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DIGITAL INCLUSION AND CONNECTIVITY OF MINORITY COMMUNITIES: THE CASE OF COMMUNITIES OF DISABLED PEOPLE

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ABSTRACT

This chapter draws on an extensive literature review to provide an analysis of digital inclusion within minority community or group contexts with a specific focus on the take-up of digital technologies within communities of disabled people. First, it illustrates the complexity of digital inclusion and suggests that a community-based approach, whilst problematic, may offer some benefits. Then, it discusses the case of minority communities and specifically the example of people with disabilities that reveals the importance of digital inclusion for strengthening vulnerable to social exclusion communities, enhancing their within and between ‘connectedness’ and responding to perceived problems of social exclusion and limited social or community cohesion. At the same time, it points to evidence that physical, economic, educational/skills, psychological, cultural and political barriers potentially prevent disabled people from fully appropriating digital technologies. It concludes that there is a real need for more in-depth longitudinal studies of the effects of digital inclusion on the connectivity of minority communities such as people with disabilities.
INTRODUCTION

This chapter draws on an extensive review of the literature to provide an analysis of digital inclusion within minority community contexts with a specific focus on the take-up of digital technologies\(^1\) within communities of disabled people. It draws on research conducted under the auspices of the AHRC Connected Communities Programme funded project ‘Understanding the role of ICT use in connectivity of minority communities in Wales’ and draws on the findings from previous studies to present a critical review of the current state of knowledge regarding digital divides and community connectivity within what broadly can be termed communities of people with disabilities. This chapter provides an overview of the outcomes of the first two phases of the project which aimed to summarise key concepts and arguments in theory- and research-related literature regarding digital divides and Information and Communication Technology (ICT) use/non-use, on the one hand, and community connectivity and its various and continuously expanding forms in minority communities, on the other.

Four key conceptual elements were identified in the first phase of the project (Figure 1). Firstly, complex, ever shifting and multi-faceted concepts of ‘digital divides’ (Bradbrook and Fisher 2004; Cammaerts et al., 2003; Livingstone and Helsper, 2007; Norris, 2001; Selwyn, 2004; Tsatsou, 2011; Van Dijk, 2006; Van Dijk and Hacker, 2003) were identified as a conceptual tool for understanding role of ICT in the wider social inclusion of historically deprived or minority communities. Secondly, the ambiguous and nebulous concept of ‘community’ (Delanty, 2003, Evans, 2004; Tönnies, 1963; Tyler, 2006; Worley, 2005) provided the broader landscape for a discussion which challenges conventional understandings of ‘community connectivity’. Moreover, the third core concept, ‘community connectivity’ (Gaffikin and Morrissey, 2011; Hudson et al, 2010; Levitas et al., 2007; Worley, 2005) was operationalised within the project. Finally, the language of ‘minority communities’ suggests community formations such as communities of people with disabilities (Adam and Kreps, 2009; Baker et al., 2009; Dobransky and Hargittai 2006; Goggin and Newell, 2003; Jacko and Vitense, 2001; Pilling et al., 2004) that depart from traditional definitions of community and bring to the fore issues related to ‘power’ and

\(^1\) In this chapter, the term digital technologies is used interchangeably with the term Information and Communication Technologies (ICTs) to refer to the rapidly and ever evolving set of increasingly integrated software, hardware and architecture/infrastructure enabling access, store, transmission, and manipulation of information as well as new forms and complex levels of communication. Here we refer broadly to the use of ICTs or digital technologies, but the focus of the review of the literature was mostly on Internet take-up and use.
‘connectivity’, which in turn pose the question of if, and how, minorities can be distinguished from the ‘mainstream majority’.

The review presented in this chapter aims to approach the highlighted conceptual elements by synthesising the relevant literature and by identifying available and missing evidence with regard to communities of people with disabilities in particular (a systematic evaluation of empirical research data which was conducted in the third and final phase of the project is not reported here). The more specific objective of this chapter therefore is to offer some critical reflections on existing accounts of the impact of ICTs on changing cultures and patterns of connectivity within and between communities of disabled people, and the potential of multifaceted digital divides in constraining or shaping these forms of connectivity. Thus, it aims to demonstrate not only the positive role of inclusion in connectivity but also the ongoing risks for digitally driven marginalization and exclusion both within such communities and between these communities and society more broadly framed.

**Figure 1**: Research map

Regarding the methodology of the review presented in this chapter, the following questions were addressed from the start thus drawing up the overall research process and specifying the directions, focus and shape of the review:

- How does the literature review differ from the research review conducted in the final phase of the project? It was decided that the research review would only report on primary or secondary empirical research data, namely on actual research outputs, whereas the literature review would draw on theoretical as well as research-related evidence;
• *How does the literature review serve the project as a whole?* The importance of the review derived from its potential to conceptually define the territory of the work and map out debates and issues that would guide the research review thereafter;

• *What literature should be included in the review?* It was decided that theoretical or research-related work would be included, while work that mostly reports original or secondary empirical data would be excluded;

• *Where could the literature be located? Should the search for it take place online or offline?* It was decided that key online, electronic literature archives, libraries and databases such as JSTOR and Google Scholar would be accessed for locating the literature and that online search tools would be employed to the maximum possible degree;

• *How should the literature review be structured?* It was decided that general themes would be reviewed first, followed by more specific review areas (e.g. digital inclusion review to be followed by a review of inclusion issues concerning minority communities).

• Finally, review length and timelines, alongside other specifics, were considered in order to draw the methodology and process of the entire review work.

The first section that follows offers an introductory discussion of digital inclusion by highlighting the shifting ground of conceptualizing digital inclusion and casts some light on the importance of inclusion in terms of socio-economic exclusion and marginalisation. The second section proposes a community-based approach to analyzing digital inclusion and introduces the concept of community connectivity. The third section draws on Putnam’s (2000) distinction between bridging (inclusiveness) and bonding (exclusiveness) forms of social capital to begin to develop the conceptual framework operationalised within the chapter. On the basis of the social capital theory, it discusses the concept of community connectivity and argues that digital technologies can perform a key role in reshaping community connectivity by acting as a catalyst for the emergence of new forms of connectivity. This argument implicitly identifies the need for research that sheds light on how different types of technologically mediated social capital perform a range of roles in fostering connectivity within and between minority communities in particular.

The fourth section summarises the findings from previous studies on the use of digital technologies by people with disabilities. By operationalizing Putnam’s social capital theory in the discussion of the literature, it stresses that technologies provide a new focus for understanding bridging and bonding forms of social capital and thus for fostering
connectivity within and between communities of people with disabilities thus responding to perceived problems of social exclusion and limited social or community cohesion. At the same time, it discusses evidence of barriers to digital inclusion and offers words of warning on how such barriers not only are related to pre-existing forms of exclusion but also stretch and further exacerbate the marginalization that people with disabilities experience. The concluding section summarises evidence as gauged from the existing literature and highlights literature gaps and outstanding issues that should be addressed in future research.

**DIGITAL INCLUSION: ASPECTS, FACTORS AND EFFECTS**

Digital inclusion is commonly approached in terms of digital inequalities and associated divides in the access, use and effects of digital technologies. Digital divides have been ‘created between those individuals, firms, institutions, regions, and societies that have the material and cultural conditions to operate in the digital world, and those who cannot, or cannot adapt to the speed of change’ (Castells, 2002: 270). Van Dijk defines them as ‘the gap between those who do and do not have access to computers and the Internet’ (2006: 178) and Norris sees the phenomenon as ‘any and every disparity within the online community’ (2001: 4).

Previous attempts to study digital divides mainly involve ‘the multifaceted concept of access’ (Van Dijk and Hacker, 2003: 315). Whilst access to the Internet is only one of many components to the study of digital exclusion, it has formed the basis for the majority of studies to date. As Lengsfeld (2011) suggests, most quantitative studies are primarily concerned with access indicators as opposed to actual Internet usage and do not go beyond binary divisions between users and non-users to consider disparities in actual levels of Internet usage (‘digital inequality’). Debates about the nature and scope of divides acknowledge the need to depart from the old-fashion, conventional dichotomous split between ‘haves’ and ‘have not’s’ to explore more nuanced, multiple levels of access, use and appropriation of digital technologies so as to capture the role of technology in connectivity of individuals as well as within and among communities (Couldry, 2003; Livingstone and Helsper, 2007; Selwyn, 2004; Van Dijk, 2006; Witte and Mannon, 2010).

Bradbrook and Fisher (2004) have supported such an approach by arguing in favour of the ‘5 Cs’ of digital inclusion: connectivity - access and its various forms; capability - skills and employability; content - quality or community focussed content; confidence - self-efficacy
or motivation and; continuity - continuous and on-going usage. The 5 Cs highlight in particular the importance of ‘self-efficacy’, namely the ‘belief that one can successfully perform a distinct set of behaviours required to establish, maintain and utilize effectively the Internet over and above basic computer skills’ (Eastin and LaRose, 2000: 2). Individuals with low self-efficacy, for example, are less likely to be motivated to use the Internet in the future and confident about the benefits they can gain out of its usage in the long term.

In seeking to understand the complex phenomenon of digital inclusion researchers have increasingly focused on ‘complex questions of levels of connectivity in terms of the capability and distribution of the access concerned’ (Selwyn, 2004: 348), as well as effective usage through requisite skills, knowledge and support (Van Dijk, 2006). Thus a combination of access problems, lack of skills and literacy, as well as negative attitudes to technology can provide a better picture of digital divides and digital exclusion. For instance, categories of non-users, such as ‘incapable refusers’, ‘self-conscious indifferents’, ‘the willing but incapable’, ‘skilled ICT lovers with limited access’ and ‘price-sensitive pragmatists’ have been used to identify the nuances and variations in digital technology related disparities (Verdegem and Verhoest, 2009). A group of particular interest are ‘restricted users’ who do not necessarily follow the latest developments in technological services and applications. Restricted use might stem from the user’s own will and conscious decision, as well as from low self-efficacy, limited skills or other access and attitudes parameters which can have diverse effects on user’s digital inclusion, engagement and development.

These advances in conceptualising digital inclusion essentially flag up qualitative factors of inequality and divide and invite an in depth exploration of the complexity of quality of use and its benefits for the user. In particular, there has been an increased emphasis in the literature on the importance of skills for the use of technology as well as on the relevance of technology to users’ lives and interests (Bakardjieva, 2005; Selwyn, 2004, 2006). Reisdorf (2011) argues for the cases of the UK and Sweden that non-users are characterized primarily by their lack of interest in the Internet and skeptical attitudes towards it. Thus even if near ubiquitous Internet access is ensured, people may still not use it to the desired extent and with the desired results, as engagement is dependent not only on economic and practical parameters but also on socio-psychological ones (Selwyn 2004: 349). Likewise, Stanley (2003) draws attention to the importance of psychosocial obstacles, such as relevance, fear and self-concept. As a result of the on-going attempt to define the nature, scope and factors of digital inclusion, there has been a growing body of literature that proposes contextualising
inclusion within a wider setting of inequalities and disparities where policy as well as socio-cultural parameters matter (Tsatsou, 2011).

Much of the literature and research focused on conceptualizing and contextualizing digital inclusion has also raised questions as to why digital inclusion remains important. It has been argued that Internet technologies are (among other technologies) increasingly important to life, work, and entertainment and ‘even more important if certain groups and areas are systematically excluded’ (Norris, 2001: 10). At the macro level, communication resources are imperative for information provision, for enabling participation and for the exercise of citizenship, while social, economic and political exclusion can be exacerbated further due to digital exclusion (Cammaerts et al., 2003; Mansell, 2002). In this regard, access to Internet technologies is considered ‘a requisite for overcoming inequality in a society in which dominant functions and social groups are increasingly organized around the Internet’ (Castells, 2002: 248). On the other hand, from a skeptical perspective, one can question whether digital divides create new social disparities effecting significantly on individual and social life.

DIGITAL INCLUSION: A COMMUNITY PERSPECTIVE

The potential role of digital technologies in promoting social inclusion often involves studies of the impact of technology on communities and community living. Rowson et al (2010: 1) note that ‘the call for stronger communities is pervasive’ and that ‘politicians and people in every walk of life seem convinced that communities can solve social ills and build a happier, more fulfilled society.’ At the same time, communities today are considered social networks in crisis, impoverished, atomised, fragmented, with little trust and social bonds (Robson, 2000; Putnam, 2000) and digital technologies are often thought of as offering the potential to encourage, facilitate and even revolutionise community through innovative networks of cooperation, inclusion, democratic decision-making and mutuality (Etzioni, 1993: 6; Robson, 2000: 71).

Varied approaches have been taken to interpreting community. Delanty argues that community has been conceptualised in three distinct approaches (2003: 31). Firstly,

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2 Worley (2005: 486) notes that the concept of community has commonly been identified as being a ‘highly ambiguous and nebulous term, which needs to be treated with caution and care’. As Kendall (2011) argues, to define community is like defining the unthinkable as community members embrace empathy, affection, support, interdependence, consensus, shared values, and proximity, as well as their opposites (e.g. aggression, dispute, conflict, diversity of ideas etc).
‘community as tradition’ associated with Tönnies’ (1963) classic distinction between Gemeinschaft (traditional, organic forms of community) and Gesellschaft (individual-focused, modern society). Secondly, ‘community as a moral force’ associated with Durkheim’s (1964) rejection of Tönnies’ critique of modern society and the key role of moral individualism in modern, civic forms of community. Thirdly, the emergence of the ‘symbolic community’ based on Cohen’s (1985) argument that community should be understood more as a symbolic construct rather than as a social or institutional form. Similarly Anderson’s (1983) identification of nations as ‘imagined communities’ suggests that community has more to do with common cultural identities and practices than day-to-day, face-to-face engagement. It is this latter characterisation of ‘symbolic’ or ‘imagined communities’ where a sense of community can be based on shared identity or common interests, and therefore may be geographically dispersed.

An alternative approach identifies ‘weak’ and ‘strong’ senses of community (Tyler, 2006). Tyler (2006: 23) argues that the former utilises the term of community as ‘a synonym for people’ and essentially refers to inhabitants of a specific area or local populations benefiting from community development or regeneration. In marked contrast, ‘strong’ forms of community are centred on ‘symbolic’ or ‘interest communities’ and are therefore defined by participants within the communities themselves. Tyler (2006: 24) argues that in this form ‘community is making a play for power’, for example, through ‘groups asserting identity, not on the ground of locality, but in terms of some form of common origin’ or ‘groups with other shared, inherited characteristics’.

The concepts of ‘strong’, ‘imagined’ or ‘symbolic’ communities and the understanding of community beyond an aggregation of individuals within fixed geographical boundaries primarily involve discussions about the role of new technologies in strengthening existing offline communities and establishing new forms of communities of interest, of attachment and of place in cyberspace (Wilmott, 1986). In this regard, technologies can arguably contribute to community revitalisation through a range of mechanisms, including:

- Rebuilding and empowering offline communities (Benedict, 1991; Communities Online, 1999; Schuler, 1996). Technologies can play a key role in creating ‘a reordered world where the individual can sample a community life that has long been eroded by the rush for individual gains’ (Odone, 1995: 10). In this case, although communications are conducted online or via technological devices, the bridging of distances in offline spaces takes place with people associated with the same or different communities finding alternative paths of communication, information and initiative-taking.
Through establishing virtual communities (Rheingold, 1993; Wellman and Gulia, 1999) and developing ‘digital neighbourhoods’ (Negroponte, 1995: 7). Virtual communities can emerge at a variety of spatial scales from local-specific to global communities, reflecting various interests and evolving in different ways. According to Rheingold, virtual communities are ‘social aggregations that emerge from the Net when enough people carry on those public discussions long enough, with sufficient human feeling, to form webs of personal relationship in cyberspace’ (2000: xx). Fuchs complicates such a definition and identifies three levels of virtual community namely: level 1, where community members share common technological infrastructure of computer mediated communication; level 2, where community members interact and share topics and interests in computer mediated communication; and level 3, where community members cooperate and appreciate each other (Fuchs 2008: 310-2). The nature of virtual communities challenges traditional understandings of community and adds complexity and significance to it.

Finally, alternative forms of communities enabled by new technologies are the community computing facilities, ‘venues stocked with computers and associated hardware and software where individuals can access ICT equipment and services’ (Evans, 2004: 77-8). To this category also belong information points, where local and interest-specific information can be found by using computer-based technologies. Delanty argues (2003: 167) that ICTs have ‘created powerful new expressions of community that go far beyond all hitherto forms of community’ and whereas in the past technology was portrayed as undermining community, it has now offered communities ‘new possibilities for expression.’ Delanty identifies three core strands of theory related to the emergence of these new forms of community living centred on the work of Rheingold (1993, 2000), Castells (2002) and Calhoun (1998). As briefly pointed out above, Rheingold’s conceptualisation of ‘virtual communities’ underlines the role of the Internet in providing ‘an alternative reality to existing realities and as having the capacity to transform society’ (Delanty, 2003: 173). Technology is characterised as performing a positive role in changing existing social relations and providing new spaces for social relations and communities which effectively do not exist ‘in reality’. Delanty (2003: 175-6) notes that this approach was critiqued by Castells, who rejected the separation of ‘virtuality’ and ‘reality’ and argued that ‘the internet has a positive effect on social interaction, enhancing democratic possibilities and offering people a more communicative means of ordering their relations.’ The Internet is characterised by Castells as part of a wider process where spatial communities have been
replaced by social networks centred on the individual. Wellman and Gulia (1999: 186) put forward a nuanced view, arguing that people on the Net have a greater tendency to base their feelings of closeness on shared interests rather than on shared social characteristics such as gender and socio-economic status. So they are probably relatively homogeneous in their interests and attitudes just as they are probably relatively heterogeneous in the participants’ age, social class, ethnicity, life-cycle stage and other aspects of their social backgrounds. On the other hand, the role of the Internet in encouraging new social relations between diverse groups is rejected by Calhoun. He argues that ‘the internet matters much more as a supplement to face-to-face community organisation and movement activity than as a substitute for it’ (Calhoun, 1998: 382 quoted in Delanty, 2003: 144). Therefore technologies strengthen existing social relations rather than facilitating new networks of diverse people. However, key questions remain regarding the extent to which issues around social exclusion and community cohesion highlighted in traditional conceptualisations of community are reflected or indeed exacerbated within the context of multifaceted forms of digital exclusion. The revitalisation of communities and the emergence of new community forms are matters to be addressed beyond purely optimistic views and predictions of the overall impact of what it is so-called information society (Lyons, 1998). In this regard, the literature is called on to produce analyses, sufficient evidence and well-grounded theorisations to develop some understanding of the range of levels of technologically mediated communication, interaction and connections developed in online and offline community spaces. This indicates in turn the need for specificity in considering the types of technologically facilitated interaction and exchange taking place and suggests a need for the study of a range of related bonds, connections, instances of collaboration and action as well as complex dynamics of disparity developed in community spaces via technology. The concept of ‘community connectivity’ can be proven particularly useful towards fulfilling such a need.

**DIGITAL INCLUSION AND THE COMMUNITY CONNECTIVITY QUESTION**

A key focus in terms of strengthening communities and thus responding to problems related to social exclusion and promoting social or community cohesion has been enhancing ‘connectedness’ or ‘connectivity’ within and between communities (Gaffikin and Morrisey, 2011; Hudson et al, 2010; Levitas et al., 2007; Worley, 2005).

The concept of community connectivity appears to be just as ambiguous and problematic as the broader concept of community. In recent years debates around the connectedness or
cohesiveness of communities have centred on the popular concept of ‘social capital’ and associated theorisations that underpin our work. Halpern (2005: 1) notes that much like the concepts of community and social exclusion there is considerable confusion over what social capital actually means and that as a concept it tends to be defined in very loose terms and therefore ‘sounds like everything and nothing.’ Perhaps the most common definition is that put forward by Putnam (1993: 167) who defined social capital as ‘those features of social organization, such as trust, norms and networks that can improve the efficiency of society by facilitating coordinated action’. Aldridge and Halpern (2005: 10-2) note that most forms of social capital have three key components: social networks which provide members access to information, benefits and support; social norms which are shared by members and provide rules around expectations of reciprocity, cooperation and trust; and sanctions which provide rewards and punishments for complying or breaking the agreed norms. Halpern (2005: 12) argues that the core elements can have both ‘formal (explicit, institutionally codified) and informal (implicit, tacit) aspects.’

The concept of social capital, as articulated by Putnam, is centred on ‘connections among individuals – social networks and the norms of reciprocity and trustworthiness that arise from them’ (Putnam, 2000: 19). Importantly in Putnam’s theorisation, social capital could be considered both a ‘private good’ (focused on individual benefits e.g. networking to get a job) and a ‘public good’ (focused on well-connected communities e.g. neighbourhood watch schemes). In addition, Putnam (2000: 21) argues that ‘networks and the associated norms of reciprocity are generally good for those inside the network, but the external effects of social capital are by no means always positive’. Therefore the positive consequences of social capital – mutual support, cooperation, trust and institutional effectiveness – can be directed toward ‘malevolent, antisocial purposes, just like any other form of capital’ (Putnam, 2000: 22). In order to understand the different effects of social capital, Putnam distinguished between two principle forms: bridging (or inclusive) and bonding (or exclusive):

Some forms of capital are, by choice or necessity, inward looking and tend to reinforce exclusive identities and homogeneous groups...Other networks are outward looking and encompass people across diverse social cleavages…Bonding social capital provides a kind of sociological superglue whereas bridging social capital provides a sociological WD40 (2000: 22-3).
These forms of social capital are not mutually exclusive in Putnam’s framework and they have been refined by Woolcock (2001 quoted in Field, 2003: 42) into three types:

- bonding social capital, which denotes ties between like people in similar situations, such as immediate family, close friends and neighbours;
- bridging social capital, which encompasses more distant ties of like persons, such as loose friendships and workmates; and
- linking social capital, which reaches out to unlike people in dissimilar situations, such as those who are entirely outside the community, thus enabling members to leverage a far wider range of resources that are available within the community.

The key point highlighted by both Putnam and Woolcock reflects the potential contrast between the different roles of social capital in terms of fostering connectivity within and between communities. Aldridge and Halpern (2002: 33) note that ‘high levels of bonding social capital relative to bridging social capital may adversely affect groups’. They argue that a possible explanation for poor labour market performance of ethnic minorities within Great Britain may be that although ‘they have strong ties to their own families and communities (bonding social capital), they lack contacts or networks with the wider community (bridging social capital) that could give them greater access to jobs and other opportunities.’ However, the broad language used to refer to social capital - such as social energy, social bonds, social ozone, social resources, informal and formal networks, good neighbourliness and social glue – and the difficulties in measuring these processes have tended to add to the conceptual confusion (ONS, 2001).

Clearly the potential role of digital technologies in creating virtual or alternative communities or reinforcing existing communities, as highlighted in the previous section, suggests that technologies such as the Internet could provide a new focus for bridging or bonding forms of social capital. Digital technologies arguably pave the ground for a whole new series of experiences and perceptions of ‘connectedness’ or ‘connectivity’ through extending and enhancing ‘bonding’ and ‘bridging’ social capital (Kavanaugh et al., 2005; Mandarano et al., 2010; Polat, 2005). Bell (2001: 110) notes, for example, that dealing with difference online is primarily about ‘boundary-drawing’ and that ‘compartmentalizing the heterogeneity of cyberspace into “neighbourhoods” of shared interests has become one important way in which communities are coalesced.’ Communities or individuals identified as different are effectively ‘bounded-out’ from these ‘virtual communities’ or ‘neighbourhoods’. In addition,
if individuals, groups or communities are effectively digitally excluded - for whatever reason - this may simply reinforce traditional forms of social exclusion.

In this regard, one could argue that research should examine technologically mediated forms and dynamics of ‘connectedness’ and their impact on existing forms of community connectivity by examining whether alternative means of social capital enhancement and new platforms for bonding and bridging social capital are formed (e.g. virtual communities, online groups and networks), namely whether new formations of social networks, new relationships of trust and mutuality within a community and new scales of engagement and communication with other communities and the public take place. More specifically, research should explore how (constructively or disruptively) digital technologies, their design, and their creative usages can enable communities to sustain, empower, and re-invent themselves through digitally enabled connectivity. This way research is invited to develop an understanding of how digitally enabled connectivity can open channels of expression and to investigate the impact of technology on levels of participation especially of communities or groups understood as being vulnerable to social exclusion, such as communities of people with disabilities.

**DIGITAL INCLUSION AND COMMUNITY CONNECTIVITY OF MINORITY COMMUNITIES: THE CASE OF PEOPLE WITH DISABILITIES**

There have been some studies concerned with the range of individual, community and policy factors which can facilitate access to ICTs for people with varying forms of disability (e.g. Jacko and Vitense, 2001). At the same time, there have been voices raising the problematic nature of such a discussion and questioning the concept of disability itself: ‘…disability, itself, is clearly a contested term, often defined against a norm of ability hence seen in terms of deficit.’ (Adam and Kreps, 2009: 1045).

According to UNESCO, more than 10% of the world’s population suffers from various disabilities running the risk of social and community isolation. ICTs offer to people with disabilities ‘the ability to compensate for physical or functional limitations, thus allowing them to enhance their social and economic integration in communities by enlarging the scope

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3 In the category of people with disabilities people with physical, cognitive, mental, sensory, emotional or developmental impairment can be included.
of activities available to them’.\(^4\) For instance, individuals can benefit through participating in distance learning programmes available online, through engaging in mobile video communications and distance education in sign language, as well as through taking advantage of Web 2.0 services and applications which provide greater flexibility in terms of the physical abilities required (e.g. audio, visual or textual applications and software) (Muhammad, 2008). Söderström (2009) acknowledges the importance of online support groups and disability-related networks on the Internet for empowerment of adult people with disabilities, while she finds that ICTs also contribute to the extension and globalisation of youth networks which, although not building on disability or disability-related issues, provide young people with disabilities with an escape from stigma and isolation. However, Baker et al. (2009: 48) suggest that ‘statistics reflecting access to the internet and use of computers by people with disabilities is sparse’. The research that has been conducted to date highlights the key differences between accessibility and usability of technologies and the types of factors that are likely to influence the adoption of a range of ICTs and largely draws attention to the need to recognise the importance of adaptations of tools to meet the needs of a range of groups of people with disabilities in society and to widen the use of such technologies. This includes, for example, more guidelines to promote access of Internet within and between such groups (e.g. Poulson and Nicholle, 2004) as well as a whole host of software and hardware adaptations. Several studies investigate the diversity of barriers (e.g. policy, perceptual, skills, technological, financial etc.) to online experiences that people with disabilities are faced with (e.g. Hollier, 2007; Vicente and Lopez, 2010). Others are concerned with the importance of psychological barriers in particular and the need to overcome disabled people’s fears that they lack the skills and confidence to use ICTs as appropriate through the provision of training and affordable assistive technologies (Boeltzig and Plilling, 2007: 44). A number of studies provide a critique of existing policy documents such as the new UK government’s eAccessibility Action Plan (BIS, 2010)\(^5\) that promotes enhanced digital participation within the UK but, it is suggested, lacks discussion of how

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\(^5\) The eAccessibility Action Plan released in December 2010 represents the UK government’s effort ‘into addressing physical accessibility for disabled people, underpinned by the Disability Discrimination Act and other legislation’ with regard to digital communications so as to ‘deliver equivalence of access for disabled people’ (BIS 2010: 5). It recognises that digital technologies offer new opportunities while raising new barriers to inclusion for disabled people and aims to offer a response to the Consumer Expert Group eAccessibility Recommendations in 2009 for better access to assistive technology, better information about what is available, better website design, better training for web designers and more software solutions for disabled people to use mainstream products and services.
such technologies will impact on people with disabilities (Watling, 2011). This, in turn, points to the increased ‘need for barriers to disabled people using access technology to be highlighted and addressed’ (Watling, 2011: 492); some of which were emphasised in a previous government commissioned research project (CEG, 2009).

Further studies are concerned with the implications of new technologies such as Wi-Fi on the so-called ‘disability divide’ (Baker et al., 2009). Others suggest that ‘accessibility for people with disabilities has been frequently neglected by the ICT industry’ and that ‘as a result, the level of computer usage and Internet access by people with disabilities is much lower than that of the rest of the population’ (Vicente and Lopez, 2010: 48). This is also related to current policies implemented in the field, as it has been found there are gaps in engagement of disability discourses with groups of people with disabilities lacking engagement with the dominant policy making agenda, thus suggesting that disability activists are included in the decision-making process concerning the web accessibility movement (Adam and Kreps, 2009). This has led some to draw attention to themes such as ‘digital disability’ and social constructions of disability which suggests ‘not only that technology will never deliver society from the reality of disability, but that disability continues to be constructed through such technology.’ (Goggin and Newell, 2003: 153). Or, according to Moser (2006: 373): ‘…technologies working within an order of the normal are implicated in the (re)production of the asymmetries they…seek to undo’.

Pilling et al. (2004) focused on the impact of the Internet on people with disabilities at a time when increasing numbers of government and commercial services were moving online. Their Joseph Rowntree funded research found that, whilst ‘direct information concerning Internet usage by disabled people in the UK is scarce’ (Pilling et al., 2004: 4), ownership of computers, and home access to the Internet, was lower for people with disabilities than non-disabled adults. They (Pilling et al., 2004: 19) suggest that whilst many of the issues that arose were common to the general population, such as concerns over security, cost of access, and motivational issues, there were concerns that are likely to be more prominent for disabled Internet users (e.g. physical strain, adaptation costs). These trends mirrored those found in previous studies of the use of the Internet in countries such as the United States (Dobransky and Hargittai, 2006; Guo et al., 2005; Lenhart et al., 2003).

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6 The types of factors that influence the decisions of people with disabilities to adopt or to abandon such technologies are explored in more detail by Seymour (2005).
A recent Equality and Human Rights Commission report (EHRC, 2010: 370) found little data on access to the Internet by people with disabilities in the UK but drew on the Digital Britain report 2009 (BIS, 2009; Jones, 2010) to suggest that ‘only a minority of people with physical and sensory disabilities have broadband access – 42% of people with visual impairments, 32% of people with hearing impairments and 35% of people with mobility impairments have broadband access’. The 2012 figures on Internet use in the UK (Ofcom, 2012) show that whereas 81% of the general population in the country take up the Internet (+1% compared to 2011) and 76% take up broadband (+2% since 2011), only 58% of those with disability use the Internet and 57% use broadband. Of those who do not use the Internet, 23% in the general population have asked someone else to make some use of the Internet for them and 28% of those non-users with some disability have done so. Also, only 8% of non-users with disability are likely to obtain access to the Internet at home in the next 12 months, whereas the respective percentage in the general population of non-users is 17%. These figures demonstrate the comparative disadvantage people with disability experience and the limited likelihood that this situation will improve in the immediate future.

Drawing on the European Commission’s IST Program project eUser (2005) in ten European countries, Vicente and Lopez (2010) found that only 35% of those who recorded themselves as disabled used the Internet as compared to 61% for those without impairment. The lower incomes of people with disabilities as well as higher costs involved in purchasing adaptive technologies were seen as important explanatory factors here with 58% of those that had a self-reported disability suggesting that the high costs involved acted as a deterrent to having a home connection. Other factors that were important included the extent of negative feelings towards the use of the Internet (almost double that for those people with disabilities as compared to those with no impairment) and heightened concerns regarding Internet security. Thus technical accessibility and feelings of intimidation are likely to be important here leading to the conclusion that accessibility and affordability are two key issues for policy makers to address in bridging the divide. Such findings mirror those of Dobransky and Hargittai (2006: 327) whose analysis of Internet use by type of disability suggests, however, that after controlling for confounding factors this apparent ‘disability divide’ declines for some categories of disabled people. This in turn suggests that analysing data concerning disability into just one unified category could be problematic when investigating use of technology and that ideally analysis of trends by type of condition to reflect ‘the divergent situations faced by people living with different disabilities’ (Dobransky and Hargittai, 2006: 331) should be conducted.
There are several calls within the published literature for more insights into how people with disabilities use computer-assisted technologies to enhance levels of social capital within communities through, for example, communication and social participation (Goggin and Newell, 2002; Seymour and Lupton, 2004; Watling, 2011). A recurring theme from the literature on ICT access and usage for people with disabilities is the lack of spatially and temporally comparable data. This is particularly the case for data related to the actual use of such technologies. Surveys of Internet take-up, for example, rarely include sections which enquire as to the use amongst disabled people and there is little evidence of input from people with disabilities into the design of the ICT surveys themselves (Vicente and Lopez, 2010). In addition, often, as Dobransky and Hargittai (2006) found, conclusions are drawn from small samples of data or from studies that have used descriptive statistics applied to large, random samples that do not permit the isolation of attributes associated solely with disability from compounding variables such as old age and low income that are often related to disability. These factors drive research away from effectively assessing the two-sided face of digital inclusion effects on connectivity of communities of disabled people where social capital enhancement goes hand-in-hand with accumulating technical and socio-psychological barriers to inclusion, thus shaping a complex picture of digital inclusion from a connectivity perspective.

CONCLUSION

The key concepts identified within this chapter illustrate the complexity and challenges of analysing digital inclusion and suggest that potential value can be derived by adopting a community-based approach to digital inclusion so as to adequately identify its nuances and effects on connectivity of diverse community groups. They also highlight the need to engage with the highly ambiguous and nebulous concepts of community and connectivity, with ICTs challenging conventional conceptualisations of community and community connectivity and adding conceptual and real life complexity to them. By drawing on the rich social capital theoretical framework, this contribution sheds light on reflections informed by the literature which illustrate that ICTs provide a new focus for conceptually understanding the bridging and bonding forms of social capital and thus for fostering connectivity within and between communities. The literature highlights the potential role of ICTs in creating ‘virtual communities’, suggesting that the Internet could provide a new focus for bridging or bonding forms of social capital. At the same time, it suggests that the potential role of ICTs in the
revitalisation of communities is researched beyond any optimistic views and predictions of the overall positive impact of ICTs and by considering nuanced community attributes, conditions and prospects.

The examination of people with disabilities demonstrates not only the problematic nature of the term ‘minority communities’— but also the importance of ICTs for strengthening communities traditionally vulnerable to social exclusion, enhancing both their within and between ‘connectedness’ and responding to perceived problems of social exclusion and limited social or community cohesion. At the same time, evidence points to a series of physical, economic, educational/skills, psychological, cultural and political barriers which prevent communities of people with disabilities from fully appropriating ICTs and enhancing their social capital and their experiences and perceptions of connectivity.

More specifically, the literature seems to place emphasis on the problematic character of the term ‘disability’ and a number of works highlight the argument of the social construction of ‘digital disability’. Evidence suggests that the cost of purchase of adaptive technologies as well as negative feelings towards the Internet constitute barriers for people with disabilities to access and advantageously use the Internet. This has significant implications for policy initiatives designed to address limited spread of the Internet and broadband in communities of disabled people and the corresponding issues of affordability, accessibility, usability, training and continuous support in an effort to help bridge digital divides between communities of disabled people and the rest of the population.

At the same time, given that these types of issues have only been relatively recently acknowledged, the studies conducted to date have highlighted the paucity of spatially and temporally consistent data which focuses directly on the use of ICTs by disabled people. In particular, there is a distinct lack of evidence on the nature of interactions with particular technologies by those with different types of disability. Thus, for example, while there is some evidence regarding the broad levels of broadband take-up by people with disabilities in the UK, there is limited information on the exact nature of the types of broadband services (e.g. ADSL, cable, satellite etc.) used and in particular regarding the extent of the use of adaptive technologies by such groups. Also, the review has highlighted evidence of clear gaps within the existing research with regard to the potentially contrasting use of such technologies within this broadly defined community. Although operationalising the language of ‘community’ to explore these issues appears to have many benefits, it is crucial to note that any construction of a community or communities related to disability needs to acknowledge the highly heterogeneous nature of such a community and therefore eschew
attempts to generalise findings for a community made up of individuals with very different types of physical, mental or learning impairments. The review has also noted the small sample sizes often used in such studies as well as wider problems in experimental design, such as the use of descriptive statistics applied to large, random samples, that often do not permit the isolation of attributes associated solely with disability and which may impact on the adoption and use of such technologies.

This in turn calls for more research which enables insights to be gained into the two-sided role of digital inclusion in the connectivity of people with disabilities related to: firstly, how people with disabilities use computer-assisted technologies to enhance levels of social capital through, for example, communication, interaction, exchange and participation; and secondly how such enhancement of connectivity can be challenged, compromised and even reduced by continuously presenting barriers to digital inclusion. Whilst there appears to be a relative consensus in the published literature regarding the need for more research in this area, this requirement also needs to acknowledge that such research may be expensive and time-consuming, that researching the use of technologies amongst potentially vulnerable groups needs to be done sensitively under strict ethical guidelines and that robust research partnerships are required across academic, public, private and third sectors in order to deliver this research agenda. The prospect for such collaboration, in our experience, is often met with enthusiasm by key stakeholders, but the availability of time and resources to help meet such objectives are perhaps more uncertain than ever.

REFERENCES


