Vicious cycles: digital technologies and determinants of health in Australia

ABSTRACT

The use of digital technologies continues to bring rapid changes to personal and institutional forms of communication and information. Digital technologies are becoming increasingly important as ways to gain access to most of the important social determinants of health including employment, housing, education and social networks. However, little is known about the impact of the new technologies on opportunities for health and well-being. This paper reports on a focus group study of their impact on people from low socio-economic backgrounds. It uses Bourdieu’s theories of social inequities and the ways in which social, cultural and economic capitals interact to reinforce and reproduce inequities to examine the ways in which digital technologies are contributing to these processes. Six focus group discussions with 55 people were held to examine their access to and views about using digital technologies. These data are analysed to determine what factors facilitate access to digital technologies and what the implications of exclusion from the technologies is likely to be for the social determinants of health. The paper concludes that some people are being caught in a vicious cycle whereby lack of digital access or the inability to make beneficial use reinforces and amplifies existing disadvantage. The paper concludes with a consideration of actions health promoters could take to interrupt this cycle and so contribute to reducing health inequities.

Keywords: digital exclusion, ICTs, health equity, Bourdieu’s capital, social determinants of health
INTRODUCTION

The past two decades have witnessed a rapid and relentless increase in the use of digital technologies. These innovations in digital information and communication technologies (digital ICTs) have the potential to have a positive impact on health and to be democratic in the way that they bring innovation and opportunities to people. Digital technologies are becoming increasingly important as ways to gain access to most of the important social determinants of health including employment, housing, education, direct health information and access, and social networks. Yet little is known about the ways in which these technologies will impact on health equity. This paper will explore how digital technologies are an increasingly important determinant of health and argue that health promoters need to develop an understanding of how they interact with and reinforce other social determinants of health and how they have the potential to increase existing health inequities.

The digital revolution and its differential impact

The development and diffusion of digital ICTs are having a profound effect on modern life and are viewed as having the potential to either alleviate or exacerbate existing inequalities (Warschauer, 2003; Warschauer and Matuchniak, 2010). Being able to use digital information and communication networks (especially the Internet and mobile phones) is increasingly important for people to gain full citizen participation in economic, social, educational, political and cultural life (Lee et al., 2002; Kvasny et al., 2006; Vinson, 2007). This is particularly so as the private sector and government are relying more and more on ICT-mediated provision of services, support and information. This revolution in communication technology has happened rapidly over the past two decades and has profound implications for our lives. In terms of health, these changes have the potential to be a force for more equitable population health, but only if the implementation and impacts of using new technologies are assessed for likely impacts on health status. The impact of technologies on equity have been noted, with Parsons and Hick (Parsons and Hick, 2008) talking of “the digital divide”, discussing the impact of this divide and the need to move to notions of digital inclusion. Furthermore, Helsper et al. (2009) have shown that, across most of Europe and the major English-speaking countries, the uptake of digital technologies (as indicated by percentage of Broadband subscribers) mirrors existing social inequalities as indicated by the Gini Coefficient. Van Dijk (2005) has also argued that the distance between the ‘information elite’ and the ‘unconnected or excluded’ is widening, leading to rising levels of social and communication inequality.

Nevertheless, McLaren and Zappala (2002) noted that little is known about the factors associated with access and use of ICT among different socioeconomic groups in Australia. Concern has been expressed that as more-advantaged groups continue to have better digital access, this is likely to mean that the less-advantaged will have restricted access to a range of opportunities made possible by ICTs (Boese and Scutella, 2006; Lee et al., 2002; Vinson, 2007) and, this would eventually lead to a steeper social and health gradient. Indeed, even when disadvantaged people do use the Internet, they are often less likely to engage with activities from which they would benefit most, such as for economic activities and services (Helsper, 2008). A test of a
randomly selected group of the Dutch population (van Deursen & van Dijk, 2011) in terms of their ability to use the Internet according to four operational skills from basic to strategic (using the information for personal benefits) found that educational attainment was the best predictor of being able to use the Internet strategically to gain benefits. This study suggests that it is important to know not just whether people have access to the Internet but also what use they make of it and the extent to which they benefit from it.

Much of the research has been concerned with technical access issues and has not explored social, cultural and motivational issues (Notley and Foth, 2008). Some people are even becoming “digital drop-outs” or persistent ex-users of ICTs (Raban, 2007; Selwyn et al., 2005) suggesting that exclusionary processes are at work and that along with other forms of exclusion, digital exclusion is becoming another way in which inequities are perpetuated. There have also been calls to research the relevance, appropriateness, and awareness of certain ICTs and their potential benefits, differing levels of adoption, and the role of social networks in relation to ICT access and use (Australian Communications & Media Authority (ACMA), 2007; Gilbert et al., 2008; Gilmour, 2007; Kvasny and Keil, 2006).

Digital access and use in Australia

Home Internet access is associated with more complex activities and freedom of use than community access so that it is now seen by researchers as an indicator of high quality access and important for increasing digital engagement (Helsper, 2008). Australian data for 2010-11 shows that overall 79% of Australian households have home Internet (up from 60% five years previously) and 73% of households now have a Broadband connection (Australian Bureau of Statistics (ABS), 2011). Phone technology has also changed rapidly, with fixed landline ownership falling to 81% of households and mobile phone access increasing rapidly to 87% of Australians (although only 37% of mobile users have a smartphone) (ACMA, 2011). Previously we have reviewed the evidence on the distribution of Internet access in Australia and concluded that the distribution suggests the existence of a digital gradient (as opposed to a digital divide in which there is a group of ‘haves’ and ‘have-nots’) (reference to authors’ paper removed to protect anonymity). Further Australian data also indicate that the distribution of digital technology access is not evenly spread and socio-economic characteristics of households in particular continue to influence the rate of computer, Internet and Broadband connectivity. Households still less likely to be connected are those with lower household incomes, those without children under 15 years, and those outside of major metropolitan areas (ABS, 2008a, 2011). A particular difference is recorded between households with an annual income of AU$120,000 (of whom 81% have Broadband access) compared to only 38% of households on incomes less than AU$40,000 (ABS, 2008a) – the median Australian household income at the 2006 Census being AU$21,000 to AU$31,000 (ABS, 2007). The income gradient in digital access has continued and by 2010-11 while over 90% of the top quintile had access only a little over 50% of the lowest did (Figure 1), and even among those with access the more disadvantaged groups report less frequent use (ABS, 2011). Other differences include 86% of remote Indigenous Australians being without home Internet compared to only 37% of the remote
non-Indigenous population (McCallum & Papandrea, 2009). Socioeconomic differentials in digital ICT access are also evident in state comparisons. In 2010-11 some Australian states lagged well behind the national averages, with Tasmania, for example, having only 70% of households with Internet access compared to 88% in the Australian Capital Territory (home to Australia’s capital city of Canberra, many federal government agencies, and with higher than average proportion of its population in higher socio-economic groups) (ABS, 2011). Australia also records an unequal distribution in household connection within states, again generally reflecting socioeconomic differences. In South Australia for example, 47% of households in the less-advantaged metropolitan council area of Port Adelaide/Enfield reported no Internet connection, compared with only 28% in the more-advantaged metropolitan council area of Adelaide (Glover et al., 2011). All these data linked to socioeconomic inequalities, which underpin health, suggest that digital technologies have the potential to reinforce existing health inequities.

Bourdieu and Digital ICTs: forms of capital and the digital world as a field

The existence of a range of social and economic inequities underpins health inequities. Bourdieu (Bourdieu, 1977) has explained the existence of inequities through reference to the ways in which class reproduces itself through societal mechanisms that either enhance or restrict access to social, economic, and cultural capital. Competition for these forms of capital and the interactions between them shape the distribution of power in a society. In this paper we use Bourdieu’s (Bourdieu, 1984) concepts of different capitals to examine the ways in which they affect access and use of digital ICTs and how restricted access in turn limits the potential for capital accumulation. Bourdieu also described the concept of fields as the social and institutional arenas where individuals compete for the distribution of different kinds of capital (Bourdieu, 1984). Fields reflect power hierarchies (Navarro, 2006) such that individuals experience power differently depending on the particular field. We conceptualise the digital world as one societal
field in which the struggle for resources is conducted and on which power is unevenly
distributed.

This paper uses Bourdieu’s ideas to explore the ways in which digital ICTs operate to both
reflect and exacerbate inequities in access to the social determinants of health. It considers the
factors that affect access to digital ICTs and the results of experiencing total or partial digital
exclusion. The paper concludes with a discussion of the implications of our findings for health
promotion practice.

METHODS

Focus Groups

Six focus group discussions were conducted between August and November 2008 in five outer-
suburban and one inner-city area of Adelaide; the capital city of South Australia and home to
73% of the state’s 1.6 million population (ABS, 2008b). Focus groups allow for an initial
grounded exploration of issues through interactive discussion and are particularly valuable for
researching with people from lower socio-economic backgrounds or “vulnerable” groups
because they give “voice” to the research participants and allow them to define what is relevant
and important to understand their experiences (Liamputtong, 2007; Liamputtong & Ezzy, 2005).

People were recruited to the focus groups with assistance from individuals working in local
communities and service organisations known to the researchers. The settings and providers
were located in areas identified by Glover et al. (Glover et al., 2006) and ABS (ABS, 2002) as
lower socio-economic status according to education level, income and occupation group.
Recruitment was focused in the 25 to 55 year age range – the main family formation and
working age group – since there is already some Australian focus on researching digital
technologies with disadvantaged youth (Blanchard et al., 2007) and with older culturally diverse
communities (Goodall et al., 2010). The six focus groups, with a total of 55 participants, were:

• 1 women-specific community support group (8 participants; “Women’s group”)
• 1 men-specific community support group (7 participants; “Men’s group”)
• 1 work/unemployment support group (10 participants; “Work group”)
• 1 group living in community rental housing provided at an affordable price to people on
  low incomes and/or at risk of homelessness (5 participants; “Housing group”)
• 1 Aboriginal group (15 participants; “Aboriginal group”)
• 1 African-born recent-refugee group (10 participants; “Refugee group”)
For the refugee group who were not proficient in English, the researchers’ questions and participants’ responses in English were interpreted into the group’s native language by an accredited and experienced interpreter who was known and trusted by the group, and participants’ native language responses were interpreted back into English. Focus group discussions were tape-recorded verbatim and transcriptions were analysed for content and themes (for the refugee group only the English part of the discussion was transcribed). Each participant was thanked for their participation with a lunch and an AU$30 shopping voucher. The research project was approved by the Social & Behavioural Research Ethics Committee at Flinders University.

The focus group question guide was developed from a literature review, questions from previous digital surveys (ACMA, 2007; Blanchard et al., 2007; Lee et al., 2002), and discussion with the Research Reference Group. Transcripts were analysed according to established methods to provide a descriptive account (Green et al., 2007; Ritchie and Spencer, 1993). LN and KB conducted all groups, which allowed continual data immersion; they then used a constant comparative, iterative method to analyse two transcripts, individually allocated text to a-priori and emergent codes, and compared and discussed interpretations to derive a coding framework. This framework was applied to the other transcripts and new emergent codes were discussed and added. As analysis proceeded with subsequent groups, new questions were incorporated into the schedule to further explore emerging ideas. The final framework consisted of dominant categories.

In this paper we examine the data relating to digital exclusion and the impact on the social determinants of health, including the ways that different capitals impact on access and use of digital ICTs, and the ways in which access to and use of digital ICTs shapes people’s opportunities in other areas of their life.

FINDINGS

Our findings show that people from low socio-economic groups are restricted in the ways that they can access and use digital ICTs and that this limited access and use can, in turn, affect their access to a range of social determinants of health.

Restriction on access and use

Table 1 summarises the factors that we found limited people’s digital ICT access and use. This analysis shows that lower levels of social, economic and cultural capital all work to make access and use of digital technologies more difficult. Thus, people cannot always afford to purchase the new technologies (economic capital), report that their limited educational opportunities (cultural capital) means that using the technologies can be difficult, and that they do not necessarily have the social connections (social capital) to support their use. These data show how limited income
Table 1: Social determinants of access to digital technologies

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<thead>
<tr>
<th>Existing Determinant</th>
<th>Focus Group Evidence</th>
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<td>Unable to afford access</td>
<td>The Internet is an extravagance for us... It’s like a luxury (Employment group). My daughter wants a laptop but I can’t afford one (Women’s group). I’m having to choose between a car and several things at the moment ... and I need a car, I can’t use public transport... for my back. I have a spinal injury... and I think it’ll come to that, where the computer will just have to go (Men’s group). We could only get Broadband if we had a fixed line, which was [phone company] telling us to get a fixed line basically, [which means we’d have to spend] more money (Employment group). We don’t make many calls out but we have our landline so people can call us... otherwise they can’t afford to talk for ten minutes on a mobile call (Women’s group).</td>
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<td>Limited educational opportunity</td>
<td>I have a problem with the reading and writing side of it. OK I admit that no worries, and it doesn’t mean that I don’t know what I’m doing. But I find that with the Internet if you have to go on the Internet and you can’t damn well read the words that they want you to put on, how are you supposed to access the Internet in the first place? (Employment group). I didn’t have a very good education and I can really only read basic fictional books (Housing group). Well mobile phones they’re okay, I suppose they are a necessity of today... they frustrate me a little bit... and computers – I’m illiterate for a starter (Employment group). Everything is in English – Internet, even mobile phones, everything is in English and that’s a big barrier... A big barrier remains the language because you can have the website, you search for it, and you are given a lot of information and everything’s in English (Refugee group). I haven’t asked people that live here to teach me or just show me the Internet because I feel like I’m taking up their time or they might not have the patience, and I’m not the quickest person off the mark you know (Housing group).</td>
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<tr>
<td>Employment Status</td>
<td>I have become aware of how the Internet can be of use through working with my previous employer (Men’s group)</td>
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Cost is certainly a factor – I mean, I don’t have broadband at home... I have dial up that I pay for by the hour. I’ve got broadband at work so I do most of my stuff [at work] after hours (Aboriginal group).

Well I actually got a traineeship and as part of that I got sent to TAFE one day a week to get our certificates... [and] they taught us all the computer stuff... the basics. And through my work they put me through more training (Aboriginal group).

### Housing stability

I’m really looking forward to having Internet at my house but I too have a peel [problem] with Telstra and that came about through homelessness as well, because many years ago I had the phone in my name and everyone moved out and didn’t pay me... I’m paying it off very slowly. (Housing group).

### Limited access to social networks

My daughters are always after me to get a mobile but they’re not living with me so there’s nobody to teach me (Aboriginal group).

restricts people’s access to digital ICTs, as expenditure is seen as a luxury or “extravagance”, and is one item amongst a range of facilities that people on lower incomes are forced to choose between. Similarly, the lifetime accumulation of educational opportunities (or lack thereof), and related levels of literacy and confidence in learning new skills, translates into the ability to access, use and benefit from digital ICTs. Many people gain their skills in using new technologies through their employment, such that those who are not in the workforce, as well as often having lower incomes and poorer educational history, are also lacking on-the-job ICT training that many people gain as a side benefit of their employment. Thus, a history lacking in access to a range of opportunities impacts on access and use of digital ICTs. Exclusion from digital ICTs has therefore become one of the many ways in which people who are already disadvantaged potentially suffer a further level of disadvantage.

**Overcoming barriers to digital ICT access and use**

Nevertheless, we found that access to and use of digital ICTs could be aided by people having social connections as these examples suggest:

> I got into the course I’m doing at the moment... because someone from here researched on the web for me, she printed out several web pages, so having access to the Internet helped me get into my current course (Housing group).
My friend has taught me to use the basic features... the [instruction] book’s pretty thick and to read it, I can’t comprehend it (Housing group).

When I go down to my sister’s place I use her computer, like she does all my banking online and we do everything from bill paying to basically just doing everything. [Otherwise I] have to drive to six or seven different places paying cash for it (Employment group).

I know enough people I could ring up and say “Hey on the weekend can I come over and can you turn your computer on and do something for me?” (Women’s group).

I taught my nana and aunties everything they need to know about their mobiles... it took them a few months though (Aboriginal group).

Each of these examples demonstrates that social capital can contribute to reducing digital exclusion but that people’s exclusion is intensified if they do not have networks which include people with the skills and time to pass on digital skills. Others spoke of the way in which having employment can provide opportunities to learn skills for digital ICT use. This illustrates the ways in which the possession of one form of capital (a job) can then lead to the acquisition of digital capital (which we define as the means to access and make beneficial use of digital technologies). This transference between different types of capital was frequently described by participants, demonstrating how exclusionary processes may be at work in the digital field.

**Digital capital shapes access to other social determinants of health**

We further found that once people are excluded from digital ICT access and use, then this has implications for opportunities in other social determinants of health. Table 2 provides examples of the accounts focus group participants gave of ways in which limited digital access and use impacted on their opportunities in accessing other social determinants of health. They reported that modern education requires digital ICT access, and that limited access means you are disadvantaged compared with other students. Looking for employment is also made more difficult and not having the skills to use technologies also inhibits employment opportunities. Digital exclusion is also seen as having social impacts, in that our focus group participants noted that access to digital ICTs is increasingly important in making and maintaining social contacts. Many of our participants also reported that inadequate access to digital ICTs was, in and of itself, socially excluding, and recounted the ways in which this happened to them.
Table 2: Impact of digital exclusion on access to social determinants of health

<table>
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<tr>
<th>Impact of exclusion</th>
<th>Focus Group Evidence</th>
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<tr>
<td>Essential for education</td>
<td>I’m going to have to think of some sort of internet connection regardless of how I do it because of course I’m studying next year (Housing group). The last time I went back to Uni I was working two jobs and doing full-time Uni, I didn’t have computer access at home and that made it slightly difficult (Housing group). You need a computer for schooling... and if you haven’t got it you are Disadvantaged (Employment group). You’re socially disadvantaged if you didn’t have a computer because the other students would be way ahead of you and you’d be left behind because they expect you to have one (Employment group). When I was at school I was always struggling to get a computer at the library cos everyone else wanted them too (Women’s group). I think with the computer it would... exercise my brain - it’s like any other muscle in your body that needs exercising and my brain doesn’t get all that much. (Housing group)</td>
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<tr>
<td>Access to employment</td>
<td>These days I think that you could be [missing out by not being online], cos with some things you’ll get in so much quicker by using your computer. Like if you’re lodging an application for something or sending in your resume, of course they’re gonna get them way quicker than waiting for you to rock up or hand it in or post it in. (Women’s group). I wouldn’t know a website to look at to find a job or to find anything (Men’s group). We used to read the paper and look for a job, now you’ve got to go in and punch on a damn computer and try and find your jobs in there.... It’s even going in looking to apply for a job, and most of them have to say ‘No sorry we do it all from online now and you’ve got to do it from online not come into the office’ (Employment group) . If you don’t have computer skills you might as well not apply for a job because you can’t go into the places now because they’re all online (Employment group).</td>
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<tr>
<td>Access to housing</td>
<td>I think it’s more easy and convenient more than anything because if you are looking for houses to rent it’s got websites where you can look at particular suburbs, and you can look at photos of the rooms and the backyard...[to find] what you want (Aboriginal group).</td>
</tr>
<tr>
<td>Access to social</td>
<td>I’m the oldest in the group and I still haven’t figured it [computer] out! I</td>
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| networks | find it difficult to use… but yeah I don’t do, like my family will say ’Well I sent you an email, haven’t you opened it?’ and it’s like nah! (Women’s group).

Both the [mobile] phone and the Internet have given me social opportunities I wouldn’t have had otherwise (Housing group).

Like if I didn’t have my mobile phone people wouldn’t be able to get in contact with me and then I’d miss out on a lot (Housing group). |
| Access to information | To do with the Internet and stuff like that, now it’s starting to really bug me and annoy me sometimes because all the programmes and some of the stuff I’m interested in looking at and wanting to know about, they’re always putting a damn website address, no phone number contact, and you can’t get in touch with them. You’ve gotta go on the Internet (Men’s group).

Everywhere I ring, the first question they ask is “Do you have the Internet?”. No! Because they’ll just give you a website and be very quick and wanna get you off the phone (Women’s group). |
| Lack of access can be experienced as exclusion | You’re having a conversation and… they know computers and you don’t. The next minute they’re talking about “Oh mine’s got mega something or other” and “Oh I’ve got blue tooth” and I’m thinking, what? All this technology is way over my head cos I don’t know it (Employment group)

Technology is doing the same thing, it’s trying to go too quick … it’s like a wind in the air, it’s “phewww”, it’s going that quick. And there’s a lot of people that’s getting left behind because they don’t understand it… and a lot of people are scared to get involved because it’s too quick (Men’s group).

I’ve noticed with some letters… they don’t actually put their phone numbers on there any more, they’ve only got websites… I’ve felt pressured to have to use it… because that’s all the choice they’ve given me (Women’s group).

I feel like I’ll just get left behind and I don’t want to (Housing group).

Well those who can’t afford it get left behind, don’t they? (Men’s group).

For those having programmes like Skype, they would talk to their relatives, friends being in different countries, like different continents, people they’ve seen a long time ago (Refugee group).

In a way they’re saying “Do you have a computer at home?” and if you say “No” they sort of look at you… (like) you’re not quite up to scratch (Employment group). |
DISCUSSION: A MODEL OF THE HEALTH EFFECTS OF INADEQUATE DIGITAL
ACCESS AND USE

A digital vicious cycle

Our findings have painted a picture of the ways in which people who are already disadvantaged in terms of their access to economic, social and cultural capital are further excluded from access to social determinants of health and well-being in the digital field because they have insufficient existing capitals to help them accrue digital capital, hence they are in danger of being caught in a vicious cycle of digital exclusion (see Figure 2).
Thus to take the example of education, if people have had inadequate educational opportunities in their life then this may operate as a barrier to them accessing and feeling confident using digital technologies, and also means that they are, as a consequent of this lack of access, more likely to be excluded from educational opportunities as these increasing rely on digital capital.

Importantly, Helsper and Galacz (2009) point out that if it is “just access” that is the problem then this will disappear when the current generation of elderly non-users passes away and the “tech savvy” digital generation grows up. In other words, the digital exclusion shown in Figures 1 and 2 will simply disappear over time. However, in Bourdieu’s (1977, 1986) terms, the low levels of capital which may exist, for example, among youth from disadvantaged backgrounds means that when it comes to socio-economically disadvantaged youth playing on the field of digital ICTs, as they grow up they will still experience disadvantage and lack the power and resources to benefit from this field due to the process of digital exclusion which we show in Figure 3 (and particularly as ICTs become increasingly complex, require increasingly complex or new skills and cognition for sophisticated use, and constant financial expenditure to “keep up”). In contrast to Tondeur et al. (2011) who see digital capital as just a new aspect of cultural capital, we found that social, cultural and economic capital are all transferable to and impact upon digital capital, that is, in gaining access to and using digital ICTs for their benefit. Those lacking access to these capitals are also either absolutely or relatively excluded from the technologies and benefits they bestow.

**Implications for health promotion practice and policy**

Working for health equity is an important part of good health promotion practice. Consequently, health promoters need to consider the ways in which the digital ICT vicious cycle we have described can be interrupted so that access to the digital field is more inclusive. Considering what can be done about each form of capital is a helpful starting point. In terms of changing economic capital, reducing the cost of digital hardware and broadband access for people on low incomes is one possibility. Free access to the Internet can also be provided in public facilities such as libraries, community health centres, or primary health care facilities, although our previous research showed that people find this access less satisfactory than 24 hour home access (Newman et al., 2010) and home access is now seen as the “gold standard”.

Increasing cultural capital requires investment in education (including adult education) and recognition that this is particularly important for people on low incomes, those who do not speak English, and those who suffer other adverse conditions in their life such as inadequate accommodation or unemployment. Helsper (2011) finds that in the UK gaps based on education and employment persist regardless of age or other characteristics, such that a digital underclass is emerging who will miss out as government services become “digital by default”. A community-wide program to encourage adult peer-learning about digital technologies, in community...
locations which people from low socioeconomic backgrounds are familiar with and feel comfortable with, could assist with increasing people’s competence and confidence in using digital ICTs. Some countries already have national programs to support disadvantaged individuals to do this, such as the network of 3,800 UK Online Centres (2010) and Canada’s Community Access Program; Industry Canada (2011) http://www.ic.gc.ca/eic/site/cap-pac.nsf/eng/home (last accessed 19 December 2011).

Such approaches would also work to increase people’s access to social capital and the benefits it can bring. Health promoters themselves also need to ensure that they do not assume all people have equal access to and ability to use digital ICTs when implementing online forms of communication, or in the provision of online health information or self-management. This may mean continuing with appropriate resources in non-digital forms and in languages other than English, and working with clients to ascertain the communication methods for which they do have the necessary capitals. The assumption that all groups have equal access to digital ICTs should be questioned in all settings, and strategies and policies developed to address the needs of those who miss out, or who need additional assistance in using and benefiting from digital ICTs.

Finally, from a whole of population access viewpoint, targets for achieving coverage of digital ICTs should reflect the complexities of the digital gradient. Simple population figures (for example to achieve a 20% increase in households with home Broadband access) should be changed to address equity (for example to reduce the difference in home Broadband access between the top twenty percent of households and the bottom twenty percent of households by 30%). With the constant changes in technology type and complexity, it is necessary to continue questioning differences in quality of use and the whether all people have the resources, skills and motivation to make beneficial use of any technology. Health promoters can play a key role in lobbying for such equity targets and advocating about the importance of digital inclusion to health and well-being, including in terms of government wide e-strategies and approaches.

**CONCLUSION**

Access to digital ICTs is a crucial social determinant of health in the twenty-first century and is not just a matter of technical access but is determined by people’s history of and current access to social, cultural and economic capital. Exclusion from digital capital creates a vicious cycle of disadvantage, and health promotion has a role to play in working to interrupt this cycle and to promote and advocate for processes that encourage digital inclusion, in order to contribute to the goal of greater health equity.
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