Web Accessibility Issues for People With Disability

Abstract

This paper argues that the accessibility difficulties people with disability (PWD) experience when participating in virtual communities are predominantly caused by societal attitudes, commercial interests and accessibility standardisation implementation at play on the web and/or offline. This paper will first outline what the original intention of Web 2.0 for web accessibility was meant to be. Then it will illustrate what some of the most common examples of accessibility issues for PWD are. This will be followed by discussion on why societal attitudes, commercial interests and standardisation have great influence on the existence of these issues.

Introduction

Information and Communication Technology (ICT), more specifically the Internet and the web, have become increasingly ubiquitous in modern society. This is to be expected as the technology improves, and the web's popularity and usage grows with each passing year. It is hard to avoid having to use the web in everyday tasks and interactions with others (Bakardjieva, 2011), from our family and friends to our education and professional work. However, many of us may take for granted that we can utilise the web in the way that we do in the first place. What if we could not listen to media with audio attached to it? What if we were unable to see video clips, or our computer or mobile interfaces altogether? What if we were unable to make use of the most commonly available keyboards and mice? Or our uptake of textual and visual information was slower than that of the average person? These are examples of how the simplest difference in sensory, physical or cognitive ability could significantly change how we can access information and communicate online. These examples also describe situations faced by many people with disability (PWD) who try to make use of the web.

While the focus tends to stay on the accessibility of information-oriented websites for PWD on the web, not as much attention has been paid to the accessibility of communication-oriented websites for this group (Jaeger & Xie, 2009, p. 56). This paper argue that PWD face accessibility difficulties when participating in virtual communities predominantly because of social attitudes towards disability and commercial interests at work behind the web and offline in addition to ineffective implementation of web accessibility standards.

What are virtual communities?

It is important to clarify what characteristics qualify a given online space to be a virtual community. One of the oldest explorations into how virtual community can be described comes from Wellman & Gulia (1997) and one feature of virtual community mentioned throughout their article is support and the many forms it can take. The Association for Computing Machinery - Computer Human Interaction Conference (ACM-CHI) in 1997 identified five integral features that characterise a virtual community: a common goal, interest or need; continual, active participation with some degree of emotional involvement; access to shared resources; mutual exchange of information and support to other members; "shared context of social conventions... and language" (Tilley, Bruce, Hallam & Hills, 2006, para. 49-50). This is a much more comprehensive description of how to define a virtual community. However, both these definitions mention one particular feature: the sharing of social support between members. Thus, the most integral feature of virtual community may be that members express motivation to share social resources in the form of support (whether it is informational, emotional, etc. in nature).

Virtual community and People With Disability

Empirical studies that try to determine how many virtual communities of PWD exist and what percentage they make up of all virtual communities could not be found. However, one study was found that investigated a group of PWD in order to learn how virtual communities

for PWD could be best facilitated (Tilly, Bruce, Hallam & Hills, 2006). It looked at people with "severe" physical impairment in Queensland. This study identified a model based on the real-life experiences of the PWD interviewed where they have tried to participate in virtual community. It is important to mention that this study included accessibility issues and barriers in its model. This shows that even though the participants of the study could provide examples of having experienced virtual community, it was not because the accessibility issues they faced were solved, but because they decided to participate despite the accessibility issues they faced.

PWD would benefit from unhindered participation in virtual communities because such communities can provide another channel through which the important feature mentioned above, different types of social support, can be received (Wellman & Gulia, 1997). This is especially the case for virtual communities made by PWD for other PWD to participate in (Shoham & Heber, 2012: Tilly, Bruce, Hallam & Hills, 2006). Another benefit would be a chance to experience interactions where people without disability will have less of a chance to treat PWD differently because of their awareness that the person they are interacting with has a disability. Social cues are less obvious in virtual interactions (unless the interactions involve photos or video to facilitate some degree of non-verbal communication). Therefore, social statuses like race, gender, age, education or disability are less likely to be immediately identifiable unless communicated explicitly (Wellman & Gulia, 1997, p. 8). These benefits make it worthwhile for PWD to be able to access virtual communities on the web with as few barriers and difficulties as possible.

Web 2.0 & Accessibility

The concept of Web 2.0 is often used to describe what the web environment looks like and how it operates today. The defining characteristics of Web 2.0 will be outlined here because some will need to be referred to later when discussing the accessibility issues facing PWD. One of Web 2.0's most defining features is the shift from static website content to dynamic content. Websites and platforms of the Web 2.0 era put more importance on being media

rich and interactive. For example, having embedded video and including comments sections in articles are common practices within many websites today. The proliferation of user-generated content (UGC) can be seen as another defining feature of Web 2.0 (McClimens & Gordon, 2009, p. 20: Ellis & Kent, 2010). Many of the most popular websites and platforms centre around and/or encourage user-generated content (UGC), for example YouTube and Facebook. This relates directly to another feature: the shift in power from corporate and organisational content producers to individual consumers and users (Fuchs, 2010, p. 766-768: Birdsall, 2007). Much literature from Internet studies mentions the "prosumer", a hybrid identity of producer and consumer, as an identity that can be applied to many of the users that exist in the Web 2.0 era (Toffler, 1980: Tapscott, 1996 (both cited in Collins, 2010, p. 39-40)). All these are examples of some of the most defining features of Web 2.0.

It is interesting to note that the original vision for Web 2.0 from one of the web's creators, Tim Berners-Lee, explicitly mentioned increased accessibility for PWD (Goggin & Newell, 2003). However, as some have pointed out, most websites today are not optimised for accessibility for PWD (Adam & Kreps, 2009, p. 1041: Ellis & Kent, 2010, para. 5). In this way, a discrepancy has formed between how accessible Web 2.0 should have been and the level of accessibility it currently delivers. Not enough discussion exists to address the accessibility of communication-oriented websites on the web (Jaeger & Xie, 2009, p. 56). The few that do reveal that more effort is being made towards making information-oriented websites accessible (Jaeger & Xie, 2009, p. 56).

Accessibility difficulties for PWD

The accessibility difficulties that a person with disability may face will depend on the nature of their disability. However, some disabilities can be grouped together based on what sensory, physical, etc. trait is impaired (e.g. eyesight). Examples of some common disability groups and the accessibility difficulties they face will be discussed below.

People who are deaf or have a hearing impairment often depend on the presence of closed captions to consume media with audio (Ellis, 2010, p. 21.7). While much content on the web takes the form of text, and increasing amount is being disseminated in video format. For example, video tutorials and podcasts are commonly made by members of some virtual communities based around areas of interest (e.g. software, makeup, digital art) to share advice and other helpful information. On one of the most popular video sharing websites, YouTube, there are options to put closed captions on videos. However, the onus is on content creators to provide these. It is also not mandatory to do so. While many producers on YouTube have uploaded closed captions for their videos, many have not. A similar situation exists for other video sharing sites (e.g. Vimeo) whereby there are options to input closed captions, but many do not. Therefore, a major accessibility difficulty faced by PWD who are deaf or have a hearing impairment when participating in certain virtual communities is a lack of video content with closed captions shared by other members.

Individuals who are blind or visually impaired often access text-based content by using a reader. Many websites that facilitate communicative practices (e.g. SNSs) utilise text. However, not all text on a website will be readable for web readers. For example, many of the most commonly used tools on Twitter (e.g. Log in button, Follow button, Search bar) are in text form, but people who are blind or visually impaired have complained that Twitter is not accessible for them (Ellis & Kent, 2010). Thus, a major accessibility difficulty faced by PWD who are deaf or have a hearing impairment when participating in certain virtual communities is a lack of websites optimised for readers.

Individuals with some degree of cognitive impairment would be best able to access websites with simplified designs and language. Many websites, including popular communication-oriented ones like Facebook, utilise abstract language for its tools (e.g. 'Feed', 'Wall') (Shpigelman, 2017, p. 411). Many popular communication-oriented websites, like Twitter, Snapchat and Reddit, have similar abstract terminology to describe its tools (e.g. tweets, stories, snaps and streaks). Therefore, a major accessibility difficulty faced by individuals

with cognitive impairment when participating in certain virtual communities is a lack of websites that use concrete, simplified terms for its tools.

This is by no means an exhaustive list of examples, but some of the most common accessibility issues for PWD, especially when it comes to using communication-oriented websites necessary for participating in virtual community, have been mentioned. On the surface, it may seem that the technology is the source of these issues. However, it should not be forgotten that these websites have designers. People make the decisions that lead to websites being designed to work a certain way. People also decide which website features they will utilise and how they will be utilised. Put another way, there is always a conscious human aspect behind what practices develop around specific technologies.

The influence of society and business on web accessibility

For many web users, many traits of their off-line selves are expressed when they interact online (Wellman & Gulia, 1997). This includes interactions within virtual communities. Some traits that carry could include attitudes and beliefs (whether conscious or subconscious) about specific issues. It is possible that dominant social attitudes affect what communication practices proliferate in online spaces. Therefore, understanding what the dominant social attitudes towards disability offline are may help to know why some accessibility difficulties for PWD exist.

Societal attitudes towards disability offline are more often exclusionary than inclusive. This is shown through, for example, the lack of consideration for the needs of people that use wheelchairs in the design of public spaces and public transport vehicles (e.g. buses and taxis). Another example is that providers of services that are considered necessary for all people (e.g. education, health care) will not always have braille versions of forms available. These exclusionary societal attitudes are most likely caused by the continuing dominance of the 'medical' and 'charity' models of understanding disability (Adam & Kreps, 2009, p. 1046: Newell, 2008, p. 78-79). The medical model emphasises disability as a state of insufficiency

and therefore needing to be 'fixed' while the charity model views disability as a state of 'misfortune' whereby PWD cannot achieve their own autonomy and self-support and therefore need charity from others. Both models are problematic due to their emphasis on the condition of the individual being the issue. These models of viewing PWD, and the attitudes they create, are probably carried online by web users and therefore may be informing their considerations (or lack thereof) about the accessibility for PWD of any content they generate.

Examining the commercial sector in addition to societal attitudes could shed additional light on why some accessibility difficulties for PWD exist because of the influence that the commercial sector has over the web. Many websites are created, owned and/or supported by commercial entities. If their interests do not include the interests of PWD with regards to web accessibility, they will be unlikely to optimise the accessibility of websites for PWD (). These commercial entities, along with the web developers that assist them, have often exhibited a reactionary and adaptive response to critique of the design of their websites from disability groups. In other words, the design of websites, in addition to the design of the devices commonly used to access them, often 'builds in' accessibility for PWD as an afterthought (Adam & Kreps, 2009, p. 1045). Thus, commercial interests are contributing to the existence of accessibility issues facing PWD.

An important final aspect to consider when discussing societal and commercial influence on the web is that of standardisation. Web accessibility standards have been created, but their effectiveness at guiding web developers to make websites more accessible has been challenged. One aspect that is criticised is that these standards address content, but do not specifically address how to optimise accessibility of communication functions on websites (Jaeger & Xie, 2009, p. 57-59). A lack of empirical research on PWD is cited as a possible reason for this (Adam & Kreps, 2009, p. 1053). What is as important (or possibly more so) as how well web accessibility standards address the needs of PWD is whether they are strictly enforced throughout the web. In reality, this may be a difficult feat to pull off, especially now that the total number of websites has become massive. Even still, the history

of weak quality and enforcement of web accessibility standards is an additional reason that helps create deeper understanding of why some accessibility difficulties for PWD exist.

Conclusion

Greater web accessibility was a part of the original vision of Web 2.0 from 1997. However, PWD continue to face accessibility difficulties, including when participating in virtual communities. Examples of these difficulties include a lack of video content with closed captions for people with hearing impairment, websites not optimised for readers used by the visually impaired and an absence of communication-oriented websites that utilise non-abstract language to make it easier for people with certain cognitive disabilities to use. Exclusionary societal attitudes based on the medical and charity models of understanding disability, commercial interests that ignore the interests of web accessibility for PWD and a lack of comprehensive and strictly enforced web accessibility standards were discussed as possible causes for the continued existence of accessibility difficulties for PWD. Virtual community participation poses great benefits for PWD such as access to new channels of social support and opportunities to experience interactions free from altered treatment from others based on awareness of their disability. Therefore, it would be worthwhile to dedicate more (well-informed) efforts to improve the state of web accessibility for PWD.

While this paper has only outlined accessibility issues that PWD face when participating in virtual communities and identified potential causes for them, identifying these causes could create a starting point for figuring out how these issues can be solved. Further research could discover what communication-oriented websites are cited as the most accessible for PWD by PWD, and explore case studies of these websites. This could bring greater understanding of different ways to best go about providing accessibility for PWD, especially with regards to virtual community since it requires communication tools.

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Revision Comments

I made a large amount of revisions to my paper because I changed my argument. It still retains many aspects, such as the review of Web 2.0 characteristics and discussion of the intention of Web 2.0 for accessibility and web accessibility standards.

However, I am no longer focusing on the technical nature of the issues. I have now included some examples of the accessibility issues then discussed the causes I am proposing (societal attitudes, commercial interests and poor accessibility standards implementation).

I will also note that minor wording changes were made for some sentences from my draft paper. These have been highlighted as well.