g. the NASA Task Load Index (Hart, 2006).

However, while there can be some challenges related to providing these different measures in an accessible way (e.g. reading off pairwise comparisons in the NASA-TLX which can be time consuming and potentially fatiguing for participants), the more important challenge of this type of research is in interpreting the data. For example, consider an evaluation of a search system in which data is collected from both screenreader participants and sighted participants using a keyboard and mouse on a variety of website designs. It is likely that screenreader users will be slower to interact with a website, meaning intergroup comparisons may not be valuable in answering research questions except in very specific cases.

A similar problem occurs when researchers use standardised scales about usability such as the SUPR-Q (Sauro, 2015), or other user experience measures. Many of these scales have not been validated with people with disabilities, and given the lived experiences of people with disabilities are very different than those of their non-disabled peers, it can be very difficult to predict how these scales will perform, and may be of questionable value if comparing between groups. As a result, these sorts of measures should be used with caution by user researchers when drawing conclusions about the interactions of particular groups of participants (Cairns and Power, 2018).

6 Discussion

In the above sections we have discussed how to involve participants with disabilities in both generative and evaluative research. Many of the challenges, such as recruiting participants, preparing rigorous studies, and ensuring research is undertaken in a careful and considered way that respects the dignity of the participants, are common across all user research. When working with participants with disabilities we must consider the point of view of those participants who need adjustments and accommodations in both the physical and digital environments to ensure that the methods we use are accessible as possible.

We will now explore some of the future directions that user research methodologies can take in the next decade of web accessibility and beyond.

7 Future Directions

There are a variety of open questions in both generative and evaluative user research methodologies for working with participants with disabilities and older participants that should be explored.

In generative research, there are open questions about how key data collection instruments, be they Likert items or more complex measurement scales, interact with the modalities in which they are presented. For example, when translating a list of items from visual presentation into audio, is there a primacy effect for the

first item or a recency effect for the last? How can we detect such effects and are there ways to mitigate them if they do indeed exist?

More urgently, as emphasis for web design continues to push to be more participatory, with co-design being common, we need exemplar research methods that allow different groups of people with disabilities to participate. For example, what are appropriate and acceptable ways to include people with disabilities who have different needs and preferences in activities like affinity diagrams, empathy maps or scenario generation, all of which involve a great deal of collaboration, movement around a space, and working with post-its or other types of visual materials? Currently there are few examples in website design research and practice.

In evaluative research, the big open questions revolve around how we capture the accessible user experiences of people with disabilities on websites (Horton and Quesenbery, 2014). It is largely an open question about what are the important measures to capture about the experiences of our users. The measures that are captured currently still largely reflect traditional usability measures, such as task success and speed to completion, with the occasional capture of workload measures. Even with these measures, there is a lack of consensus of what is considered “good” or “acceptable” for different groups of users with disabilities and older users, and increasingly it is thought that these experiences are individual to users, and are deeply influenced by the interaction between technical accessibility and the lived experiences of users (Power et al, 2018; Magnusson et al, 2018; Hedvall, 2009b). For example, Sayago and Blat (2008) found that older people were not concerned about how fast they could interact with technologies, but were very concerned about not making errors, with quite a different pattern of attitudes compared to younger people. Further, there is a lack of comparison between different domains to nuance that discussion. For example, one would expect that users would want to ensure near 100% completion rates for banking, but the occasional problem when surfing Wikipedia for leisure may be more tolerable, or perhaps not, as the case may be.

Beyond these questions, there is an open question of what are the key experiential measures that should be used on the web with people with disabilities. While there is clearly a link between accessibility an experience, there is substantial work to be done in identifying which are the experiential indicators that will help drive design for web professionals (Aizpurua et al, 2015).

All of these questions are fertile areas for new researchers to improve our user research practices in web accessibility.

8 Author’s Opinions on the Field

Often in accessibility work, we encounter work that has not involved participants with disabilities in the generative or evaluative research on the web. The reasons for this are many and varied, but a common refrain is that it is either too difficult or too time consuming to work with people with disabilities as part of a research plan. We believe that it is essential that this attitude change across web accessibility. In order

for web accessibility to continue to move forward, we need far more in-depth work with participants with disabilities.

We encourage user researchers reading this chapter who have never worked with people with disabilities or older adults to rise to this challenge and enjoy the opportunity of working with these distinctive groups of participants. Working with participants with disabilities and older adults in the design process often presents some of the most challenging and interesting design opportunities for the web. Similarly, an evaluation of a new website that yields a positive and accessible user experience can be equally one of the most rewarding and satisfying experiences that web designers will have in their career.

9 Conclusions

Increasingly, web design employs both generative and evaluative user research to provide rich experiences to their users. Working with users with disabilities and older users throughout the user research activities in the design process is essential to ensuring a truly accessible website. The following is a short list of key things that user researchers should keep in mind when working with people with disabilities and older users as part of their user research activities:

- Always treat participants with respect and dignity from initial recruitment to the closing your research activities. This includes ensuring ethical treatment of participants, using user sensitive language, paying fair remuneration for their time, and ensuring that the facilities are supportive of their needs and the needs of their assistants, if appropriate.
- Anticipate the needs and preferences of participants for alternative format materials well before they arrive, seeking preferences from participants regarding how they will interact with materials in your studies.
- Ensure all websites meet at a bare minimum technical accessibility standards and preferably testing with a number of different assistive technologies prior to the start of a study.
- Identify what methods and measures will best support gathering the data needed for making your website as accessible as possible, including whether participants need to be locally supported in a lab, or if a remote evaluation is possible in an individual's home environment.

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