Learning to be part of the knowledge economy: digital divides and media literacy

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September 2007

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INTRODUCTION

The 'digital divide' refers to the difference between those with access to new technologies and those without. The digital divide concerns a fear that, along with new opportunities, digital technology brings with it new forms of social exclusion. As is all too predictable, digital exclusion correlates with other forms of social exclusion. However, as well as potentially ushering in new forms of social exclusion, there is the hope that digital technologies may also act as a bridge, extending information and communications to people who traditionally find them difficult to access. In this way, digital technologies are seen as creating a 'gap' while at the same time holding the potential to bridge that gap; a warning as well as a promise.

The 'digital divide' may be a useful term for mobilising political resources, attention and funding, but simplifies reality, suggesting superficial solutions to complex social problems. Instead, we need a more sophisticated framework for understanding what such a divide entails, what factors mediate which side of the divide someone falls on, the consequences of being on one side or the other of such a divide, and the opportunities for education to include rather than exclude people in a digital society.

If using information and communications technologies (ICTs) is important for full participation in society, then we need to develop approaches to education that will enable people to benefit from using ICTs. Going further, it may be that ICTs can extend educational opportunities to those for whom formal schooling has not been effective, if they are able to bridge the digital divide in the first place.

RECONCEPTUALISING DIGITAL DIVIDE(S)

The 'digital divide' is taken to mean a divide between those who have access to new technologies, and those who do not. However, we need to go beyond this dichotomous notion of technology 'haves' and 'have nots' to understand the different gradations of access to and use of technology, and how it relates to other forms of social exclusion[1].

A more sophisticated understanding of the digital divide is necessary, taking into account not just access but also use, and types of use of technology, and addressing the intersecting factors that influence the types of use that people are able to make of technology.

Selwyn (2002a) shows the need to be more precise in defining the terms of any conceptualisation of a digital divide, in particular what is meant by 'ICTs', 'access', 'use' and 'consequences' of engagement with ICTs.

If the divide distinguishes between those who have access to ICTs and those who do not, we need be specific about *which* technologies – mobile phones or games consoles, e-mail or internet services. Someone may have no access to email, but be a constant mobile phone user, and will appear to fall on different sides of the digital divide depending on which technology we see as significant.

'Access' also needs further definition, as the wide variety of contexts in which people access technology can affect how they use it. For example, browsing the internet at home and at your leisure, on an affordable connection tariff, where you are able to customise computer settings, is very different to travelling to a library to use a public computer for a half-hour session that you booked in advance. A distinction needs to be made between 'theoretical' access to

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[1] Selwyn et al 2001; Selwyn 2002a; Selwyn 2002b; Light 2001; DiMaggio and Hargittai 2001

technology, and 'perceived' or 'effective' access, where people feel able to make use of that access[2].

Even effective access does not in itself address the uses that people are able to make of technology. For example, if someone has effective access to computers at work, they may only be able to use them for a limited range of work purposes. Effective access in itself is not necessarily enough for people to be able to engage with technology in ways that are personally meaningful to them. DiMaggio and Hargittai (2001: 11) go further, arguing that "from the point of view of policy, not all uses are equal", and that using (in this case, internet) technology to develop human, social or political capital will lead to more positive life outcomes than using technology for more purely entertainment or consumer purposes.

The consequences of engagement with technology are rarely articulated in public discourse. As an example, Selwyn (2002c) shows that while the UK National Grid for Learning promotes engagement with ICTs as 'a good thing' in itself, it says little about the purposes of this engagement. For people to fully engage with ICTs, they need to perceive that the consequences of this engagement are relevant and meaningful to them, perhaps whether or not these consequences are seen as positive in DiMaggio and Hargittai's (2001) terms above.

Effective access to and meaningful use of ICTs cannot be seen as a single divide, with on the one side those who have access and on the other those who do not. Selwyn (2002a, 2002b) therefore introduces the notion of a staged model, with different gradations of access and use. This ranges from people who have 'formal access', where ICTs are theoretically available (whether or not people actually access them), through to a level at which people are meaningfully engaged with ICTs to achieve goals that are personally relevant to them.

Simple dichotomous notions of the digital divide imply simple solutions. If the sole cause of the digital divide is limited access to technology, then it will be easily solved by providing access, for example through UK Online or the Computers for Pupils initiative. Indeed, some commentators see that there is no role for government action at all in bridging the divide, because they see market forces as eventually bringing down the cost of technology until it is affordable by all (Glassman 2000, referenced in Light 2001). Schiller (1996), however, doubts whether this, left to market forces, this will ever happen, and as technology continues to develop at a rapid pace, current technology is likely to remain unaffordable by disadvantaged members of society. This argument also does not address whether being able to afford technology necessarily leads to people using that technology in ways that prove relevant and beneficial to them.

MEDIATING FACTORS IN DIGITAL INEQUALITIES

Understanding the digital divide in a more complex way means that we need a more sophisticated understanding of the causes of different types of digital inequalities that go beyond the simple fact of whether an individual can afford access to technology.

Bourdieu's (1993, 1997) concept of different types of capital is useful here. Bourdieu distinguished between economic, cultural and social capital. Possession of economic capital is the most immediate factor mediating access to technology; whether people have the financial resources to purchase technology and training, and the time to use it are largely economic considerations. However, this is not a sufficient explanation for why people may or may not meaningfully engage with technology. For example, people have different priorities, and spending money on technology, or particular privileged forms of technology, may not be a high priority for everyone. Provision of access to ICT in community centres has been one of the UK government's responses to address some people's lack of economic capital to buy their own

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[2] Selwyn 2002a

technology. Yet, not everyone who might benefit from this community provision does in fact use it meaningfully, or at all[3]. While economic capital is and remains a critical factor in people's use of ICT, and is "always at the root in the last analysis"[4], to understand these more subtle inequalities, we need to consider the cultural and social capital that people are able to draw upon as well as their economic resources.

Possessing cultural capital means being able to operate within dominant cultural structures in society, and in Bourdieu's analysis[5], possessing cultural capital is a key factor in educational success, as learners know how to operate and perform in culturally appropriate ways within the education system. Possessing cultural capital in the context of technology therefore means being able to appropriate technology for culturally valued purposes, operate within a technological culture, and develop expectations for how technology can be used, as well as the technological skills needed to operate different kinds of technology.

Social capital refers to the resources that people are able to draw upon as a result of their social connections. Through friends, family, work colleagues, etc, people have access to networks of expertise. Being able to ask others for advice and help, and receiving recommendations and suggestions can be a strong support in making use of technology. While help can be accessed through training, helplines and inbuilt applications, the more informal expertise that can be accessed through social contacts are more likely to have an understanding of the individual's needs and be able to respond in a more ad hoc way.

Social and cultural connections make a significant difference to whether and how people engage with technology. The importance of a range of social ties is further borne out by Wellman's (1999) analysis of virtual communities, in which he shows how people who can call on a diverse network of expertise have greater advantages than those who draw on more homogenous networks. A diverse network provides a wider range of information, resources and perspectives, and is therefore likely to be more useful than a homogenous network which duplicates resources.

LEARNING TO PARTICIPATE IN A NETWORK SOCIETY

So, people need to be able to draw on economic, cultural and social capital to effectively engage with technology in a personally meaningful way. However, why should people be exhorted and supported to engage with ICTs at all? In official rhetoric, using ICTs is often seen as essential for participation in an 'knowledge economy'. For example, Tony Blair in 2000 argued: "Universal internet access is vital if we are not only to avoid social divisions over the new economy but to create a knowledge economy of the future which is for everyone"[6]. If bridging the digital divide in order to participate in a knowledge economy is important, we need to look critically at what such a society based on the knowledge might entail. It is therefore useful to look at the work of Manuel Castells (1998, 2000), in which he describes the characteristics and implications of such an informational, global and networked society.

Castells (1998) sees the emergence of this networked society, and resulting changes in social structure, as built on the rise of informational capitalism, taking over from the previous system of industrial capitalism. In informational capitalism, value lies in producing knowledge and

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[3] Liff and Steward 2001

[4] Bourdieu 1993, p33

[5] Bourdieu 1993

[6] Blair 2000, referenced in Selwyn, 2002b

processing information rather than producing goods. The economy is global, distributing activities to dispersed locations. This economy is also networked, with co-operation between different parts of the global network connecting suppliers and customers, and processing information. These global information networks are the key feature of a new, networked, social structure[7]. Historically, hierarchical structures were able to outperform network structure in achieving their goals because they were able to co-ordinate functions, focus resources on specific goals and manage complexity at a larger scale. However, enabled by new technologies, network structures are now able to achieve these goals while also being adaptive and decentralised and so outperform the previous hierarchical, vertical structures.

Castells (1998) sees the informational economy as dividing between people who are valuable to the network and people who are not. Innovation and flexibility are seen as key to productiveness and competitiveness, and so "IT and the cultural capacity to use it are essential in performance of the new production function"[8]. These type of people fall into the category of 'self-programmable' labour – people who are information producers and innovators, able to adapt to new situations, to redefine the skills needed for a given task and to draw on a range of resources for learning new skills. Self-programmable labour therefore describes people who have learnt how to learn, and are able to continue learning and adapting throughout their lives. They are valuable to the network, and in turn, can extract value from it.

In contrast, generic labour describes those who can receive and execute direction, but do not possess individually valuable skills. Any individual generic labour can be replaced by any other generic labour, or that work can even be automated by a machine. Castells sees education (which he distinguishes from schooling skills that become quickly outdated) as the key factor in whether an individual is able to become part of the self-programmable or generic sectors of the labour market, and therefore the degree to which they are valuable to, and can extract value from, the network.

While generic labour does not necessarily fall outside the network, it is in a precarious position that can lead to underemployment, and by fragmenting the collective organisation of labour, the network reduces the bargaining power of generic labour. The logic of the network ignores anything and anyone that is irrelevant or opposes its goals and, in this way, pockets of structurally irrelevant sections of society can form. These "black holes of informational capitalism"[9] are areas in which social exclusion is reproduced and often include combinations of homelessness, functional illiteracy and criminality. People who find themselves in such pockets of society bypassed by the network by definition do not have at their disposal the economic, cultural and social capital necessary to engage with ICTs or to participate in the network society.

The logic of the network is so pervasive that it is not possible to pursue alternative goals from within the network – the network simply bypasses such opposing components. Those who are excluded from the network and those who choose to resist it tend to form "communes of resistance identity"[10], espousing an alternative set of values and goals without reference to wider society. However, such alternative communes, which exclude those who sought to exclude them, are unable to affect the logic of the dominant network because they are unable to communicate with it. It may seem therefore that the only available options are to either espouse the values of the dominant network, or to turn inwards, into a communalism that further fragments society. However, Castells[11] holds out hope for a third alternative:

[7] Castells 2000

[8] Castells 1998, p361

[9] Castells 1998, p162

[10] Castells 1998, p371

[11] ibid

alternative networks that set their own goals, but whose codes are communicable to the dominant network itself. Which path is taken will "make the difference between fragmented communalism and new history-making"[12].

Castells' analysis of the network society makes it clear that meaningful and effective engagement with ICTs is essential in order to participate in the network society at the more valuable level of self-programmable labour. However, positioning the main purpose of education and engagement with ICTs as leading to fulfilment of the goals of networked informational capitalism overlooks the agency of the individual in choosing whether their personal goals are the same as the goals of the network. Selwyn (2002b) shows that much official rhetoric about bridging the digital divide focuses solely on economic aspects of exclusion such as an individual's employability and productivity, without acknowledgement of the wider aspects of social exclusion such as consumption, savings, political and social activity[13].

And, going further, participating in alternative networks may be the only way to challenge the direction of the dominant informational capitalist network and effect some form of agency. For this, people will need to be able to develop and draw upon the necessary economic, cultural and social capital to effectively and meaningfully engage with ICTs and with society.

LEARNING TO BE DIGITALLY AND MEDIA LITERATE

Meaningfully and effectively engaging with ICTs can be seen as a form of literacy. Over many years, what it means to be literate has been redefined as society and culture have changed[14]. Literacy is not just a set of functional, cognitive skills to be acquired, but a set of social practices by which cultural information is encoded and communicated[15]. New literacies are emerging, facilitated by new technologies, and a new participatory, collaborative ethos[16]. Knowing how to draw on new digital literacies, as well as traditional conventional literacies productively and creatively will be a necessary condition for participating effectively in social routines[17] and teaching these literacies must therefore be a goal of education.

Lankshear and Knobel (1999) argue that, for the most part, schools do not know how to deal with new literacies that challenge the individualised, didactic and assessment-driven model of schooling within which many schools operate[18]. Where schools do bring in computers, they are often used simply to reproduce conventional forms of literacy in digital form, as in the example of a teacher who checked her students' e-mails for spelling and grammar before they were allowed to write to pen pals, rather than allowing them to take a more direct and colloquial approach[19]. For many students, their literacy practices outside of school are increasingly divergent with those they encounter within school, as they are able to access and participate in

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[12] Castells 2000, p23

[13] Burchardt, Le Grand and Piachaud 1999 p30

[14] Warschauer 1999; Lankshear and Knobel 2006

[15] Warschauer 1999

[16] Lankshear and Knobel 1999

[17] ibid, p30

[18] Lankshear and Knobel 2006, p30

[19] Warschauer 1999

many forms of new literacies through computer and mobile technology[20]. However, students who do not have the economic, cultural and social capital to achieve meaningful and effective engagement with ICTs out of school, and are also not participating in new literacies within school, may find themselves disadvantaged as a new literacies paradigm becomes increasingly important for participation in social routines. In line with Castells' arguments above, being valuable to and able to participate within the new paradigm of the network society is necessary not just in order to be economically competitive, but to be able to exercise social agency by participating in alternatives to the dominant network.

OfCom, the UK regulatory body covering broadcast and online communications and media, has published a Media Literacy Strategy[21], with the aim of promoting media literacy amongst UK citizens. Such a strategy may have the opportunity to provide learning opportunities that would go some way towards bridging digital divisions.

OfCom defines media literacy as "the ability to operate the technology to find what you are looking for, to understand that material, to have an opinion about it and where necessary to respond to it"[22]. While it does acknowledge that some media literate people may also be able to produce their own materials, this is seen as an additional skill that does not merit a place in the strategy's priorities. The emphasis throughout the document, and the strategy's priority, is in educating people to be able to make choices about the media options open to them, in order to protect themselves from inadvertently viewing harmful or offensive material. Aside from the fact that it is now the citizens' responsibility to avoid offensive material, rather than producers' responsibility not to disseminate it, OfCom's conception of media literacy positions the "citizen-consumer"[23] as potentially at risk from digital media material. The citizen is positioned as a consumer, with their participation limited to choosing between various media offerings, rather than any more active involvement. Their view of media is one in which content is delivered to consumers, who are "reliant on the content provider to provide information about the nature of the content" to enable consumers to protect themselves[24].

In the context of an understanding of literacy as discussed above, where literacy is seen as a set of social practices in which people generate, communicate and negotiate meaningful content, OfCom's media literacy strategy appears to operate within highly restricted terms that do not fulfil the promise of offering a rich media literacy education to citizens. Media literacy in these terms is not about being able to participate within a media literate society, or even being able to create media communications, but simply being able to choose between offerings. If media literacy is a key part of being able to effectively access and meaningfully engage with technology, and thereby being in a position to exercise agency in an emerging network society, then this media literacy strategy is unlikely to provide the kind of education that will allow people to be part of a self-programmable labour market or participate in alternative networks.

FINAL THOUGHTS

The digital divide remains a politically useful term. By presenting matters in a simplified and dichotomous fashion, it is easier to mobilise political resources and funding to address what remain serious issues. However, it is important to realise that the situation is more complex

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[20] Lankshear and Knobel 2006

[21] OfCom 2004

[22] OfCom 2004, p3

[23] ibid, p6

[24] ibid, p11

than a single divide between the technology 'haves' and the 'have nots', with effective access and meaningful use situated at one end of a scale, and theoretical, or no access at the other end. Where people find themselves on this scale of digital division is likely to be influenced by the interplay between a number of different factors, including the ability to access economic, cultural and social forms of capital. We also need to more fully articulate the purposes and goals for why people should be encouraged to engage with digital technologies. Participation in a networked knowledge economy may not necessarily be beneficial to all, but the ability to participate in the network at the level of self-programmable labour also grants the possibility to set the goals for alternative networks, and thereby exercise some form of agency about the society in which we live.

The danger of relying on a simple definition of the digital divide, however, is that it can imply simple solutions. Solutions such as OfCom's media literacy strategy, focusing on narrow conceptions of media skills, may enable the 'citizen-consumer' to make choices, but do not empower them to participate in a media literate society in a way that enables them to define their own agendas.

The digital divide remains a serious issue of social inequality, and conceiving of it in this more sophisticated way may make it seem an almost impossible one to solve. However, it enables us to recognise that solving the digital divide is not a matter that will be achieved by digital technologies alone, but will need to encompass social, cultural as well as economic factors, and this is the only way that greater equity may eventually be possible.

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