E-Learning Accessibility Practices Within Higher Education: A Review

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Paper presented at the British Educational Research Association Annual Conference, Heriot-Watt University, Edinburgh,
11-13 September 2003

Abstract

The 2001 Special Educational Needs and Disability Act (SENDA) made it an offence for educational institutions to discriminate against a disabled person by treating him or her less favourably than others for a reason relating to their disability. The Act covers all aspects of student services, including provision and use of electronic materials and resources. Learning technologists have therefore been charged with the responsibility of ensuring that electronic teaching materials can be accessed by disabled students. In an attempt to explore how learning technologists are developing practices to produce accessible electronic materials this paper will present a review of current accessibility practice. The review will focus on what key professionals (academics, researchers, educational developers and staff developers) within the learning technology field are saying and doing about making electronic materials and resources accessible to disabled students. Key issues that may influence the "accessibility" practices of learning technologists are highlighted; the importance of these issues for developing an understanding of "accessibility" practices is discussed and implications for future research are identified.

Introduction

The 2001 Special Educational Needs and Disability Act (SENDA) was brought in as an amendment to the 1995 DDA and is being implemented as Part IV of that Act. From September 1st 2002, the Act made it an offence for educational institutions to discriminate against a disabled person by treating him or her less favourably than others for a reason relating to their disability. The Act covers all aspects of student services, but the particular aspects that are relevant to the work of learning technologists include e-learning, distance learning, examinations and assessments and learning resources (including libraries and computer facilities).

Discrimination will be considered to have occurred if a disabled person is treated less favourably for a reason relating to their disability than a non-disabled person to whom that reason does not apply or if there is a failure to make "reasonable adjustments without which the disabled person is placed at a substantial disadvantage". From a learning technology perspective, a reasonable adjustment might involve changing or adapting electronic teaching materials.

Those skilled in interpreting the law have been heavily involved in trying to translate the implications of SENDA 2001 for the learning technology community. For example, as a representative of the JISC Legal Information Service, Wilder (2002) advises:

" The legislation affects the provision of Information Technology and Computing Services in the very widest sense of the phrase and ignoring the legislation is not an option."

On one level her advice is clear, educational institutions cannot avoid responsibility. But with regards to web accessibility, her advice reveals that whilst there is an imperative not to ignore the legislation, how educational institutions attempt to implement the law in practice is likely to vary greatly depending on their understanding and interpretation of what standards the courts will use as benchmarks when judging reasonable adjustment:

" The World Wide Web Consortium (WC3) has a Web Accessibility Initiative outlining different levels of accessibility. Commentators have suggested that Priority 1 and 2 of their guidelines should be the norm and it may be expedient for institutions to be anticipating the likelihood that the courts may use this standard when deciding what is reasonable adjustment"

Such interpretations of the law suggest a potential tension for learning technologists. One the one hand it is very clear that they must respond to SENDA, but on the other hand a clearly understood and articulated practice that defines and lays out how the implications of SENDA can be implemented in reality may de difficult to identify. This suggests that there are important questions that need to be addressed when exploring the impact of accessibility legislation on practice within Higher Education:

- How are learning technologists responding to SENDA and accessibility issues?
- What factors are influencing how and whether learning technologists respond?

In an attempt to answer these questions this paper will present a review of literature published between 2000 and 2003 that focuses on accessibility legislation and/or learning technologists interpretation and implementation of the legislation. The review focuses on what key professionals (academics, researchers, educational developers and staff developers) within the learning technology field are saying and doing about making electronic materials and resources accessible to disabled students.

How are learning technologists responding to SENDA and accessibility issues?

In exploring how learning technologists are responding to SENDA the review revealed four key practices:

- Identifying existing accessibility tools
- Misusing existing accessibility tools
- Struggling to use existing accessibility tools
- Adapting existing generic accessibility tools and guidelines for more specific practices

Identifying existing accessibility tools

A number of accessibility and guidelines were in existence prior to SENDA and the literature review revealed a number of suggestions as to how they could be used to help comply with SENDA. Attention however has focused mostly on web accessibility and ignored wider issues such as accessibility of computer assisted assessment (CAA) applications, workstations, digitised resource collections, Virtual Learning Environments (VLE's) etc.

With regards to web accessibility, the most commonly cited guidelines are those that have been produced by the World Wide Web Consortium (WC3), most specifically the Web Content Accessibility Guidelines (WCAG). These outline three priority levels and the general consensus seems to be to design for priority 1 and 2, where level 2 would remove most but not all barriers to access, therefore excluding access for some students (McCarthy 2002). Whilst McCarthy gives a reference for these guidelines, he provides no description or explanation as to how these guidelines can be applied in practice. Witt and McDermott (2002) begin to address this by describing their experience of attempting to design a Web Site to priority three of the WCAG. They outline how they chose Dreamweaver as the design tool, Bobby as a validator to check completed pages and the LIFT plug-in to check ongoing progress.

Misusing existing accessibility tools

Prior to the dominance of the WCAG, the most commonly used tool was one called Bobby. There is evidence to suggest that learning technologists are beginning to recognise that this tool can and has been used inappropriately. (Witt and McDermott 2002, Phipps, Witt and McDermott 2002).

"..while Bobby will detect a missing text description for an image, it is the developer who is responsible for annotating this image with meaningful text. Frequently, an image has a meaningless or misleading text description though the validation tool output states that the page is accessible."(Witt and McDermott 2002)

The Bobby logo displayed a statement of the values of accessibility and had become something that people could point to and strive for. Yet it did not capture the richness of what is understood by accessibility because it could be appropriated in misleading ways and therefore be a false representation of what it was intended to reflect. In some part the learning technology community has recognised this in its move away from Bobby towards WCAG (Wilder 2002, McCarthy 2002 & Witt and McDermott 2002).

Struggling to use existing accessibility tools

Some learning technologists have described the difficulties they have experienced in attempting to design or develop new accessible materials. For example, Ormerod (2002) describes the development of an accessible distance learning MSc in construction and property management. He states that there is a steep learning curve for academics to make sure that the e-learning material they produce is inclusive. In reporting on their experience of trying to produce a WCAG-compliant web site, Witt, and McDermott, (2002) write*:*

"The process has been a steep learning curve for those involved, We have found that the WCAG priority checkpoints can be difficult to cross-reference, the validation tools require a number of subjective decisions and some of the guidance or feedback is ambiguous.."

Adapting existing generic accessibility tools and guidelines for more specific practices

Witt and McDermott are not alone in attempting to produce their own interpretations of accessibility guidelines. Some have produced very general guidelines. For example, Sloan et al (2000) offer their own "accessibility golden rules" which includes the rather vague rule "Use valid HTML and follow the Web Content Accessibility Guidelines". Others have produced technology specific guidelines. For example, Pearson and Koppi (2001) **e**valuated the accessibility of the Virtual Learning Environment (VLE), WebCT in practice and distilled their findings into a set of guidelines for academic designers of WebCT courses (although the work of Stiles 2001 would suggest that all the content inside a VLE will be rendered inaccessible if VLE manufacturers do not address the accessibility of the VLE itself). Others have produced disability specific guidelines. For example Lockley (2002) and Blankfield (2002) give some advice on making web based course materials accessible to dyslexic students. Whilst Lockley offers five simple design guidelines, there is no indication of whether these guidelines are grounded in practice and experience. She writes:

"A simple rule is to follow the suggestions for written material, and give careful consideration to contrasting colours."

Blankfield on the other hand based what she calls "good practice" guidelines on interviews that she had conducted with dyslexic students who were using WebCT.

What factors are influencing how and whether learning technologists respond?

In exploring possible influences on how learning technologists are responding to SENDA the review revealed two key factors:

- The perceived imposition of the law and difficulties responding to it

- A lack of understanding of the needs of disabled students.

The perceived imposition of the law and the difficulties of responding to it

In the literature, discussion of the legal imperatives of SENDA seems to be coupled with a perception that higher educational institutions will find it difficult to respond or will be resistant to such an imposition. For example, Lawson (2002) reports on a talk by Neil Crowther, a senior policy analyst at the Disability Right Commission. She writes:

"Neil's talk outlined the new duties which SENDA will impose on providers of post-sixteen education and related services.."

Lawsons' emphasis on the imposition of the Act is coupled with a pessimism and doubt regarding whether things will actually change. She notes that while it may be educators' duty to provide disabled students with the rights that they are owed, this cannot happen unless there is a major change in culture and ethos, and such a change is unlikely:

"Though such an outcome seems extremely remote, it is one worth striving for"

In reporting on a research project that used interviews with key stakeholders to explore issues surrounding disabled students and multiple policy innovations in Higher Education, Wilson, Ridell and Tinklin (2002) noted that there was some degree of sympathy with senior managers in Higher Education in terms of the degree of change that SENDA may require. They use an illustrative quote from one academic who said:

" I mean actually you can't but have sympathy with senior management because what, what has to be communicated is massive, you know. I think if you went through the code of practice that accompanies the DDA part 4. What you are getting is an extremely tall order in terms of institutional change.."

Middling and Bostock (2002) suggest that the response to SENDA will not be speedy if Higher Educational institutions see SENDA as an imposition. They offer one way to counter the culture of institutional resistance:

" by working with colleagues in a department to allow them to develop their approach to inclusion with support, advice and guidance, the speed of development increases. As anyone working for change in an HEI will recognise an imposed or blanket solution will not be well received by academic departments.

A lack of understanding of the needs of disabled students

Using the example of cognitive disabilities, Maureen Piggott (2002), a MENCAP regional director emphasises a potential mismatch between the theory and reality of e-learning accessibility and in doing so challenges learning technologists to be user or student centred in their design approaches:

" The W3C guides to web design…are an example but the reality is that information providers, designers and developers are too remote from people with cognitive disabilities to produce person-centred solutions.."

Some learning technologists have taken up Piggott's call to involve disabled students in the design of accessible web sites. Pearson and Koppi (2001) for example, argue that the key to accessible courseware is to take a learner-centred design approach. While Smith (2002) emphasises the involvement of dyslexic students in his design of a Virtual Learning Environment Interface and makes a plea for a wider deployment of user testing:

"If user-testing were more widely deployed in both the academic and commercial world, the potential would exist to produce better all round interfaces…This should produce a more satisfactory product from the user's viewpoint..."

In addition to the call to involve disabled students there is a call to engage in a dialogue with people who are knowledgeable about the needs and concerns of students with disabilities (disability officers or co-ordinators). For example, Phipps (2002) urges staff and educational developers to give serious consideration to using "non-traditional facilitators" such as disability officers for workshops in this field. While Middling and Bostock (2002) describe how in response to SENDA legislation their institution has begun to develop staff development programmes jointly between Disability Services, staff development teams and departments. In describing how a computation department attempted to deliver an inclusive curriculum using specialist software, Conroy (2002) describes how the internal drivers for this initiative were the departmental disability co-ordinator and the university's disability and learning support advisor.

Developing a conceptualisation of e-learning accessibility practices

The review of existing e-learning accessibility practice in Higher Education suggests that learning technologists and others are beginning to develop accessibility practices in response to disability legislation, but that the extent of this development is being influenced by a range of factors. Seale (2003a, 2003b) has explored the usefulness of two very different frameworks in developing a wider understanding and clearer conceptualization of current e-learning accessibility practices and the influences upon them. These frameworks lead us to pose very different questions about the future of e-learning accessibility practices.

Is the learning technology community working towards shared goals?

Seale (2003a) uses Wengers' (1998) "communities of practice" framework to interpret current e-learning accessibility practices. Using the theory as an analytical tool, Seale suggests that accessibility" practices are a source of coherence for the learning technology community in that:

- there are some examples of different groups working together (through mutual engagement) to developing accessible electronic materials
- there is evidence that learning technologists are attempting to produce a practice to deal with what they understand to the their "enterprise" and to own that practice despite the perceived imposition of laws such as SENDA
- there is a shared, but limited, repertoire that learning technologists can draw on.

Applying Wenger's "boundaries of practice" concept Seale (2003a) goes on to argue that within the wider community of learning technologists there may be smaller communities of practices, which through their related accessibility enterprises may form constellations

of practices. A review of current e-learning accessibility practices suggests that these communities might be broadly termed:

- Designers of accessible electronic material: e.g. lecturers, educational developers, and technical support staff
- Users of accessible electronic material: students with disabilities
- Advocates for students with disabilities: e.g. disability officers or co-ordinators
- Disseminators of information about best accessible design practice: e.g. staff developers.

Seale (2003a) argues that all four communities have a related enterprise, that of "accessibility"; each faces similar conditions in that they all operate in the Higher Education environment; each may have members in common (e.g. a disability officer could also be involved in staff development) and each shares artefacts such as SENDA and WCAG. The findings from the review also indicate the potential growth of "boundary practices" that link these communities in some way. So for example the call for the involvement of users in the design of accessible electronic material (Piggott 2002, Smith 2002) suggests a boundary practice for which advocates could be "brokers". While the call for the involvement of advocates in dissemination of information about good or best practices (Phipps 2002, Midling and Bostock 2002) suggests a boundary practice for which staff developers may be brokers.

Is there a competition to determine the rules and outcome of the accessibility game?

Seale (2003b) contrasts Wenger' (1998) "communities of practice" framework to the institutional theory tool of Konur (2000) and argues that whilst the 'communities of practice' framework is useful for conceptualising emergent e-learning accessibility practice a major flaw of this framework is that the influence of power relations on the development of practice is ignored. The notion of power and authority:-the politics of practice- are reflected in the ideas of Konur (2000). Prior to the publication of SENDA, Konur used an institutional theory tool to offer a interdisciplinary analytical framework for interpreting the process of creating enforceable rights for disabled students in higher education. His framework emphasised the social and political aspects of higher education and equated the process of creating rights for disabled students to a game that had rules. According to Konur the institution is the context within which the game is played where Institutions set the rules of the game and the educational services that an institution provides can be divided into one teams.

Using the team sport analogy Konur argues that educational institutions set the rules of the game and organisations within the institutions play (as teams) to those rules, with individuals within the organisations as team players. Seale (2003b) argues that in one sense this analogy is not helpful in understanding institutions responses to SENDA because this legislation has brought about rules (laws) that were not within the power of educational institutions to influence. However, there is some evidence to suggest that educational institutions might play games in terms of how they choose to interpret the legal implications of SENDA (Wilder 2002). These games may involve waiting for a legal precedence to be set or case law to be created which defines what " reasonable

adjustments" institutions should be making. This waiting game may be played out within the context of cultural or institutional resistance (Wilson, Ridell and Tinklin 2002; Middling & Bostock 2002) and influenced by the pessimism or sympathy of an institutions team players (Lawson 2002; Wilson, Ridell and Tinklin 2002)

According to Konur, within higher education there are social and political teams, which influence the institutional services required to maintain orderly social and economic competition. He divides these services into four classes or teams;

- Rule making teams: politicians, activists, Disability Rights Commission (DRC), courts, tribunals, government, disability rights advocates.
- Rule advocating teams: Funding Councils, DRC, Government, disability rights advocates
- Rule implementation teams: service providers and users
- Rule enforcement teams: Funding Councils, Quality Assurance, DRC.

Rule enforcement teams detect and punish teams and players who violate established rules. While rule advocating teams teach players the rules of the game through socialisation of the individual where they are taught and persuaded to play the rules of the game. Applying these concepts, Seale (2003b) argues that the teams dominating the accessibility literature at the moment appear to be rule advocators and rule implementers. The advocators are linked to funding bodies such as JISC (e.g. Wilder 2002) or government sponsored agencies such as TechDis (Phipps, Sutherland & Seale 2002; Phipps 2002, Phipps Witt and McDermott 2002). While the rule implementers are linked to staff development (Middling and Bostock 2002), teaching (Blankfield 2002, Conroy 2002, Ormerod 2002) and research (Witt and McDermott 2002). These teams have identified the need to involve more team players, notably disability advocates and disabled students.

E-Learning Accessibility: The challenge for educational research

The Disability Discrimination Legislation in the UK has charged learning technologists with the responsibility of developing accessible electronic teaching material and resources. The results of the literature review would suggest that although some learning technologists are attempting to meet this challenge, there is not as yet a clearly defined, well rounded or easily recognized accessibility enterprise that can shape the professional practice of learning technologists. The challenge for educational research would therefore appear to expand on the current descriptions of e-learning accessibility practices in order to broaden our understanding of the development of accessibility practices and the potential barriers to that development. Such an exploration may be illuminated by a focus on the extent to which learning technologists feel they are in a community working towards shared goals or in a team competing against other teams to determine the rules and outcomes of the accessibility "game".

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