Computers & Education 82 (2015) 118–128

Contents lists available at ScienceDirect

Computers & Education

journal homepage: www.elsevier.com/locate/compedu

Not the right kind of 'digital capital'? An examination of the complex relationship between disabled students, their technologies and higher education institutions

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ARTICLE INFO

Article history:
Received 2 April 2014
Received in revised form
13 November 2014
Accepted 15 November 2014
Available online 21 November 2014

Keywords:
Disabled students
Higher education
Assistive technology
Digital capital

ABSTRACT

The paper focuses on disabled students in higher education (HE) and their use of technologies to support their learning. Disabled students commonly report that they feel they have to work harder than other students because they have to manage both their disability and their study. Access to and accessibility of technologies affects how well disabled students manage this workload. Data were collected from disabled students in a teaching-intensive university in UK using an online questionnaire survey and a follow-up semi-structured interview. A 'digital capital' framework was used to explore the relationship between disabled students and their technologies and examine the potential complexities of this relationship in more detail.

Our results show that while disabled students do have access to social and cultural resources; sometimes these resources are not appropriate or effective (e.g. school-based ICT qualifications) or they are not drawing on all the possible resources available to them (e.g. non-institutional based support or support from disabled students). This means that disabled students can lack the 'right' kind of digital capital to enable them to succeed within HE environments. These findings have implications for how HE institutions conceptualise and organise technology related support services for disabled students.

1. Introduction

The focus of this paper is disabled students in higher education (HE) and the factors that influence whether and how they use technologies to support their learning. For the purposes of this article the term disabled student will be used to refer to any student who has a sensory, cognitive, physical or psychological impairment and who may benefit from using technological tools and related services to support and promote access to equitable educational experiences and outcomes (Seale, 2013a). The term technology will refer to any generic or specialist (e.g. assistive technologies) that might support and enhance learning. Typical generic 'technologies' include university websites; Virtual Learning Environments (e.g. Blackboard); library databases; email and social networking applications (e.g. Facebook). Many disabled students can only access learning resources and engage with learning experiences if they have access to assistive technologies (AT). Typical AT include alternative interfaces (e.g. screen-readers); reading tools (e.g. text-to-speech); recording tools (e.g. voice recording); writing tools (e.g. word prediction); planning tools (e.g. mind-mapping software) and communication tools (e.g. synthetic speech) (Seale, 2013a). In the UK, disabled students are currently entitled to a Disabled Students' Allowance (DSA) which enables them to purchase AT and related training and also entitles them to support packages provided by universities. The affordability of the DSA is currently under review by the current UK

Abbreviations: AT, assistive technology; HE, higher education; DSA, disabled students allowance.

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http://dx.doi.org/10.1016/j.compedu.2014.11.007
0360-1315/

government; which depending on the outcome, could have a significant impact on the ability of disabled students to access AT and related support.

In this article, we argue that although access to and accessibility of technologies exerts a significant influence on disabled students' use of technologies, it is not the sole influencing factor. We argue therefore that 'digital capital' could be a useful framework for exploring the relationship between disabled students and their technologies and examining the potential complexities of this relationship in more detail.

1.1. Equity issues for disabled students in higher education

In several countries evidence shows that the numbers of disabled students in HE have steadily increased over the last twenty years (Korbel, Lucia, Wenzel, & Anderson, 2011; Madriaga et al., 2010). Despite these increasing enrolments there is evidence to suggest that disabled students continue to lag behind non-disabled students in terms of retention rates (Izzo, Marry, & Novak, 2008; Mamiseishvilli & Koch, 2011). One possible reason for low retention is the many challenges that disabled university students report they face. Disabled students commonly report that they feel they have to work harder than other students because they have to manage both their disability and their study (Hammer, Werth, & Dunn, 2009). This often requires significant effort to compensate for lack of accommodations (Ryan, 2007). Disabled students report struggles in the provision of accessible or adapted learning materials (Claiborne, Cornforth, Gibson, & Smith, 2011) and in particular in the provision of lecture notes (Brandt, 2011). These struggles are often linked to a lack of understanding and respect (Georgeson, 2009).

It is generally accepted that technology can remove barriers to equitable education for disabled students and therefore promote inclusion of disabled students in HE (Kajee, 2010). Studies have also shown that generic technologies can help ease some of the difficulties associated with having to manage both disability and study (Gerrard, 2007; Graves, Asunda, Plant, & Good, 2011). A number of surveys also reveal that disabled students are commonly using AT to support their studies (Fichten, Asuncion, Barille, Ferraro, & Wolforth, 2009; Fichten, Asuncion, Nguyen, Budd & Amsell, 2010).

Although it is generally accepted that disabled students can benefit from access to online learning material and AT, there is evidence to suggest that this access can be denied or hindered. In particular disabled students can be disadvantaged due to a lack of access to appropriate AT (Davies, 2007; Draffan, 2009) or inaccessible design of university websites and online learning material (Fichten, Ferraro, et al., 2009; Kurt, 2011). The positive and negative issues of access highlighted here have led some to argue that technology is a 'double-edged sword' (Byerley & Chambers, 2002, p.169) and that disabled students in HE are on the 'wrong side of a second digital divide' (Burgstahler, 2002, p. 420).

1.2. Disabled students and their relationship with technologies

One common response to the identified 'digital divide' for disabled students in HE is to use the 'lens of accessibility' to identify and advocate for changes in individual and institutional practices. Disabled students are presented as oppressed victims of their universities, who are deprived of equitable access to important learning resources as a result of institutional non-compliance with legal requirements, professional codes of practice or technical standards and guidelines (Steyaert, 2005). Faculty and e-learning professionals are urged to improve their practices and senior managers and student support services are urged to improve their provision of and support for the use of AT (Asuncion, Draffan, Guinance, & Thompson, 2009; Fichten, Ferraro, et al., 2009).

Seale (2013a) argues that one problem with relying on an accessibility lens is that it oversimplifies the relationship between disabled students and their technologies by assuming that 'access' is the only factor that has a direct causal relationship with 'use'. There is growing evidence to suggest that this is not the case. For example, although there is evidence that disabled students receive support and encouragement to use technologies from peers and family (Ari & Inan, 2010; Sharpe, Johnson, Izzo, & Murray, 2005) and are competent and confident users of technologies (Asuncion et al., 2012; Seale, Draffan, & Wald, 2010); there is also evidence that shows that disabled students can on occasions reject or abandon AT (Roberts & Stodden, 2005; Seale et al., 2010). Additionally, there is conflicting evidence that shows that disabled students rate technology provision and support positively (Roberts, Crittenden, & Crittenden, 2011; Sharpe et al., 2005) and yet can also resist engaging with AT training (Draffan, Evans, & Blenkhorn, 2007; Seale et al., 2010).

In this paper we will explore the extent to which the concept of 'digital capital' provides an alternative lens that can illuminate the complexities of the relationship between disabled students, their technologies and HE institutions. Digital capital focuses less on issues of access and more on the social and cultural resources that people draw on to enable them to be a valued and functional member of society, and specifically in the case of disabled students, a successful learner within the HE environment.

1.3. Understanding the relationship between disabled student and technologies through the lens of digital capital

Cultural capital is generally understood as the possession of cultural competencies and knowledge that enable people to be cultural consumers in ways that are valued and expected in society. Social capital refers to the benefits that are derived from the social connections and networks of an individual or group (Bourdieu, 1997; Putnam, 2000). Bourdieu and Putnam were not writing specifically about disability or technologies; they were interested more generally in what unites and separates people within the communities that they live, work and learn. For this reason, their ideas have been used to challenge social injustice and inequities and to explore issues of widening participation in HE (Riddell, Tinklin, & Wilson, 2005; Thomas, 2001) as well as the influence on a lack of social capital on the academic success of disabled students (Harrison, Hemingway, Sheldon, Pawson, & Barnes, 2009; Zell-Sacks, Wolffe, & Tierney, 1998). Digital divide researchers have also been interested in using the concept of capital to explore technology use and exclusion (Rojas, Roychowdhury, Okur, Starubhaar, & Estrad-Ortiz, 2004; Selwyn, 2004). For example, Selwyn (2004) explores the relationship between capital, technology use and exclusion. Writing in the context of education, Selwyn offers a framework for identifying examples of 'technological' or digital capital that highlight the interactions between individuals and social structures of home, family and school. The acquisition of digital cultural capital is exemplified by individuals investing time in improving their technology knowledge and competencies through informal or formal learning opportunities, as well as a socialization into technology use and 'techno-culture' through family, peers and media. Digital social capital is developed