Digital Landscapes

Inclusive Potential versus Exclusive Practice

The advantage of digital data is its flexibility which ensures it can be available in multiple formats and customised to suit individual preference. This makes it a powerful tool for establishing equity of access to digital landscapes in particular for users of assistive technology. The expression 'Digital Divide' originally referred to access to technology and, while this remains relevant, it now also refers to the quality of that access. Possession of the hardware alone cannot guarantee equity of participation. For users of assistive technologies in particular, all the prerequisites for access can be in place but if the digital data has not been designed with the needs of their technology in mind then their access will continue to be denied. To work effectively within digital landscapes, and transform the curriculum for the needs for future learners both on and off campus, requires an understanding of inclusive digital practice so as to minimise barriers to access. These requirements should be neither under-estimated nor their presence assumed. As the use of digital landscapes for educational purposes increases care must be taken not to widen the divide between inclusive and exclusive digital practice. This paper suggests that priority should be given to ensuring accessible digital content within higher education and that this requires individual responsibility supported by a whole institution approach; both of which must recognise the value of digital inclusion.

Keywords: Digital Inclusion, Digital Exclusion, Higher Education

Introduction

Virtual learning environments were early examples of the adoption of educational technology across the higher education sector. As universities followed increasingly business modes of operation, with greater focus on market requirements for a flexible, employable workforce, the embedding of virtual learning has been accompanied by multiple promises of greater levels of efficiency and cutting costs. As well as the capacity to enhance the availability and the quality of teaching and learning, it was said to offer the potential for

greater time effectiveness and improvements to existing processes and practice. In short, a virtual learning environment would generate transformative changes of benefit to the whole institution and sector (HEFCE 2009).

The author of this paper coordinates virtual learning opportunities in a central UK educational development unit. A key part of this role has been the identification of bridges between the 'technology' and the 'pedagogy' in order to support the academic potential of digital environments. Integral to this role is the awareness that while technology can offer flexible, distributed access to teaching and learning resources, without inclusive digital practices it can equally well create 'digital divisions' where access is denied.

Technology should not be seen as neutral but a reflection of the political, economic and cultural environment in which it was developed; a phenomena referred to by Bijker (1987) as the 'social shaping of technology'. Digital divides have been described as complex and dynamic phenomena and the concept of access a multifaceted one (Van Dijk 2003). In an increasingly digital landscape, individuals unable to access the advantages of digital technologies are being unfairly discriminated against. Such digital disadvantages have been shown to mirror existing categories of social inequality (Seale 2009). One category of exclusion that crosses all social divides is the increasing denial of access for users of assistive technologies. Digital environments respond well to alternative input and output devices such as text to speech software or alternative navigation systems. The value of digital landscapes lies in the range of assistive technology available which utilises the inherent flexibility of digital content to be customised to suit individual requirements thereby creating the potential for inclusive learning opportunities. In order to maximise this potential, appropriate policies and practices are essential and without these, access will continue to be denied. This paper states that responsibility for ensuring digital inclusion lies beyond the construction of the technology and is situated with the inclusive practices of the authors of digital content. Without this attention to inclusion there is a danger that the technology which supports access will serve to deny it and where this takes place within the educational sector, there is a risk of institutions replicating wider social inequities rather than challenging them (Selwyn 2010).

Digital Landscapes; their changing natures

Innovation is an inevitable prerequisite for progress. The printing press, arguably one of the greatest information and communication technologies, has been aptly described as an 'agent for change' (Eisenstein, 1980). Digital technology offers the same change-potential for transforming social behaviours and cultural expectations (Webster 2009). The university, set against an increasing knowledge society where information is viewed as both cultural and academic capital, is a prime site for ensuring the parameters of digital access do not replicate or reinforce the barriers to participation found in the wider social environment (Selwyn 2010).

> 'The tensions relating to formal and informal location of digital inclusion highlight the real probability that digital inclusion is located as much in social structures as it is in physical structure and that factors such as who has the power and position in a community to act as gatekeeper to facilitate or block access to technology should not be underestimated or ignored by digital inclusion workers.' (Seale 2009:22)

Educational institutions have a social responsibility to minimise risk of exclusion and in an increasing digital society, one way in which they can take the lead is to ensure inclusive practice policies with regard to the design and delivery of digital opportunities for learning. The complexity of this requirement should not be underestimated. The Internet and its digital landscapes are continually evolving. Within a few years there has been a move from the (retrospectively named) Web 1.0 read-only environment to Web 2.0 tools and platforms. These contain greater levels of interaction and support for the development of user generated content and file sharing. The creation of digital content has passed from the realm of the 'expert' web designer to the individual user with the means of access with blogs, wikis and other social media software offering the potential for digital authorship and democracy.

Within the university, the institutional network and virtual learning environments contain multiple possibilities for content creation and innovative assessment

activities. Educational content creation has also benefited from open source development and the Creative Commons movement; the majority of institutions now support digital repositories and the sharing, reusing and repurposing of existing digital materials. A contemporary digital teaching-toolbox is likely to include a range of Web 2.0 style software for creating interactive learning resources. The production of podcasts and video has become more manageable and are useful for the development of digital narratives to enhance critical reflective practice. Blogs and wikis support opportunities for collaborative online learning while interactive digital case studies aid in the effective development of professional values, skills and attitudes.

This increased variety of digital content underpins the principles of virtual pedagogy, in particular the frameworks for online conversations, and enhances opportunities for interaction and collaboration for students both on and off-campus (Laurillard 2002). However, the multiplication of digital tools and enhanced digital landscapes has also intensifies difficulties with the regulation of inclusive digital practices. The Internet is becoming an increasingly visual environment, one which assumes individual access is taking place via a mouse and monitor. Contemporary online content often responds less well to text-to-speech software which remains dependent on accessible code. Multimedia content which is provided in a single fixed format, such as video with no subtitles or captions, or an audio file with no textual equivalent, provides restricted access as does text uploaded as a scanned image which is unable to utilise Optical Character Recognition (OCR) or has been converted to pdf format without appropriate structuring of headings in the original word processed document. The creation and management of digital content has become integral to the role of staff who teach and support learning but a whole institutional approach to ensuring inclusive digital practices has not always developed in tandem with this shift towards more digital ways of working.

Digital Landscapes; their inhabitants

There can be few people within higher education that have not been affected by the influence of the Internet on their work teaching or supporting learning. For

academic staff, virtual learning environments and tools have been promoted as a means to offer students flexible and distributed access to collaboration and the construction of new understandings (JISC InfoNet 2008, Laurillard 2002, Mayes *et. al.* 2009). The responsibility for enabling this move from face-to-face delivery to the anonymity of digital transmission has posed multiple challenges not least of these is the shift in role from lecturer to facilitator of the virtual learning experience. The redesign of analogue content to suit a digital medium can require a steep learning curve in order to develop the prerequisite confidence and competence required for working within a digital medium. Digital landscapes are fast changing environments and the necessary thresholds for engagement are continually shifting. This results in a continual increasing of the divide between those taking on the challenge and those still reluctant to engage with digital teaching and learning practices (Watling 2009). Where there is a lack of central institutional support for the appropriate digital literacies ensuring effective transfer of skills from face-to-face to digital environments, the end objective may be achieved, for example course content uploaded, without the prerequisite change in practice to ensure inclusive access.

While there is evidence that students are arriving on campus with increasing digital lifestyles (JISC, 2008), research findings reveal a range of inconsistencies in student experience (Sharpe and Benfield 2005, Seale, *et. al.* 2008). Students may have familiarity with personal digital technologies, but they also demonstrate wide variation in confidence and competence (JISC 2007, JISC 2008). Research into the Internet behaviours of young people highlight the need to build appropriate digital literacies into the curriculum. Research data reveals that while many users had confidence, they lacked the prerequisite analytical skills and showed poor critical judgments in understanding legitimacy of authorship (CIBER, 2009). Knowledge about the diversity of ways in which digital resources are accessed is critical to ensuring the production of inclusively designed content. Valuable research into the learning experiences of users of assistive technology has been carried out by the UK LExDis project which aimed to make e-learning materials easier to use and accessible (Seale *et. al.* 2009, http://www.lexdis.org.uk) TechDis, a leading educational advisory service, working across the UK, in the fields of accessibility and inclusion, also provide

valuable information and support for inclusive practice with digital data (TechDis 2009, http://www.techdis.ac.uk). The challenge for the education sector is to spread this timely and appropriate knowledge about the digital experiences of a diversity of users across individual institutions.

Digital Landscapes: inclusive potential versus exclusive practice

> 'Digital inclusion, like accessibility, is a ubiquitous term that is rarely explicitly defined. It is possible to read a whole report or article and by the end not know exactly how the author is defining digital inclusion. The vagueness around the term means that digital inclusion is in danger of becoming a meaningless concept which at best is ignored and at worst rejected.' (Seale 2009:3)

Digital inclusion in this paper is defined as ensuring access to resources through inclusive practice with the creation and uploading of digital content. The Internet in general, and the educational virtual learning environment in particular, not only enables courses to be delivered independently of time and location restrictions, but the flexibility of digital data to support customisation for individual preference offers the potential for widening access to higher education. However, this potential for digital inclusion is threatened by exclusive digital practices which restrict content to single formats and prevent adaptation to personal requirements. Within higher education, digital landscapes increasingly rely on individual staff for population of content and these resources most commonly include word processed documents and visual slide-show presentations. The prerequisite learning curve required for developing digital confidence and competence often means the need for taking responsibility for inclusive digital practice is frequently overlooked. The result of such exclusive practices is the potential for digital inclusion is lost.

> 'If the staff in higher education do not design, develop and support accessible e-learning materials, then the gap between disabled and non-disabled students will widen and technology will outstrip its usefulness as

> a tool that can facilitate access to learning, curricula, independence and empowerment.' (Seale, 2006: 27)

The adoption of a social model of disability calls for recognition that barriers to access and participation are located in the built environment rather than the result of individual sensory or physical impairment. The social model has been prevalent in the UK for over two decades and resulted in changes such as the provision of ramps into public buildings to ensure access for wheelchair users. While there is no such thing a 'one size fits all' model, these ramps have never the less come to be appreciated by a wider proportion of the population including those pushing prams and buggies, shopping trolleys or suitcases on wheels. This is an example of inclusive practice where changes for some result in an improved experience for many. However changes in attitudes can be more difficult to sustain and without personal experience of assistive technology the reality of digital exclusion can remain invisible.

> 'Readers said they were surprised about some of the statements about accessibility as there is special software for those with special needs and there is guidance for software developers related to meeting the needs of those with special needs.' (Watling 2010: personal communication)

The quote above has been extracted from the feedback on a bid by the author of this paper to research into the digital exclusion of people with visual impairment. It offers a useful demonstration of common assumptions which need to be challenged if exclusive digital practices are to be challenged and removed. The term 'special software' for 'those with special needs' suggests access is being denied through individual impairment rather than from environmental barriers and while 'special software' or assistive technologies, are available, this fails to acknowledge they are of limited use if digital content has not been designed with their needs in mind. The feedback is correct in that guidance for 'software developers' does exist, for example through the Web Accessibility Initiative, but there is little evidence of any legal pressure for compliance and finally, the term

‘software developers’ suggests responsibility for digital access is seen as lying elsewhere when the actual need to ensure digital inclusion is closer to home than is frequently recognised.

Understanding virtual pedagogy is about more than adopting appropriate techniques for transferring content from face-to-face to digital delivery. While these techniques are key to the construction of effective digital learning, there remains a tendency to design and deliver digital content in the same format used by the author. In the majority of cases this follows a MEE-Model whereby MEE represents using a computer with Mouse, Eyes and Ears with an assumption that all users will follow a similar MEE-Model pattern. All too frequently this derives from an insufficient awareness of the true value of digital data which, unlike the historical single-fixed format of the printed page, lies within its flexibility. Not only can it support text-to-speech and speech-to-text technology, inclusively designed digital data allows changes to size, shape, style and colour contrast to suit individual preference and need. Expert knowledge on reducing the barriers to this inherent adaptability is critical if the inclusive potential of digital landscapes is to be realised.

Conclusion

Digital divides are multiple and complex in nature and ensuring inclusive practice with digital data will not be enough to bridge them all. However, for users of assistive technologies, who cross multiple categories of social exclusion, effective digital literacies and inclusive ways of working are key to ensuring an effective and equitable learning experience. In uncertain times for the future of the university, the art of prediction becomes even more precarious, but however higher education evolves it must be hoped it will continue to support diversity of participation. To do this will require learning environments that reflect a broad digital landscape, one which is relevant to all potential graduates of the future. This will involve support for assistive as well as mainstream technology so digital data can maintain its power as a tool for equity of access.

There has been considerable emphasis on the power of technology to transform and this can obscure some of the necessary changes in practice required to adopt digital ways of working. Transformation has been described as less of a process and more a series of events with the suggestion that a more suitable analogy may be metamorphosis (Mayes *et. al.* 2009: 8). Biologically, this would include changes in form and habits during what is classified as normal development. Similarly, analogue teaching resources cannot be transferred to digital environments without behavioural changes in forms and habits. The construction of quality digital education, and the principles of virtual pedagogy, will continue to be a human rather than a technical construction and these processes must include awareness of inclusive digital practices. In order to achieve this it will be necessary to revisit policy in relation to the construction of digital landscapes. All too often, procedures which refer to inclusive practice miss the fine detail of supporting the necessary changes required at an individual level. In the future, the adoption of new ways of digital working must include awareness of how barriers to access can inadvertently be put in place, but just as easily be removed with the appropriate knowledge and skill. Ensuring staff have the relevant time, training and support to develop their digital confidence and competence is crucial if the curriculum is to be transformed for the learners of the future and to ensure that digital landscapes fulfil their inclusive potential.

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