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Non-users of computers in south London: their experiences and aspirations for use

Mike Cushman and Ela Klecun

Department of Information Systems

London School of Economics and Political Science

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Mike Cushman and Ela Klecun
Department of Information Systems
London School of Economics and Political Science
Houghton Street
London   WC2A 2AE
Phone: +44 (0)20 7955 7426   Fax: +44 (0)20 7955 7385

m.cushman@lse.ac.uk e.klecun@lse.ac.uk

Address for contact m.cushman@lse.ac.uk

Abstract

The digital divide is an issue within developed economies as well as between developed and less-developed countries. If people are to be able to play a full part in societies mediated through electronic communication we need to understand and address barriers to access, in terms of skills and dispositions that people require to exploit ICT, and motivations for use, rather than focus on physical access.

Research undertaken as part of the Penceil Project[1] describes the attitudes of non-users of computers, their perceptions of technologies and the uses they might make of it. The research was undertaken on a deprived London housing estate amongst an ethnically and linguistically diverse community.

The research disclosed widespread anxieties about ICT and a range of aspirations for gaining a competence in its use that is far wider than the conventional employment focussed curricula. While many respondents wished to improve their employment chances through ICT competency they also wanted to use ICT for wider purposes; maintaining contact with countries of birth and disperse family networks, supporting children's education and internet shopping.

Respondents described computers as threatening and different from other cognate technologies, which they often skilfully interacted with (e.g. mobile phones, ATMs, VCRs). This indicates a need for a curriculum which improves understanding of how IT operates as well as competent usage.

Many respondents expressed a general concern that the world, based on IT, is moving past them, yet they did not perceive many specific forms of exclusion beyond limited job opportunities, but anticipated growing difficulties.

Keywords: social exclusion; digital divide; e-literacy; ICT curriculum

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Introduction

It is commonly stated that ICT is transforming every aspect of society: the way people learn, work, conduct business, spent leisure time, organise their social lives ... This belief has led to emergence of new labels for economically more developed societies, including information society, knowledge society, network society and e-society. 'E-society' emphases increasing proliferation of electronic services (e-services) and more generally electronic media in many people's working and social lives. Hence we have e-services, e-commerce, e-work, e-learning e-government, and e-governance, as well as e-citizens and e-consumers. It seems that 'e' can prefix any activity.

This proliferation of e-services has led to concerns expressed in the academic literature, policy statements and popular press regarding the emergence of a digital divide, unequal access to both technology and information (Bangemann, 1994, Joint, 2003), which is both an aspect of and a contributor to social exclusion (Hills *et al.*, 2002)

Various policy statements and initiatives indicate the importance that the UK government places on access to ICT and its take up across the economy and government. In 2000 targets were set of achieving universal access to the internet by 2005 and enabling all citizens transactions with the government to be conducted on-line by 2008 (a target that has been brought forward to 2005) (Cabinet Office, 1999). The heightened profile of ICT skills in the UK reflects wider European plans to promote access, connectivity and skills as critical to equipping the global citizen (Commission of the European Communities, 2002).

Over the years, a more sophisticated understanding of people's use and non-use of ICT has been developed, moving away from a dichotomy of *digital divide*, information 'haves' and 'have-nots' to an acknowledgement of the complex nature of the processes taking place, as reflected in the language of *digital exclusion* as an aspect of social exclusion. It is increasingly presumed that if people are to be able to play a full part in societies they must be able to mediate their interaction through electronic means. Therefore, we need to understand and address barriers to access, in terms of skills and dispositions that people require to exploit ICT, and their motivations for use, rather than just focus on physical access (Compaine, 2001, Haddon, 2000, Norris, 2001, Silverstone and Haddon, 1998).

Nevertheless, despite increasingly sophisticated accounts of digital exclusion in the academic papers and as recently reflected in the UK policy the academic understanding of who is making little or no use of ICT, and why, remains weak (Selwyn, 2003a). Furthermore, although the ability to use ICT is increasingly seen as a pre-requisite to participating (living and working) in the e-society, there is limited understanding of how non-use of ICT and e-illiteracy effect people in their daily lives and what are people's aspirations for use of these technologies.

Research reported in this paper proposes to address this gap through investigating the experiences of those excluded by technology. The research was undertaken as part of the Penceil Project, on a south London housing estate. This is because, as Chatman (1996, p205) observes "The process of understanding begins with research that *looks* at their [outsiders] social environment and that *defines* information from *their* perspective" (emphasis in original). Woolgar (2002 p 7) also stresses the need to see how people interact with technologies: "We need to focus much more on bottom-up experiences, on the nitty-gritty of actually making the damn modem work."

The paper describes the attitudes of non- and minimal users of computers, their perceptions of technologies and the uses they might make of it. The paper starts by reviewing literature and policy papers on digital divide and its link to wider notion to social exclusion (digital exclusion)[2]; what is ICT/media literacy; what cause people to be excluded/barriers; and what are their motivations for use. This is followed by the description and analysis of research findings. The last section presents some conclusions drawn from the research.

Digital Exclusion

Initially the digital divide was conceptualised as a simple dichotomy between those who have access to ICT and those who do not, highlighting disparities between continents, countries and regions. However, seeing the digital divide in terms of two opposite groups of 'haves' and 'have-nots' is too simplistic. There is a continuum between those two extremes where at one end are those with latest computers and broadband access and the competence and confidence to use them, and at the other end are those with no access to any ICT or skills. Thus, digital divide is now increasingly seen as a hierarchical rather than dichotomous concept.

Nevertheless, even such conceptualisation is too limited. A more rounded starting point to understanding digital exclusion can be gained from works on social exclusion (Cornford and Klecun-Dabrowska, 2003, Silverstone and Haddon, 1997, Silverstone and Haddon, 1998). Social exclusion is conceptualised as a matrix of interlinked processes that contribute to the exclusion of people and groups within a society or community (Compaine, 2001, Haddon, 2000, Norris, 2001, Hills et al., 2002). Such exclusion processes are not exclusively linked to poverty or deprivation, but span many mutually influencing levels, from the acts and attitudes of an individual through local contexts and communities to national and global structures. (Burchart *et al.*, 2002). Social exclusion is not static or absolute but is time and context dependent. This is true of digital exclusion. For example, we need to ask at what point and for whom lack of broadband can be constructed as excluding.

Understanding non-use

Access was seen in terms of access to suitable equipment, this has been transformed in the UK by heavy public investment in free, or very cheap, access to computers in community centres and public libraries. However, physical access in itself is not enough to promote a digitally inclusive society (Selwyn, 2003b); meaningful, or functional, access to technology such as access at home, work or college is considered by the learner, both anecdotally and empirically, to be critical to engagement. Evaluation of UK online centres for example stated that learners considered any new ICT skill to be of "limited use" unless supplemented by home access; this evaluation further discovered that inconvenience, perceived cost and low interest were the key barriers to uptake of provision for individuals, once issues of access had been resolved. (Hall Aitken Associates, 2004, Wyatt, 2003) Confidence, inaccessible content, lack of physical access and adaptive technologies are barriers to the development of e-skills, coupled with less tangible factors such as lack of knowledge, awareness, skills, and social support (Digital Inclusion Panel, 2004) A study reported by Georgiou (2004) has shown that many learners had concerns about content, were not confident in the security of using the internet for financial transactions and often felt that technology was complex and that they

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[2] This literature review draws on the work undertaken for the Penceil Project by Ewa Rawicka http://penceil.lse.ac.uk/documents/LitReview.pdf

would be unable to fix it if things went wrong. The Digital Inclusion Panel report suggests that there is a much less consistent relationship between digital inclusion and wealth than was originally thought. Additional factors such as motivation, relevance and age are now recognised as equally likely to enhance the probability of an individual to experience exclusion from technology. This assertion however is not uncontested; the 2005 Oxford Internet Survey comments, "There is a clear relationship between economic status and Internet Use". (Dutton *et al.*, 2005, p116)   The OII study also found that age and education background were also explanatory variables. These findings are also supported by Selwyn's (2004) work.

Motivation for use

According to Selwyn (2004) most adults seemed to be creating a use for technology rather than the technology filling deficits in their lives, leaving a large question mark over the notion of learner motivation. Similarly, a survey of lifelong learning centres (Wyatt, 2003) indicated that over 70% of users came to the centres to learn to use a computer. The second most common reason given was sending of e-mails to friends and family. Longitudinal studies discovered that meeting people, learning new skills, improving skills and confidence, increasing likelihood of employability/progression, re-entering learning and developing skills to help others were also motivating factors (Hall Aitken Associates, 2004), as well as accessing information and improving health (Bradbrook and Fisher, 2004). Email, shopping and learning for personal interests were also given as reasons for interest in the internet by non-users in the survey reported by Russell et al. (2002).

Despite the increasing understanding of barriers to use and motivations for use Selwyn (2003) criticises existing accounts of non-use of technology for tending to be based on a number of assumptions, such as that ICT use is inherently desirable and non-use is seen as 'abnormal', due to a deficit on the part of the non-user, including shortfall in cognition, personality, knowledge, resourcing, social situation or personal ideology. He argues that we should avoid such assumptions and study the information needs of the individual rather than the perceive information needs of society. People might have legitimate and well thought our reasons for not engaging with ICT. Engagement depends upon the individual creating their own contextual framework and motivation for adoption, which is unlikely to occur without the encouragement of a "compelling proposition". However, a process of making sense of technology is intermediated by institutions such as the school, workplace and the wider political-economic environment (Selwyn, 2003a). Woolgar (2002), founding his observation on extensive research in the UK, suggests that the uptake and use of the technologies depend crucially on local social context.

Furthermore, people might use technology at different points in time or choose to use some aspects of it. Thus, there is no a single category of 'non-user'. Wyatt et al (2002) construct a taxonomy of non-users dividing them into four types. 'Resisters' are those who do not use the internet because they do not want to, 'rejecters' are those who have stopped using the internet voluntarily for some reasons, 'excluded' cannot get access to the internet for a variety of reasons and 'expelled' are those who have stopped using the internet involuntarily either because of cost or the loss of institutional access.

This deeper understanding of access, use, motivation and relevance can be attributed to the rising profile of ICT, which provoked a shift in UK Governmental priorities from a critical skill for employment, to a recognised skill for life (DfES, 2004). The Government considers Information Technology skills as a basic skill comparable to literacy and numeracy pointing out that 90% of newly created jobs requiring computer skills as 68% of companies do business online.

Although, there is a great deal of interest in understanding the nature of digital exclusion and the importance of developing a meaningful experience, there is little mention of the necessary underpinning literacies that create this experience.

e-literacy

E-literacy is a relatively recent term, in part replacing the earlier term IT literacy, signifying perhaps a shift from technology user to communicator, and from the need to acquire IT skills (e.g. how to use email or browser software) to the need to learn to understand and use e-services based on such technology (e.g. to find a job, open a bank account).

The most recent definition of digital engagement, as defined by the UK Cabinet Office (2004), includes the ability to perform the following functions:

- "Send and receive voice messages, e-mails, photo-mails, video-mails or any other type of e-message;
- Access, consume and produce multimedia web content, ranging from informational and educational to entertainment; and
- Carry out transactions ranging from shopping to accessing government services."

This resembles, in many ways, a profile of consumption and the expectation is that, for many people, digital uptake will be market-driven, a process that is already evident in the proliferation of broadband services. Acquiring requisite skills for employment and engaging in web-based jobs seeking would also increase uptake.

Bradbrook et al (2004) provide a breakdown of literacies required to explain ICT as skill for life. They include information literacy, technology-related literacies, ICT literacy, Net/Web literacy, supportive composite literacies, e-Learning literacies and e-citizenship literacies.

Many of these competencies are also explored in notions of media literacy. For example, Livingstone (2003 p 6) uses a definition which proposes that media literacy or more generally literacy is the ability: "To access, analyse, evaluate and communicate messages in a variety of forms". To this she adds 'content creation'. This approach was adopted by Ofcom (2005) "We have defined media literacy as the ability to access, understand and create communications in a variety of contexts. At its simplest level it is the ability to use a range of media and be able to understand the information received. At a more advanced level it moves from recognising and understanding the information to critical thinking skills such as questioning, analysing, appreciating and evaluating that information."

A too narrow understanding of e-literacy leads to conceptualising users only as consumers or workers with little attention paid to their role as citizens (beyond accessing government services). It is important to understand whether the purpose of e-literacy is to give people an opportunity to engage in the society as e-citizens or simply as e-customers – compliant users to Amazon and Tesco.com; and willing participants in more efficient government service delivery channels, with the consequent gains and losses. Equally, the role of critical literacy and critical evaluation in relation to shifting notions of quality, authority and standards needs to be debated (Livingstone, 2003).

Description of the experience of technologies

The field work for the project was conducted on and around a social housing estate in Lambeth, south London. The estate is typical of many in London being characterised by high,

but not extreme, levels of social deprivation; low income and qualification levels; and an ethnically and linguistically diverse population (Cushman, 2004). Interviewees were recruited from users of a number of local agencies including: a local community centre, High Trees Community Development Trust, one of the project partners; students on basic education and basic IT courses at Lambeth College, another project partner; parents at the primary school serving the estate; members of an older people's club based on the estate; and residents of an adjacent bail hostel.

Our interviews covered both total non-users of ICTs and also people who were occasional and highly unconfident users. What was common to both groups was their limited aspirations for the use of computers and related technologies. Many respondents were born outside the UK and had identified e-mail as a way of keeping in touch with family and friends abroad, while avoiding high telephone bills. However none of them mentioned instant messaging as a way of achieving the same goal and VoIP, which had much media coverage during the later interviews was not recognised as a possibility.

> Int: What sort of things do you use it for?
>
> VR Just check my mail, and I send mail.
>
> Int: Who to? People back in Nigeria?
>
> VR My people in Africa, my people in the US, my friends in Canada.
>
> …
>
> Int: Why use Email rather than the phone? Is it cheaper?
>
> VR Yeah, Email is cheaper most of the time.
>
> [Nigerian Female]
>
> AA I use if for the internet. Well, emails. That's all I can do about it.
>
> MC Who do you email?
>
> AA Friends in the US, Canada, back in Africa.
>
> [Ghanaian Female]
>
> AH Oh, my brother says why you not get the email and the computer for? That is easy way for the computer now.
>
> [Somali Female]

Children provided a number of further reasons for wanting to know about computers. This could be, having purchased a computer for the children to use, to know what children were doing.

> AA: Sometimes they are on the computer, internet, and you don't know what they are doing.
>
> Int: You want to keep an eye on them.
>
> AA: Yes.
>
> [Ghanaian Female]

Other people had got computers so their children could use them for their homework and they wanted to be able to support them.

> CM: She [my daughter] has been quite bad at IT at school, and , um, she has struggled with it quite a bit, because she has not been able to practice , um,. So I am

hoping that now we've got this, and when we get it up and running she will be on it quite a bit … And I want to be able to help her.

[English female]

Some interviewees did express a wider list of aims

DA   There are so many things you can do with them, like shopping, research, and other things.

Int: Do any of your family in Ghana have computers?

DA   Yes, my husband's brother is a doctor, he's a Dean at a general hospital, so he has got one at home.

Int: Would you want to send him emails?

DA   Yes. And I think it is a lot cheaper

[Ghanaian Female]

Searching for information was sometimes mentioned spontaneously, but frequently provoked an interested or even enthusiastic response, when prompted, but was also an area of anxiety:

Int: Why haven't you tried to look at the web?

AA   Maybe I am a little bit scared. Not to do the wrong thing and maybe to affect her [daughter's] work or whatever it is. Just to leave it alone. Until I have more confidence.

Int: Would you like to look at Ghanaian newspapers and things like that?

AA   Oh yes. Yes. I would like to. I have a friend, just across, and the children go there and they go on Ghanaian web, and football and all that in the news. And it would be great to see what is going on.

[Ghanaian Female]

E-shopping raised further anxieties:

Int: And you think shopping? Why shop with the computer.

DA   Oh, I think it is nice to go out and about shopping. But when you have got little ones sometimes it can be difficult. So to go online shopping …

Int: Right, you have credit cards and everything.

DA   Yes, but I don't normally use them.

Int: Because you have to have credit cards if you shop online.

DA   Mm.

Int: Would you be worried about security if you shopped online, do you think?

DA   Yes, that's one thing.

Int: What would you worry about?

DA   About somebody getting to your details.

[Ghanaian Female]

Use of the internet for shopping requires both possession of a credit or debit card and a willingness to use it under unfamiliar conditions, against a background of media stories about internet fraud and theft. The resulting issues of trust are important in understanding people's

willingness or reluctance to use the internet for transactions. Dutton and Shepherd (2003) describe the internet as an *experience technology* and that it is only through use that people develop trust.

While our survey group was entirely comprised people with minimal contact with computers and the internet it was only among older people that we met people with no contact with these technologies and a total lack of interest in making any use of them. Selwyn *et al* (2003) describe the patterns of use by different segments of the older population, warning against seeing older people as a single homogenous group. They also commend a strategy of engaging older people in changing the nature of internet provision rather than trying to require older people to make themselves internet people as defined by other's experience. Our field work brought us in contact with a range of older people, from early 60s to 90s and from would-be enthusiasts to total refusniks. Most of the sample under retirement age had had some, although often very restricted, contact with these technologies and all those who had not had contact expressed a wish to make use of them.

While e-shopping was known as possibility to most respondents (surprisingly frequently identified as eBay), whether they wished to engage in it or not, e-government services were totally unknown. It had not occurred to more than one or two of the people we interviewed that using the internet to contact the local authority or central government was a possibility. Even when the possibilities were described few people responded enthusiastically – they wished to continue to use the phone or visit offices in person. This seemed to be because they mistrusted the responsiveness of these services and believed it necessary to apply verbal or emotional pressure to get a good response. It was believed that an internet message would just be ignored. The benefits of not hanging on the phone or waiting around in an office, although recognised, were not enough to compensate for the perceived loss of efficacy.

Int: How about using it to sort out problems with the council and things like that?

DB: Um, I never thought of that, actually. I just get the local Lambeth news, and they send the thing to you, so you read it and you know the only thing you have really dealings with the council is to pay them the council tax. Otherwise I [laughs] – and to come and clear your – rubbish. You call them up and you get them to come and clear that.

[African-Caribbean Female]

Int: How about getting in touch with the council about home helps or social services or something like that? Would you like to be able to do that online rather than hanging on the phone?

GR Can you do it online then? Does it cost you as much or not? I am a bit fed up with carers, don't talk to me about Lambeth.

Int: I don't know whether the carers would cost the same, but if you have got a problem you can send them a message via the web …

GR What, the carers?

Int: … yes, rather than hanging on the telephone to social services.

GR You are naïve.

Int: What?

GR You are. Carers, Well, funnily enough, we don't have them here, thank God. But the widow of the man [long descriptions of problem] And that sort of thing, no.

 …

  Int: So you use the telephone to try and sort things out.

  GR Yeah, yeah.

  Int: You would rather use the telephone then to try to sort things out. Talk to people rather than send them messages.

  GR Yeah, because they might not be there.

  [English Female]

The local council tries to promote the use of the internet for contacting the Council, the council's newsletter, referred to by interviewee DB, carries many articles about and advertisements for these channels, but they do not appear to have much impact on non-users. It is only engagement with the technology that will transform these from unknown opportunities into appreciated possibilities.

ICTs appeared to offer a challenge that other domestic electronics did not. Most respondents described frequent use of mobile phones and many had surmounted the complex interface to send text messages. Most used VCRs for playing tapes and often for immediate recording of programmes; however few were able to programme a VCR for deferred recording. Most also, occasionally or regularly use ATMs to withdraw cash.

Physical access to computers does not represent the greatest barriers to use. Many non- or minimal users have computers in their homes and there are no-charge public use computers at the local community centre and the local public library and there are many internet cafés in the area. The barriers are skills and confidence. There has also been a large investment in Basic IT skills training in the UK and courses are available at the community centre and the local further education college. The nature of the responses of our interviewees, however, calls into question the curriculum offered.

UK basic IT curricula have remained essentially unchanged since they were first developed in the 1980s. They concentrate on learning to use applications, primarily MS Office, although courses are also available for computer graphics, DTP, sound editing, etc. The office productivity courses rest on an assumption that the overwhelming aspiration of students is to learn computing to get an office job. While it is increasingly true that IT competences are essential for employment, this is not the only reason to learn – many of our interviewees were interested in gaining employment skills, but others – and not only those above retirement age – centred their aims on using personal computers for personal purposes. The conventional curricula, which are highly skills based, do not permit discussion time to explore possible uses and the ways these technologies can be enrolled in different and changing forms of domestic life. Accordingly, as the action research phase of our project we are running a *Living with Computers* course with a new syllabus[3]. This syllabus brings the activities that people wish to engage with to the start of the programme rather than relegating e-mail to the end, after the intricacies of word processing have been mastered. Learning keyboard and mouse skills are vital, but they can be learned through a yahoo or hotmail mail composing window as well as through a Word document.

Another recurring theme from the interviews was people's anxiety about the technology itself. A number expressed the fear, 'I might break it.' This is in contrast to the reaction of more

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experienced users that the technology is frustrating because it breaks down on them. People reported that they would ask a relative or a neighbour (or often the son or daughter of their contact) to help them fix a breakdown. There was little knowledge of commercial repairers or of manufacturer or supplier help lines. This indicated that social isolation was a factor enabling or preventing use of these technologies as distinct from social exclusion.

There was also an amorphous fear that something might happen to their computer from out there – an ill-digested mixture of partly understood news items about viruses, phishing and spam. It was therefore decided to include a course session on the components of a computer and how to keep it protected and running – topics excluded from most basic courses. The components session is also aimed to make people more skilled buyers and able to spend scarce money better, or to realise that second hand machines could be more than adequate for their purposes and to fight their way through adverts and salesmen and women throwing 3 gigahertz and 512 megabits and 120 Gigabytes around, without any relation to what is necessary to achieve tasks.

Another dimension is non-users poor knowledge of how to evaluate on-line sources of information, where material is without the signifiers of source and bias that are common in the off-line world. A person might know what filters they should apply to an article in the UK Daily Mail or Guardian, without similar contextual knowledge for overseas newspapers and other sources of information. This is a difficulty that presents itself in one form in the realm of politics and public affairs; in another way when evaluating health information, one of the most common areas of information sought through the web (Dutton *et al.*, 2005).

The pilot course is still in progress and we will report results from the course later. The course was over-subscribed and the early sessions have been well received by the students. It was striking that in seeking to recruit a tutor for the course, several contacts stated that, although they were not available at the right time, the course met many of the frustrations they felt with the current offerings they were required to teach.

Discussion and Conclusions

While willingness and confidence to engage with ICTs has been explored in the organizational setting and authors such as Compeau and Higgins (1995) have developed concepts like computer self-efficacy to analyze this, far less is known about non-use in the domestic environment. Research has been concentrated on the user rather than the non-user. The work reported here allows us to start to understand the needs and demands of this group and to engage in strategies to address these needs.

The fieldwork highlighted a number of issues. Because an important aspect of the research was to help people address the problems they confronted, and these remedies were conceived in educational terms, these issues have been addressed in terms of an e-literacy curriculum.

The needs and aspirations discovered mapped very poorly onto existing basic ICT curricula. Conventional curricula have a tendency to reduce a potential e-citizen to an e-office worker and because of the platforms chosen, constrict them further to an e-MS-office worker. The findings reported support the approach that e-literacy needs to be considered as a set of competencies for achieving individually directed tasks rather than a set defined from outside or above. Competencies sit within an individual's interaction with and appropriation of technologies not in abstract form. Conventional curricula suggest a flat profile where students reach an equal level of skill in all aspects of computer use. Our approach suggests that learner achievements will be a spikey profile (widely differing levels for different attributes), a concept applied to adult literacy, but rarely to e-literacy.

We identified an inability of the respondents to imagine a wide range of uses to which they might put ICTs. The way that consumer ICTs are presented in the media – as black boxes to achieve pre-described ends – makes this imagining of potential more difficult and sets a challenge for educators.

An e-literacy curriculum must also, if it is to challenge social exclusion, respond to Livingstone's demands for a media literacy curriculum to enable people "To access, analyse, evaluate and communicate messages in a variety of forms". The aspects of analyse and evaluate are frequently minimised or absent, and creation, which Livingstone sees as central is often marginalised.

It is clear that the interviewees valued the communication aspect of these technologies and wished to engage in communicative actions not data management. They were also aware that communication always entails risk, with new and unknown (and to them unknowable) risks generated when the communication is mediated by ICTs. This demands assistance in explanation, management and reduction of technology amplified risk.

The curriculum weaknesses identified in this research do no stand alone. They reflect a view of computer users as adjuncts to a controlling machine, not as active citizen's mapping their own routes through this complex and contested terrain. Our new curriculum places learner aspirations at the centre and we will report on the efficacy of our venture in later papers.

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