Digital landscapes: Inclusive potential versus exclusive practice

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The expression 'Digital Divide' refers to more than access to technology, for the possession of hardware cannot guarantee equity of participation. For users of assistive technologies, 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 access will continue to be denied. The advantage of digital data is its flexibility which ensures it can be available in multiple formats and customised to individual preference. To transform the curriculum for the needs for future learners, and work effectively within digital landscapes, requires confidence and competence with the environment plus an understanding of inclusive practice so as to minimise barriers. These requirements should be neither under-estimated nor their presence assumed. As digital data becomes increasingly prevalent so the divide between inclusive and exclusive digital practices is in danger of widening. This paper suggests that ensuring accessible digital landscapes in higher education requires individual responsibility supported by a whole institution approach; both of which recognise the value of digital inclusion.

Keywords: digital inclusion, digital exclusion, diversity, virtual pedagogy, digital practice

Digital landscapes: introduction

The Virtual Learning Environment (VLE) was an early example of the adoption of educational technology across the higher education sector in the UK. As universities followed increasingly business modes of operation, with greater focus on market requirements for a flexible, employable workforce, the embedding of the VLE was supported by multiple promises of greater levels of efficiency. 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 cost and time effectiveness and improvements to existing processes and practice. In short, the VLE would generate transformative changes of benefit to the whole institution (HEFCE 2009).

The author of this paper coordinates virtual learning opportunities in a central Educational Development Unit. A key role is the identification of bridges between the 'technology' and the 'pedagogy' in order to support the pedagogical potential of digital environments. Integral to this role is the awareness that while technology can offer flexible, distributed access to teaching and learning resources, it also creates 'digital divisions' where access is denied.

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 affordance of digital technologies are being disadvantaged. These divisions, constructed from a mix of exclusive environments and personal resources, reflect existing categories of social inequality (Seale 2009). However, one category of exclusion that crosses all social divides is the 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 lies not only in the range of assistive technology available but in the inherent flexibility of digital content to be customised to suit individual requirements and ensuring inclusive learning opportunities. In order to maximise digital inclusion, appropriate policies and practices are required. Without these, access can inadvertently be denied. This paper suggests that barriers to digital access are social in origin and responsibility for ensuring digital inclusion lies not only within the construction of the technology but also on the inclusive practices of the authors of digital content. Without this assurance there is a danger that the technology which supports access will deny it and the university risk replicating wider social inequity rather than challenging it (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 digital does not replicate the barriers to participation which can be 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. 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. This contains greater levels of interaction and support for the development of user generated content. One effect is the increasing democratisation of the creation of digital content which has passed from being solely in the realm of the 'expert' web designer to individual users with the means of access.

The institutional VLE now contains multiple possibilities for content creation and innovative assessment activities. Educational content creation has benefited from the Creative Commons movement and institutional support for digital repositories and the sharing, reusing and repurposing of existing digital materials. In 2010, a digital teaching toolbox may include a range of Web 2.0 style software for creating interactive learning resources. The production of multi-media content has become increasingly user friendly making podcasting and video both manageable and affordable. Blogs and Wikis support a range of opportunities for collaborative online learning while interactive digital case studies can support the effective development of professional values, skills and attitudes.

This increase in variety of digital content underpins the principles of virtual pedagogy, with their recognition of the value of digital interaction and collaboration, for students both on and off-campus (Laurillard 2002). However, a significant consequence is increased problems in the regulation of inclusive digital practices for example content provided in a single fixed format it denies access to users of assistive technologies, such as video with no textual equivalent or text provided as a scanned image rather than utilising Optical Character Recognition (OCR) facilities. While the creation and utilisation of digital content is integral to the role of staff who teach and support learning; for example the UK Professional Standards Framework contains a requirement to 'demonstrate knowledge of appropriate technologies' as one of its six areas of Core Knowledge, the responsibility for 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 patterns. For academic staff, the VLE and the wider Internet has 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 many challenges. 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. The necessary thresholds for engagement are continually shifting increasing the divide between those taking on the challenge and those reluctant to engage (Watling 2009). If there is a lack of central support for the transfer of skills from face-to-face to digital delivery, the end objective may be achieved, for example course content uploaded to the institutional VLE, or administrative notices onto an information management system, 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 (JISC 2007, JISC 2008). Research into the Internet behaviours of young people suggests a need to build appropriate digital literacy into the curriculum. Findings revealed that while many users had confidence, they lacked analytical skills and had poor critical judgment when assessing legitimacy and authorship (CIBER, 2009). Knowledge about the ways in which digital resources are accessed is critical to the production of inclusively designed content. Valuable research into the learning experiences of users of assistive technology was 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 is 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 is to spread such timely and appropriate knowledge about the needs and the digital experiences of users across the whole institution.

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> 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)

Digital inclusion in this paper can be defined as ensuring access to resources through inclusive practice with the creation and uploading of digital content. The Internet in general, and the VLE in particular, not only enables courses to be delivered independently of location and transport restrictions, but the flexibility of digital data to adapt to assistive technologies and support user preferences for appearance and delivery, offers empowering and transformative access to higher education. However, this potential for inclusion is threatened when exclusive digital practices restrict content to single formats and prevent customisation to individual requirements. Within higher education, digital landscapes increasingly rely on individual staff for their content and resources frequently take the form of word processed documents and visual slide-show presentations. In the prerequisite learning curve required to develop digital confidence and competence to produce digital data, the need for taking responsibility for inclusive digital practice is frequently overlooked.

> 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)

The quote above is from feedback from a bid 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 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 they are of limited use if the digital content has not been designed with their needs in mind. Guidance for 'software developers' does exist, for example through the Web Accessibility Initiative, but there is little evidence of legal pressure for compliance. The term 'software developers' suggests responsibility for access is seen as lying elsewhere when the need to ensure inclusion of access is closer to home than may be recognised.

Understanding virtual pedagogy is about more than adopting appropriate techniques for transferring content from face to face to digital delivery. While such 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, is 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. Reducing barriers to this inherent adaptability is critical to ensuring inclusive potential of digital landscapes is 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, it is key to ensuring an effective learning experience. In uncertain times, 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 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 practice. 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 individual level. In the future, the adoption of new ways of digital working must include awareness 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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