# Accessible Websites for the Visually Impaired: Guidelines for Designers

Annika Fecke[1], Sabine Jeleniowski[2], Martina Joisten[1]

Fachbereich Medien, Rheinische Fachhochschule Köln[1]
Digital Film and Television Production, University of York[2]

**Abstract**

Many websites are still not fully accessible for handicapped people. We argue in this paper that one reason for inaccessible websites is the lack of awareness and expertise of the people that play a major role in creating a website: web designers. To make designing accessible websites easier, we collect requirements from web designers and prototype interactive accessibility guidelines that are optimized for the needs of web designers.

## 1 Introduction

Web design plays a major part in ensuring that websites are accessible to all potential users. Education and training to enhance web designers' expertise in the field of accessibility is thus crucial to ensure that handicapped people are not excluded from the internet (Miesenberger & Ordner 2006). To cater for handicapped peoples' needs, web designers need tools and information on how to build websites which are accessible for all. In order to add to the available information we gathered a set of design rules regarding the accessibility for the visually impaired from existing literature and online guidelines (e.g. Cunningham 2011, Hellbusch & Probiesch 2014, Kannegießer & Prickartz 2006, WAI-ARIA, WCAG 2.0). The application of these existing rules in building and designing websites improves the accessibility of websites for the visually impaired. The rules can be applied to most web projects with minor effort and limited programming skills. Still, when web designers work on projects, accessibility is often neglected. Why does this discrepancy exist?

Prior research shows that web designers think that accessibility leeds to less aesthetic designs and unwanted visual compromises (Petrie et al. 2004). They also may be unable to really assess what certain changes and decisions in a web design mean for the visually impaired user (Asakawa 2005, Tagaki et al. 2004). In a first approach to address the above question further we interviewed experienced web designers. Based on the results we prototyped a first web-

based interactive guideline that communicates the rules for accessibility and helps web designers create accessible websites for the visually impaired with reasonable effort.

# 2    Requirements from Expert Interviews

We interviewed five web designers in October and November 2014 in order to find out what their current expertise on accessibility for the visually impaired was. We also wanted to find out what role accessibility plays in their daily work and projects. We asked how web designers acquire new expertise and knowledge on accessibility and what would make an interactive guideline attractive for them to use.

All interview partners said that web accessibility is an important topic, but does not play a part in their daily work routine. Due to the interview partners reasons are the lack of interest on the clients' side and small budgets. Furthermore the web designers mentioned that handicapped people are a small target group and the additional work would eventually not pay off.

The web designers knowledge of accessibility is based on self-studies and learning by doing. Their main source of information is the web. They think that keeping track on web accessibility is a very time-consuming process because web standards and internet technologies are changing all the time.

The following topics were mentioned as problematic in connection with accessibility:

- a lack of understanding what visually impaired people perceive when using a website
- only few usable online sources on accessibility for visually impaired people
- no known tools to test the accessibility of a website
- aesthetic compromises and limited design options (see also Petrie et al. 2004)

The wish list for online guidelines include:

- information about perception and behavior of the visually impaired on the internet
- case studies
- examples with code-samples
- web standards and important rules
- links to tools that help testing the accessibility of the web design

One interview partner stressed that the anonymity of web users is a major reason for the lack of awareness. To be informed about how many visitors of a specific website use a screen reader would be valuable information for web designers.

# 3    Interactive Guidelines

Based on the literature review and the requirements from the expert interviews we prototyped web-based guidelines. The interactive prototype has been created with the animation software Hype and can be demonstrated at the workshop to show what a prospective guidelines website could look like. The website will be responsive and thus available on mobile and desktop. One approach is to help web designers see what visually impaired people experience when using the web (Asakawa 2005, Tagaki et al. 2004). The website includes samples of how visually impaired people experience websites and how they surf the web. The guidelines for accessibility include code samples and best practices.



*Figure 1: Simulating the website experience of a user with diabetic retinopathy*



*Figure 2: Showing code examples for download*

# 4    Conclusion

This research on informing and educating web designers on accessibility for the visually impaired is still in a very early stage. We have conducted a small qualitative study and produced a prototype that we would like to demo and discuss in the workshop. Both can be a base for further designs and research.

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**Contact**

Annika Fecke, Martina Joisten
Rheinische Fachhochschule, Fachbereich Medien
Schaevenstraße 1a/b, 50674 Köln, Deutschland
annika.fecke@oulook.de, martina.joisten@rfh-koeln.de

Annika Fecke, Martina Joisten
Sabine Katja Jeleniowski
University of York, Digital Film and Television Production
Baird Lane, Heslington (East), York, YO10 5GB, UK
s.jeleniowski@gmail.com