

Integrating the internet into women's lives

Louise Madden

School of Social Sciences, Cardiff University (MaddenL@cardiff.ac.uk)

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Abstract

This paper explores how the internet is taken up and used by women in the everyday; how it enters their lives, and how it is integrated into other projects and areas of life. Internet use is treated as an activity that needs to be viewed in context, considering the rich social world that goes on around it, to understand how the internet emerges and is made meaningful through a set of embodied everyday practices. Women have historically been somewhat excluded from the internet, and the form of this exclusion has proved difficult to understand using traditional methods. This paper reviews a set of research and literature that attempts to contextualise use of these technologies to tease out some of what is particular to women's experience of the internet.

This paper is located primarily within strand 2. (i) *'How much is change and how much is more of the same.'* It has some elements of relevance to (ii) *'The technological 'gap''*, in that it illuminates some gender differences on access to the internet, and a little relevance to (iii) *'How do young people use personal technology? What purposes does it serve?'*, in that it addresses these issues with regard to women, and there will likely be some commonalities.

Keywords: women, internet, objects, bodies, e-mail, technological gap, everyday practices, gender gap, personal technology

Introduction

This paper explores how the internet is taken up and used by women in the everyday, how it enters their lives, and how it is integrated into other projects and areas of life. This review is informed by the author's PhD research, an in-depth examination of a small number of women's internet use. It inherits some of its approach from that work; internet use is treated as an activity that needs to be viewed in context, considering the rich social world that goes on around it to understand how the internet emerges and is made meaningful through a set of everyday practices.

This paper is not an investigation of gender itself but of how women are making use of the internet, so it will not discuss gender comparison, and will include in its scope reviews of literature that are not specifically about women's usage, but are suggestive or pertinent to what women are doing with the internet. Women have historically been somewhat excluded from the internet (Wajcman, 2004), although quantitative work tends to find these gaps swiftly closing, the fine detail of women's use is more constrained (Selwyn, 2006), which requires explanation. The embodied, contextualised approach taken here is proposed in order to understand how gender differences emerge in the practices of the everyday. It is outside the scope of this paper to consider several other social categories of interest. Most notably age is a significant determiner in fluency and access to technology, as well as socio-economic grouping and class (Gorard et al 2003). Nakamura (2002) and Leung (2005) give interesting accounts of intersections of race and gender.

In order to give a flavour of some of the issues that characterise women's internet use, this paper is focused around three sets of issues. These are intended to highlight the key areas that would benefit from an examination of usage in the everyday. First, the household, looking at how computers and the internet are integrated into the home, including space and home geographies, the relation of internet and computers to other objects and activities there, its relationship to leisure and time, and how the roles women take on in the home translate into their internet use. The discussion then turns to significant others and expertise, which looks particularly at how children and partners impact on women's use, as well as wider family and friends. This is closely interlinked with expertise and knowledge; how it exists within communities and relationships, and is gained, shared and negotiated. Finally the range of activities for which women use the internet is reviewed, again with reference to how these are integrated into life more generally. Special attention is given to email, as one of the most popular and also most transformative internet applications, and to shopping, an activity that is rapidly becoming more mainstream. Again this discussion will be particularly focussed on how this technology is played out in women's everyday use. Throughout the paper, plausible and possible futures will be considered, and to conclude, a summary of the discussions and preferable futures will be outlined.

Place in the home

Objects have often been ignored in social research, including the situation of the household and what is done there (Miller, 1987). This has been particularly the case for research about the internet that often focuses on what happens on the screen, or technical developments, treating the online as a disembodied space, quite removed from everyday social forces (Terranova, 2002; Nakamura, 2002). This paper addresses this problem by acknowledging that the internet has material components, requires an engagement with objects, and has consequences for embodiment (Ahmed, 2006; Madden, in press), and therefore investigates how the internet is used in everyday life, and how online applications are integrated into the tasks women do day to day. This section is informed by these issues, and explores how the internet is being incorporated

into homes, a space that is already gendered and cross-cut with gendered issues (Ang, 1995; Birdwell-Pleasant and Lawrence-Zuniga, 1999).

Computers and the internet enter a home space that is already full of practices, relationships, values and objects which have a momentum (Birdwell-Pleasant and Lawrence-Zuniga, 1999), where much of this is maintained through women's work (Riggins, 1994) and the position these technologies come to occupy is one that must be negotiated (Lally, 2002). Becker (2006) uses the term 'domestication' to describe how new technologies are taken into everyday life, becoming normalised and losing their exotic qualities. Thus, once the internet is incorporated into the home, it is usually seen in quite mundane settings, and used to further existing project and interests.

Internet as material: objects and space

The internet most commonly enters the home through the object of the computer. An object that must be chosen and purchased, and that has sets of requirements as an object: a suitable space, with facilities for sitting comfortably and typing, sufficient privacy, possibly space for associated objects such as stationary or peripherals like printers, scanners, cameras etc. An inadequately set out computer can cause sore backs and other strains (Leung, 2005). But computers and the internet also transform the spaces and objects around them. For example Morley (2006) argues the television changed notions of domestic architecture, with the invention of the 'through lounge' to facilitate viewing. New technology alters how older technology is used, the internet competes with TV, and also transforms what computers are, so they are now largely terminals for the internet (Haddon, 2006).

Many commentators observe that the home, while seen by men and children as a space of leisure, is a space of work for women (Drucker et al 1997; Bakardjeva, 2005; Gray, 1992). So it is worth looking at how the home is laid out in terms of using the internet, and particularly how this layout is already inscribed with gender. It is not uniformly so; homes are divided into work and leisure areas (Bakardjeva, 2005; Ward, 2006), with kitchens and childcare spaces designated for work, while dens, recreation rooms and lounges are designated for pleasure and freedom. Gray (1992) breaks the home down even further; as well as marking rooms as pink or blue with her participants, they mark objects and even parts of objects such as the VCR controls, where most are shared but more complex controls are blue. The placement of the computer within this structure is significant; a computer located in a room where a woman has no regular activity, although she has formal access to it, will probably be rarely used. The computer can also change how rooms are marked, such as a space for homework for both children and the mothers who are tasked to oversee this work (Lally, 2002).

The placement in these spaces marks what kind of machine it is. Computers dominated by men are often sited in purpose-built dens or offices that afford privacy (Bakardjeva, 2005), while those in shared spaces such as dining rooms or dens automatically become shared family property that is difficult to police (Leung, 2005). A common location in a child's bedroom can prevent women from having access, as the only times of day when they are free of childcare responsibilities, using the computer would disturb the child's sleep (Lally, 2002).

New developments with laptops becoming increasingly popular, and handheld devices capable of surfing the internet will produce new ways of integrating these machines into the home. These machines no longer require a dedicated space as a desktop computer does, and can be shared among family members and tasks more fluidly. This is particularly meaningful in households that had difficulty finding a suitable space, and for women who had difficulty claiming such a space to set up a computer that could be considered theirs.

As technologies become domesticated, they are constantly evolving, and as technology matures it disperses through rooms in the home. Morley's (2006) televisions crept into less formal spaces such as bedrooms and kitchens as they became a less revered technology, and it seems internet capable ICTs are doing the same. The impact this will have on women's usage is more difficult to predict, whether this will mean a reduction of barriers such as computers shut in space marked as belonging to children or men, or losing a stake in shared access to family machines.

Ownership

Purchase of a computer can be a significant household decision associated with a period of negotiation (Lally, 2002). This purchase represents an act of consumption, a move of something from the 'formal' economy into the domestic space – where it has the potential to change home practices (Ward, 2006). Despite women's characterisation as head consumers (Walkerdine, 1997), women typically have less say in such a purchase than men, are less likely to be able to mobilise family finances for their own computer, and more likely to be using cast-offs from the office or friends and family (Leung, 2005). Sorensen (2006) notes that this is also the case with cars and mobile phones where women's devices are more likely to be a gift, often from others who are upgrading to new models. However ownership is a complex category, and accessing and using a computer must constantly be negotiated among family members once a computer is purchased (Selwyn et al, 2006; Consalvo et al, 2002; Lally, 2002).

Typical reasons for this purchase are a desire not to get left behind by technology particularly for employability (Gorard et al 2004), or for the benefit of children, who are particularly associated with computers (Facer et al, 2003). Parents often fear that they will be selling their children short if they don't provide a computer (Bakardjieva, 2005), although computers bought under this banner are rarely used for learning activities (Selwyn, 2006). Ofcom's (2008) figures support this imperative, finding that homes with children are more likely to have internet access, increasing as they age. 78% of homes with children aged 12-15 have access to the internet, compared with 64% of all households.

Costs are constantly reducing. Since Lally's 2002 study investigating family negotiations about the expenditure of buying a computer, the cost of machines has dropped, and since Gorard et al's 2003 work, when costs of telephone calls to access the internet were a limiting factor broadband has become the standard way of accessing the internet, with fixed, cheaper costs. However the proliferation of new devices capable of connecting to the internet are always aimed at early adopters, who are in the traditionally privileged groups. Although it is now possible to access the internet for a less prohibitive cost, the most desirable arrangements are always out of reach of many internet users.

Time and leisure

Using the internet is an activity that requires time, and indeed can be very time consuming. This is evident in the blocks of time necessary to gain internet skills or complete tasks (Leung, 2005), and also for aimless surfing, which is often cited as how users familiarise themselves with the technology (Consalvo and Paasonen, 2002). This time has to be found within the patterns of everyday life. Households have many rhythms for timings into which computers and the internet are integrated, such as patterns of work and leisure (Ward 2006), term-times and children's bedtimes or homework (Lally, 2002), and childcare and meal-times (Ward, 2006).

Women have particular difficulty finding this time (Leung, 2005). Although men and women's amounts of free-time are often considered to be similar, they are different in quality. Women's leisure is more fragmented, blurred with paid work in the home (Bittman and Wajcman, 1999; Wajcman, 2008), where women are often seen to be never off-duty. This means their leisure time often comes in small chunks interspersed with work activities, so that an activity like watching a whole film is not possible (Gray, 1992).

This lack of time to spend with the internet is typical of the gendering of leisure. With men's hobbies being time-consuming, representing a space between work and the perils of home life (Cockburn, 1985), and satisfying a need for an intellectually stimulating interlude (Bakardjieva, 2005), women are rarely free, particularly in the home, to have uninterrupted leisure. Indeed, the time women spend with computers is often seen as time taken away from other activities, such as childcare, housework (Miller and Slater, 2000; Selwyn, 2006), or even other leisure activities such as watching TV (Leung, 2005).

Contrast with TV and other objects

As the internet enters homes, it competes and compliments other technologies, such as the TV for entertainment and information, and the telephone for keeping in touch. Computing has been completely transformed by the internet. Ofcom (2008) finds that changes in PC ownership and internet access over time suggest that using the internet is a key motivator for buying a PC. In 2007 64% of households had the internet, 71% had a PC. Although the internet is increasing in popularity, and in 2007 56% of internet users use it everyday, with a further 19% using it several times a week, this still falls behind TV viewing.

The average person watches 3hr 36minutes of TV everyday, with this number having remained constant since 2002 (Ofcom, 2008). Leung's (2005) research found that using the internet did replace television and other activities for women. But this is not a simple story, as television and the internet can easily be used together. The television is often seen as less effortful than the internet. Watching TV is marked as a leisure activity, while computers and the internet are more associated with work (Ward, 2006). This may in part be about their physicality, as the internet require a comfortable seat and upright posture, which can lead to strains and discomfort, in contrast to watching TV (Leung, 2005).

This association with television and as an entertainment medium is one way to garner a set of predictions for future developments in internet use. Just as TVs become central to family life, and can impact the shape of this with decisions that are made about it – in some families the television is switched on all day and family members move about it, in other homes it is switched on and off when needed (Gray, 1992), families relax together with the television at the end of the day, a situation often overseen and particularly valued by women (Bakardjieva, 2005). It seems plausible that the internet will follow this pattern, becoming an entertainment centre in homes that gathers the family round it.

However, the exact form this technology will take is unclear. A number of devices (TV, films, mobile phones, computers, smaller internet-only devices such as eePCs, consoles, and music systems) are converging. Several of these machines can now take on some of the roles of others. A television represents a dedicated display system, and often also a sound system, but is no longer a unitary device, as it requires peripherals such as a VCR, DVD player, one of a range of set-top boxes for extra channels or functionality and consoles, and can have limited internet connectivity as well as a range of functions beyond showing terrestrial, broadcast television. At the same time, computers connected

to the internet can be used to show television, as well as films and music, etc but also added functionality such as making movies and sharing home made films.

Expertise and significant others

Using computers and the internet requires a complex set of skills, and the project of acquiring these skills needs to be seen in terms of people's everyday life and the social. Gaining expertise can be a substantial achievement; for those who do not have work reasons to learn, it can be very difficult to gain these skills (Bakardjieva and Nakumura, 2002). Formal taught courses are infamous for being an ineffective way to pick up computing skill (Hynes and Rommes, 2006; Selwyn, 2006; Gorard and Selwyn, 2004), and a meaningful everyday interest is required to anchor knowledge. Selwyn et al (2006), in their large scale survey, mapped routes into ICT knowledge, and found the most common were a sustained forced engagement through work or a substantial educational episode, such as a degree program, a specific hobby or interest such as family history, or through family members and communities of practice. This informal learning is deeply personal and tied into users' own particular circumstances.

Thus internet expertise often relies on a network of warm experts, others who can be relied on informally to support computer use (Bakardjieva, 2005). These are usually family members; particularly for women, they are likely to be partners, children or grandchildren (Selwyn et al, 2005). Such sets of experts are particularly used by women, who are more likely to go to partners or children for help than to value 'muddling through' and working out a solution alone, a practice more favoured by men. Women who become experts can be labelled as 'other', and while men resist women's expertise, women often also deny it (Henwood, 2000; Stepeulevage, 2001). This quickness to ask for help is shared with those who are older, in lower SEG groups and with lower qualifications (Gorard et al, 2004).

This labelling of lack of expertise can in turn affect usage. In Jenson, Castell and Bryson's (2003) intervention in schools, they found that by making girls experts in the classroom, they became more wide users of the technology. This commonly produces a situation where women are considered the least expert user in a household, so that despite having formal access to the internet, and basic skills, mothers/wives may feel little sense of ownership. This reluctance to allow women expertise is common in areas of technical knowledge (Walkerdine 1988). However, here gender intersects with class, as in working class homes where husbands do manual work and wives work in the service sector where computers are common, women can be the dominant experts (Consalvo and Paasonen, 2002). In these cases computer use can become associated with more feminine roles and work, such as childcare and helping with homework.

New internet technology is constantly simplifying and becoming more user-friendly. For example the newest version of the Windows operating system is increasingly intuitive. And we have already seen the prediction that as technology becomes further domesticated it moves from being seen as any technology at all, and as a less problematic part of the home, requiring little expertise.

However, despite a preferable future being one where women are not excluded from ICTs by their association with technical expertise, it seems doubtful that computers and the internet can ever entirely lose this edge of requiring particular expertise. The internet has become the domain of a whole range of experts, and a high status academic discipline (Computer Science), so it will always have some relationship to special knowledge bases.

Motherhood

The roles of wife and mother are played out in relation to technologies, with women's roles as mother contributing to other ways of engaging with computers (Consalvo and Paasonen, 2002), in guiding and policing children's use of computers and the internet. Bakardjieva (2005) uses the term 'internet parenting' to denote the range of parenting activities required by the internet. This can include ensuring that homework and learning with the computer is done, but also policing the amount of time that is spent online, balancing computer work and play with other activities such as playing outside, guarding against dangers of chat rooms and teenagers running up large bills (Haddon, 2006), or perform intimacy and develop relationships through shared internet activities. This can dominate the engagement women have with computers in the home (Consalvo and Paasonen, 2002), and create everyday tasks such as ensuring the computer is located in a place she can have line of sight while children are using it (Bakardjieva, 2005). Such extra responsibilities associated with computers can result in women strategically maintaining ignorance (Selwyn, 2005), as with Gray's (1992) participant who remarks that once she learned how to wire a plug, this chore became hers from then on.

The perceived importance of children having access to computers and for general computer literacy (Hynes and Rommes, 2006; Facer et al, 2003) can lead mothers to sacrifice their own use of scarce computer resources to allow them for children, and feel guilt when they do make use of technology (Selwyn et al, 2005), even when the technology is reserved for women's own use (Leung, 2005). In combination with such self-discipline, studies find partners and children complaining about women's monopolising of home computers. The only mother in Leung's study who became skilled at video games was considered a nuisance by other family members and Miller and Slater's (2000) male participants complained about the expense of their partners' use, even when the time was spent doing family chores.

What the internet is used for

In contrast to accounts from technologists and the media that emphasise exotic and cutting edge uses of the internet, social research finds that as the internet is incorporated into everyday life, it is used for quite mundane activities (Becker et al, 2006), typically to complete tasks or functions that are quite traditional and not unique to the internet (Gorard et al, 2004). Even the highest users carry out activities that are well integrated into ordinary life and everyday projects. Less active users might only use the internet for one or two activities, such as emailing or as a reference tool, and feel that it fits less easily into their usual ways of doing things, for example preferring to look things up in a book (Selwyn et al, 2005).

When Selwyn et al (2006) surveyed internet users about whether and how often they used 22 different internet activities, most reported using only six of them often. This study found an even smaller number of activities to be generally popular with computer users; these were using emails (38% listed as 'often'), looking for products and services (29% 'often'), research for work/business/study (25% 'often'). The more unusual activities such as listening to music, playing games, online banking, and social activities like messaging or chat rooms had considerably lower scores (around 3-6% of internet users doing them often).

Ofcom's (2008) figures for 2007 support these proportions; email was by far the most popular activity, with over 80% of internet users doing it. Downloading and researching was done by about 50% of users. General surfing was strongly differentiated between broadband and narrowband users, with 77% of broadband users doing it, in comparison with 59% of narrowband. Similarly with shopping where 66% of broadband users are

shopping, but a smaller 47% of narrowband users.

These suggest that despite some stable themes, the profile of internet use is shifting as broadband connections become more common. Concerns about the cost of phone calls which limited Gorard's (et al 2003) participants' range of use are falling away. This particularly affects some activities which are passing from the periphery into the mainstream. Online banking was an unusual activity in Selwyn's (et al 2006) survey, carried out in 2002; approximately 6% of internet users reported using it. But by 2007, Ofcom's (2008) research shows it is used by 36% of narrowband users and 58% of broadband consumers.

Email

Email is generally considered, by technologists (Okin, 2005), social researchers (Jackson, 2001, Bakardjieva 2005) and regulators (Ofcom, 2008), to be the most popular internet application. It has contributed to making the internet an everyday technology, and often attracts new users to the internet. A particular individual's email use typifies and characterises their engagement with the internet more than any other application (Jackson, 2001).

Email is particularly associated with women, who favour communication, and are more likely than men to use the internet to maintain relationships and keep in touch (Baym, 2008; Boneva et al, 2001). Similarly Miller and Slater (2000), in their in-depth ethnographic work, describe how emailing relatives had become 'women's work' analogous to keeping up such responsibilities by letter or telephone. This active participation in personal use of emails is in contrast to women's long reported silence in chat rooms and internet discussions, where they write less than men, and what they do write is less favourably received (for a review see Herring, 2003).

These kinds of uses lead to women reporting an emotional relationship of some kind with computers, the internet and email. Some find the computer begins to feel like a friend, and is incorporated into the identity (Lally, 2002) or stands in for the people they love and communicate with when using it (Whitty and Carr, 2006). But similar feelings can present difficulties in communicating using email. Women miss the extra communicative potential of the body, facial expressions, etc and struggle to replace these in plain text (Leung, 2005).

Email used for these socialising purposes must be seen in the context of traditional methods of communication. In Baym's (2008) study of keeping in touch across types of relationships (family, friends, acquaintance, etc), about 50% of contact was face-to-face, 25% telephone, and 20% email, with family having a little more telephone and less face-to-face. Different technologies and methods are used seamlessly together, with each used for the purpose that suits it best. Thus telephones are considered better for making arrangements (Haddon, 2006), while email is preferred to phone calls for its cheapness, or to resist long conversations. It is in the balance with other technologies that email seems set to change in the future, as mobile phones become more ubiquitous (Wajcman et al, 2008) and take up a place in the range of technologies women use to communicate, while smaller devices capable of accessing the internet in turn impact on how email fits into life.

In everyday use, email presents a problem of management, particularly in keeping work and personal email separated. These bring new difficulties, such as information coming into the public domain, emails being unreliable as people are swamped (Haddon, 2005). Haddon describes, as do my research participants, elaborate systems of email accounts reserved for work, leisure, transactions that might attract spam, or to give to dating sites (Whitty and Carr, 2006). These can also be managed through time and space, with

leisure emails reserved as an early morning or evening activity with a cup of coffee and relaxation (Ward, 2006). These technologies can also be used through others, with some emailers not touching the keyboard themselves, but passing on notes or dictation for others to prepare as emails (Bakardieva, 2005; Selwyn et al 2005).

Email has been consistently a popular technology since the internet was first conceived, with messages sent by engineers quickly morphing into an early form of email, and Bulletin Board Systems, the precursor to the internet in households supplying similar messaging systems. Newly popular social networking sites such as MySpace and Facebook also allow email-like messages, and suppliers of traditional-style email such as Gmail, Google's email service, are branching out to allow similar related services such as instant messages. Mobile phones and similar devices also allow email to be sent from anywhere. All this operates to disrupt email as a single unitary set of packages and functions. Although it seems likely that email will remain one of the most popular and attractive functions of the internet, the form it takes is constantly shifting, so that its place in everyday practices also shifts, as does its integration with other methods and technologies of communication.

Shopping/consumers

The internet is increasingly associated with consumption and production, eclipsing some of its earlier associations with information and communication (Selwyn 2005). Consalvo and Paasonen (2002) argue that as the internet matures in this way, women have been invited onto the internet by marketing moves, hailing them as consumers. These moves have contributed to current figures, where numbers of women using the internet is equivalent to men. However, women's internet usage is undermined by their designation as predominantly dumb consumers, while men are positioned as more active, technology literate (van Zoonen, 2001). This represents women as rational and instrumental, in contrast to a more exploratory technical elite of 'early adopters' consisting of men (Paasonen, 2002).

Shopping has long been known to be an attractive feature of the internet, and one of the functions that has shaped it as a household technology. Selwyn (2006) found it not only to be one of the most popular activities, but also one of the reasons people give for buying a computer and setting up the internet. It is particularly associated with electrical goods, books and auctions. Ofcom's (2008) 2007 figures show eBay, the internet auction site, to be by far the most popular website in the UK, with Amazon, the bookseller, close behind. Only large utility sites such as the BBC, google and MSN have comparable figures.

However, until recently more day-to-day purchases have not been effective. Lewis's (2004) study found grocery shopping problematic, both because the services were patchy and expensive, and many participants had inadequate access to benefit from those services. But in the past five years these sites have developed swiftly, and my own preliminary data suggests they are far more widely used by ordinary consumers, for reasons of both convenience and thrift. Internet shopping requires an in-depth treatment comparable to Miller's (1998) account of high street shopping, to interrogate not only the brand new innovations in grocery shopping, but also how all online shopping is integrated into everyday life.

Future directions

As we've seen, plausible predictions can be made that that most of the key technologies will continue to develop as they are. Laptops and other smaller devices to access the

internet will become more common. This will have implications for space in the home, with a dedicated space no longer necessary. Like the television and telephones, multiple devices will become more available for families and spread throughout the home, such as into children's bedrooms. This could widen access, in that there are less particular requirements for a suitable space, and the same device can be treated differently as it is moved into different positions in the home – a gaming or homework device for children during the day, re-imagined as an adult's machine for shopping, or communication when they are in bed at night.

Although these devices seem set to become simpler to use, so that some of the requirements for expertise will diminish, it seems unlikely it will become entirely without requirements for special expertise. Similarly with cost, the price of setting up an internet connection will continue to fall, removing some of the barriers of cost, but cutting-edge, well marketed technology will continue to maintain a gap.

The development of hand held devices is unclear. It is likely that there will be convergence in some of these machines: mobiles, TVs, computers for activities such as emailing, watching films, and listening to music. These types of devices seem set to be personal – with each member of a household owning their own. This presents the possibility that women will again be at the bottom of the pile for access to a personal device, in the tradition of the wife-mobile or wife-car, which is a cast-off from others. This might also cut women off from the expertise of partners and children with whom they are currently likely to share a machine.

A more preferable future is one where the internet is as accessible to women and girls as it is to men and boys. This is a difficult problem, as these differences are about sense of ownership both of the objects and the expertise, but also the time to gain such expertise, and the money to invest in both learning and owning the technology, all deeply ingrained problems with links to many other areas of inequality.

The biggest issue seems to be representations of computers and the internet as being men's area of expertise, with men and boys at school, at home and in the workplace quick to take ownership of technology, as well as finding it easy to establish themselves as local experts. This is not unique to computers, but also true of maths and other technical areas. And it's clear that, as in many areas of gender inequality, a liberal attitude of fair play is not enough to dent this (Henwood, 2000). What is required is a radical shift in the gendering of expertise, and to how the internet, computers and associated ICTs are represented in relation to this.

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