

**Institution:** University of Leeds

**Unit of Assessment:** 36

**Title of case study:** Improving web design practice to include people with intellectual disabilities (ID) in the World Wide Web

### 1. Summary of the impact

Kennedy's research advanced knowledge and good practice amongst web designers to enable them to include people with intellectual disabilities (ID) amongst their website audiences and thus improve web accessibility for this user group. The research:

1. Raised awareness about techniques for ID web accessibility amongst web designer participants;
2. Changed the practices of web designer participants, enabling them to enhance the ID accessibility of the websites they build;
3. Facilitated web designer participants to undertake ID-targeted web design;
4. Shared ID web accessibility expertise with other relevant organisations;
5. Advanced knowledge/good practice within a wider audience, through a website dedicated to sharing ID accessibility techniques.
6. Raised the confidence of people with ID.

### 2. Underpinning research

Although it is illegal to discriminate against people with disabilities in the provision of services, including websites (in the UK and elsewhere), previous research by **Kennedy** (University of Leeds, 2008 – present) had concluded that it is difficult for web designers to accommodate the accessibility needs of people with ID (of whom there are 1.5m in the UK alone) even when designing for them, and that more understanding of the web design process, and how to intervene in it, was needed. Therefore **Kennedy** secured a grant [G1] to examine ways to ensure the WWW is accessible to all, with a specific focus on people with ID.

The research project, Inclusive New Media Design (INMD), was based on the premise that influencing web designers, as the service providers, would make the web more accessible for web users with ID. It explored the best ways of encouraging web designers to include people with ID amongst their website audiences by examining: the place of existing web accessibility guidelines in the practices of web designers; the factors that affect the take up of accessibility guidance; the effectiveness of existing guidance as a way of achieving accessible design; and the effectiveness of other approaches to encouraging ID accessibility [E].

Working with Siobhan Thomas (then of University of East London; now of London Southbank University) and Simon Evans (of Cognable, accessibility research and development consultancy), **Kennedy** led this AHRC/EPSRC Designing for the 21<sup>st</sup> Century funded project from May 2007 to August 2009. Research preparation took place while **Kennedy** was at the University of East London (May 2007 – Jan 2008). The empirical research (Feb – Nov 2008) and subsequent analysis and dissemination (Dec 2008 – Aug 2009) were led by **Kennedy** from the University of Leeds.

Thirty-one web designers participated in the research and attended nine ID accessibility training workshops. The types of websites which they designed were diverse, with participants employed in telecoms, public media companies, education and other public sector organisations, and commercial design agencies; five participants were self-employed. INMD employed twenty-nine people with ID as testers, recruited from Ellingham Employment Services, an organization dedicated to finding employment opportunities for people with learning difficulties, to attend four of the workshops and work as experts in their own web use. They tested a number of websites, some of which were designed by INMD participants. All testers were at the mild end of the ID spectrum, with reasonable functional ability and computer literacy – such abilities were deemed necessary in order to facilitate web designer participants' communication with them.

Kennedy's research identified that existing accessibility guidelines (the Web Content Accessibility Guidelines (WCAG) of the World Wide Web Consortium's Web Accessibility Initiative (W3C WAI)) do not address the accessibility needs of people with ID [B]. The research identified alternative strategies to enhance ID web accessibility, concluding that:

- there is widespread commitment to web accessibility amongst web designers [A], which constitutes an integral part of their professional practice [C];
- it is possible for web designers to implement some ID accessibility techniques, including changing the way they use imagery, so it is more relevant to and supportive of text; using large fonts to enhance readability of text; using simple text, or encouraging copy writers to do so, to enhance readability of text; building both rich media and plain text versions of webpages, to

cater for the accessibility needs of diverse population users [F];

- opinions diverged regarding whether it was more effective to regulate web accessibility or leave web designers to self-regulate [D];
- significant obstacles to ID accessibility exist, most notably other stakeholders and decision-makers in the web design process and the need to balance the accessibility requirements of people with ID with the needs of other web users [B].

The research (specifically the literature review and dialogues with web users with ID) concluded that these actions would improve web accessibility for people with ID [F]:

- develop an online resource about ID accessibility;
- include ID specific guidance within existing accessibility guidelines;
- engage with ID web users in the design process;
- develop research with people at the profound end of the ID spectrum;
- engage with a diverse range of stakeholders.

### 3. References to the research

[A] Kennedy, H. (2012) *Net Work: ethics and values in web design*, Palgrave MacMillan. ISBN-10: 0230231403. REF output.

[B] Kennedy, H., Thomas, S. & Evans, S. (2010) 'Can the web be accessible for people with intellectual disabilities?', *The Information Society* (<http://www.indiana.edu/~tisj/>) 27(1): 29-39. DOI 10.1080/01972243.2011.534366

[C] Kennedy, H., (2010) 'Net Work: the professionalisation of web design', *Media, Culture and Society* (<http://mcs.sagepub.com/>) 32(2): 187-203. DOI 10.1177/0163443709355606

[D] Kennedy, H., (2010) 'The successful self-regulation of web designers', *Ephemera: theory and politics in organisation* (<http://www.ephemerajournal.org/>) 10(3-4): 374-391. REF output.

[E] Kennedy, H., Thomas, S. and Evans, S. (2010) 'Inclusive New Media Design: The Place of Accessibility Guidelines in the Work of Web Designers' in Inns T.(ed) *Designing for the 21st Century: Interdisciplinary Methods and Findings*, Gower Publishing, pp 258-269.

[F] Project report: Kennedy, H., Evans, S., Thomas, S., Staples, P. and Sweeney, P. (2009) 'Inclusive New Media Design: including people with intellectual disabilities in the web' <http://www.inclusivenewmedia.org/blog/about-inclusive-new-media-design/core-findings/>.

[G1] *Inclusive New Media Design (INMD)* (May 2007 – August 2009), awarded to PI Helen Kennedy, £256,817.50 FEC; £205,454 actual contribution, funded by AHRC/EPSRC Designing for the 21<sup>st</sup> Century Initiative. Grant no: AH/E507115/1.

### 4. Details of the impact

Kennedy's research advanced knowledge and good practice amongst web designers to enable them to include people with ID in the World Wide Web. The impact of this research is summarised in the six points below, which show how the research instigated and generated new practices, influenced creative design processes and contributed to improved website design for people with ID.

#### 1. Raised awareness about techniques for web accessibility for people with ID amongst web designer research participants

Kennedy's research enhanced awareness and understanding of ID accessibility and ID web users' needs amongst web designers, evidenced by feedback from web designer participants:

"Prior to INMD, I had little if any understanding of ID accessibility issues, though I had some awareness of general accessibility in web design and development ... I now feel I have a very good awareness of patterns of use and issues that affect the use of the web by people with ID" [1].

The project report [2] includes these testimonies to this impact from participants:

"The extensive testing on our shops with various user abilities had a profound impact on me and showed me that what I took for granted wasn't obvious to everyone and that we need to broaden our horizon" (design agency director).

"I am more aware of accessibility issues and much more aware of the extent of a diversity of people's uses of online media" (freelance web developer/lecturer).

#### 2. Changed the practices of web designer research participants, enabling them to enhance the ID accessibility of the websites they build

Web designer research participants took a number of actions to change their web design practices and include web users with ID amongst their audiences as a direct result of the research. Participants reported using recommended ID accessibility techniques to improve the ID accessibility of their websites, including:

- changing the way they use imagery, so it is more relevant to and supportive of text;

- using large fonts to enhance readability of text;
- using simple text, or encouraging copy writers to do so, to enhance readability of text;
- beginning user testing at the start of a web design project;
- building both rich media and plain text versions of webpages, to cater for the accessibility needs of diverse populations of users;
- re-visiting and improving previously built websites to enhance their ID accessibility by implementing some of the techniques listed in the above bullet points;
- limiting choice on each page [2].

One said “I can confirm that my practice was changed by the experiences I had at the INMD workshop. [...] [I] gained awareness of specific techniques such as simple navigation structures, visual communication and the use of ‘easyread’ texts that are fundamental to ID accessibility. [...] I am now very aware of the importance of simple writing and readability, and the use of images to support meaning in websites. [...] I might add that I have also communicated the importance of such practices to many colleagues and collaborators” [1].

As a direct result of INMD, some participants also became members of accessibility organisations such as GAWDs (Guild of Accessible Web Designers), whilst others passed on information from INMD, through blogs or at work, becoming accessibility experts in their workplaces, such as large public sector organisations and media companies [2].

### 3. Facilitated INMD web designer participants to undertake ID-targeted web design

An unintended but welcome impact of **Kennedy**’s research was that participants went on to design websites targeted specifically at web users with ID, putting into practice the research findings relating to the web accessibility needs of this group of web users. Three participants contributed voluntarily to the production of the INMD website, designed specifically with the accessibility needs of ID web users in mind, whilst others developed prototype sites targeted at ID web users, such as a website for the charity 1A Arts, a centre in London supporting local children, young people and adults with ID. As further examples, the following projects were developed with The Rix Centre, a charitable organisation committed to exploring the benefits of new media for people with ID [3]:

- ClickStart: template for people with ID to make their own websites, in use by 10 London Boroughs and 240 trainee web information providers with and without disabilities ([www.clickstart.org.uk](http://www.clickstart.org.uk)).
- In-Folio: e-portfolio application for people with ID to record material about their lives and experiences. The In-Folio team won the 2011 Adobe Systems sponsored Learning Technologist of the Year Team Award (<http://www.jisctechdis.ac.uk/techdis/learnersandstudents/infolio>).
- Oily Cart: website for young people and people with ID theatre company ([www.oilycart.org.uk](http://www.oilycart.org.uk)).

“These specific examples [...] show that the web was made more accessible for people with learning/intellectual disabilities as a direct result of INMD – web designers developed ID accessibility expertise on INMD and then implemented this in the web design work they undertook. Creative industry professionals were effectively engaged in co-development of inclusive design best practice on INMD and have genuinely embedded this knowledge in practical ways that have direct impact for people with disabilities across the UK” [3] (Director, The Rix Centre).

### 4. Shared ID web accessibility expertise with other relevant organisations

In addition to facilitating web designer research participants to work with the national charity, The Rix Centre, the research also positioned **Kennedy** and INMD collaborators as experts in this field. **Kennedy** has acted as a consultant and shared the research findings with charities dedicated to improving the lives of people with ID, such as *People In Action* and *CHANGE*.

“The expertise [...] shared with us around the development of websites that are accessible for people with learning disabilities really supported *CHANGE* to create a website that is more accessible to and representative of our volunteers and staff who have learning disabilities. You have supported us to develop a great platform for making the wider community and other organisations more aware of the access needs of people with learning disabilities” (Accessible Information Manager, *CHANGE*) [4].

The Director of Cognable (an INMD collaborator) reports that INMD directly led to him being asked to join a group of people working on a W3C WAI Application Note (an appendix to its accessibility guidance) relating specifically to the needs of web users with ID and that his “involvement served to highlight the complex and diverse web accessibility needs of people with cognitive and intellectual disabilities, a knowledge area which had not been well represented in WAI historically.” Also, “as a result of INMD, I was invited by the then Minister for Further Education to join a UK government round table discussion on Accessibility of Creative Digital Tools, at which I

also promoted the accessibility needs of people with cognitive and intellectual disabilities” [5].

### **5. Advanced knowledge and good practice within a wider audience, beyond the research project, through a website dedicated to sharing ID accessibility techniques**

The website [www.inclusivenewmedia.org](http://www.inclusivenewmedia.org) was developed to share research findings, to advance knowledge and good practice and to communicate ID web accessibility techniques. It offers comprehensive resources, including materials adapted from the research findings and workshops and was developed in collaboration with the BBC’s Usability and Access Team. Eleven members of this team beta-tested the website, which raised awareness and advanced knowledge of ID accessibility issues amongst a team responsible for ensuring BBC services are usable by all users, including those with disabilities. A survey of BBC representatives following INMD revealed support for the research in improving ID web accessibility: “Overall, an excellent summary of issues of ID and great advice on how to improve sites to take into account those who suffer from ID” (BBC Information Architect/Usability Consultant) [6].

As further evidence that the research has engaged a wide audience, the INMD website received 250,000 hits within six months of its launch in November 2009 and more than 200,000 hits in the following year. Its significance was noted by Eric Meyer, a widely-followed and prominent world-leading web developer in October 2009, who commented that the work is “important, and the more insights you can give us, the better” [7]. The website continues to serve as an ID accessibility resource, consistently receiving 10,000 page hits per month. As further examples of engagement, Clearhelper, a US website sharing best practices of accessibility for people with ID, shared the research findings [8], and in March 2013, on SLD-forum, a Department for Education forum for professionals working with people with ID, INMD was praised, in particular the site’s top tips [9].

### **6. Raised the confidence of people with ID**

A final impact of the INMD project was to raise confidence amongst people with ID. Twenty-nine people with ID took part in the research project as website testers. Ellingham Employment Services, through which they were recruited, confirmed that: “participation in this project proved beneficial to our service users, in terms of increasing their confidence, self esteem and understanding of the work place. [...] This was helpful in building the participants’ understanding of their own accessibility issues and encouraging them to consider support needs. [...] I have no doubt that participation in the INMD project was extremely helpful for all the service users who were involved, both in terms of personal development and consolidating understanding” [10].

Therefore, although **Kennedy’s** research did not include longitudinal strategies to identify whether people with ID find the websites that INMD participants make *now* more accessible than those they made *prior to* INMD participation, this end user group benefited from the research. By concentrating on equipping professionals and relevant organisations with the tools to improve the design of websites, encouraging them to make the web more ID accessible, **Kennedy’s** research advanced knowledge and good practice amongst web designers to include people with ID in the WWW.

### **5. Sources to corroborate the impact**

[1] Letter, 13/05/2013, INMD participant, research engineer for Arts Catalyst, available on request.

[2] Project report, pp16-17& p20, available at <http://www.inclusivenewmedia.org/blog/about-inclusive-new-media-design/core-findings/>, last accessed 23 September 2013.

[3] Letter, 22/05/2013, Director, The Rix Centre, available on request.

[4] Letter, 01/05/2013, Accessible Information Manager, CHANGE, available on request.

[5] Letter, 13/05/2013, Director of Cognable, available on request.

[6] Survey of BBC Usability and Access Team following INMD project, available on request.

[7] Inclusive New Media Design blog, with posting from Eric Meyer <http://www.inclusivenewmedia.org/blog/613/blog/nothing-about-accessibility-at-aneventapart-2009/>, last accessed 23 September 2013.

[8] Clearhelper, US website, best practices of accessibility for people with ID <http://clearhelper.wordpress.com/2009/12/03/inmd-summary-of-final-report-on-web-accessibility-for-people-with-id/>, last accessed 23 September 2013.

[9] SLD-forum, a Department for Education forum for professionals working with people with ID <http://lists.education.gov.uk/mailman/listinfo/sld-forum>, last accessed 23 September 2013.

[10] Letter, 02/05/2013, Communications Coordinator, Ellingham Employment Services, available on request.