FAMILIES AND THE INTERNET: AN OBSERVATIONAL STUDY OF CHILDREN AND YOUNG PEOPLE'S INTERNET USE

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1.1 Introduction

Information and communication technologies (ICT) are playing an ever-greater role in the economy, the workplace, in education and in our daily leisure. Children in the world's developed countries are spending ever-greater amounts of time working on and playing with computers of various descriptions.

The number of UK households with domestic access has grown rapidly, reaching some 8.6 million households by the last quarter of 2000. Internet access in schools has also grown rapidly.[1]

However, most statistics concerning children and young people's experience with the Internet concern access rather than use. Knowing how young people are *making use* of the Internet is crucial in a number of domains, including the development of commercial strategy and public in relation to education, safety, entertainment, communication, consumption and social exclusion.

Such knowledge is elusive because the Internet is being appropriated into young people's lives as part of larger hypothesised trends towards, first, the individualisation (by contrast to the communal nature) of media use and second, privatization (meaning both the use of media in private spaces and the commercialisation of the symbolic realm more generally).[2]

As media come to occupy more and more of children's everyday lives,[3] framing their use of time and space and mediating their social relations, what are the consequences of introducing yet another, highly interactive medium?

1.2 The research project

1.2.1 Aims

The present research sets out to explore the nature and quality of children and young people's experience with the Internet. An in-depth, observational research approach was adopted, seeking to contextualise Internet use both symbolically and materially within the domestic routines and family interactions of everyday life.

The aims of the present research are:

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[1] For household information see *Family Expenditure Survey* data on Internet access, available on www.statistics.gov.uk/pdfdir/int0301.pdf. For schools information see *Statistics of Education: Survey of Information and Communications Technology in Schools, England 2000* on www.statistics.gov.uk and available from Her Majesty's Stationary Office.

[2] See Sonia Livingstone, chapter 14 in Livingstone. S. and Bovill, M (Eds.) (2001) *Children and their Changing Media Environment.*

[3] See Livingstone and Bovill (1999).

❑ To develop an understanding of the *nature of Internet use* among children, young people and their families in the different contexts in which the Internet is currently used.

❑ To identify the *barriers and gateways* to acquisition and acceptance of the Internet among young users and their parents.

1.2.2   Methods

The researchers made a series of visits to each of 30 families at home, interviewing both parents and children, observing children using the Internet in a variety of contexts and for a variety of reasons, using quasi-ethnographic techniques of interviews, diaries and, most important, naturalistic and participant observation.

The 30 target children in these families varied by socio-economic status, age, gender, ethnicity and geographic location.

In addition, the researchers visited 10 schools, both primary and secondary, chosen to vary in their strategies and success in adopting ICT. The school visits combined interviews with head-teachers and/or heads of ICT, observations of classroom use of the Internet, observations of computer clubs and other informal Internet uses, and discussions with pupils.

In seeking to flesh out the experiences of young people lying behind the facts and figures of market research surveys, this report does not offer generalisable claims but rather a rich, qualitative account of the emerging place of the Internet in family life which draws heavily on the experiences of young people themselves.

2 UK families go online

2.1 Decisions under uncertainty

Key to understanding the impact of the Internet is the *rapidity* with which the technology is both diffusing and, simultaneously, changing. The Internet has moved only very recently from being confined to the workplaces of the professional middle-classes to take its place beside the television as a family resource in the homes of the majority of schoolchildren.[4]

The rapidity of these changes is accompanied by considerable *uncertainty* regarding both the nature of the technology and the benefits of the Internet for children, its place within the family and the home and, very practically, where to put it and how to make it work as desired. Thus this report is being written at the moment when families are still working out ways of using this new technology.

In short, whether to get the Internet, where to put it, and how to make it work, are the key first steps, and even these are proving somewhat challenging for many families.

2.2 Perceived educational benefits

In most families, notwithstanding considerable interest generated by commercial and governmental promotion, and considerable doubts regarding costs and dangers, the potential benefits to children and, particularly, to their *education*, are central to parents' justification for Internet adoption.

Parents see the Internet as offering the opportunity to increase their children's life chances by giving them an educational advantage and an edge in the job market. Yet parents and many teachers are unclear about the Internet's educational role and the majority of children use it for fun.

'*Dad's work'* is the next most common reason for going online, except in working-class families, where 'keeping up' and perceptions of the Internet as bound up with 'the future' and ' progress' figure more highly. [5]

However, a widespread *ignorance* about computer hardware and software, difficulties in making the technology work properly, and a lack of clarity about the Internet's educational applications mean that access does not always guarantee use. As we shall argue in this report, both symbolic and practical factors are resulting in the under-exploitation of the Internet's potential.

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[4] In April 2001 a survey of 53,803 pupils in England Wales and Northern Ireland showed that 60% of pupils had access to the Internet at home. See http://censusatschool.ntu.ac.uk/table2-1.asp.

[5] Previous research shows striking differences in the way in which television and computers have been integrated into family life: see Dominique Pasquier, chapter 4 'Media at home' in Livingstone, S. and Bovill, M. (Eds.) (2001) *Children and Their Changing Media Environment.* At the earlier stages of diffusion, computers and the Internet are often first encountered by fathers at work and the decision to purchase a PC or go on line is commonly associated with 'dad's work'.

2.3   Location and use

Access to the Internet is still tied to the PC, and it is not at all obvious where is the 'right' place for this to be. Computers migrate around the home depending on the values of the parents, the interests of the children, and how its role within the family develops.

In the affluent and well-educated families in our sample, it was more likely to be in a quiet place such as a study, or in a separate dining room if this is not available. In lower middle-class and working class homes, the PC was more likely to be found in a room in the mainstream of family life.

Within the home the physical location of the PC will influence the *type of use* made of it. Putting it in a study reinforces perceptions of the PC as a work tool and secures privacy and freedom from distraction. Location in the hurly-burly of family life encourages more casual, social use, which may benefit younger children, who can learn from watching their siblings and parents.

Once acquired, located and made to work, young people's narrative of gaining the Internet suggests an initial honeymoon period after which Internet use may decline somewhat. Most significantly, we found little evidence to suggest that the Internet kindles new interests. Children only become engaged when they find something on the web which touches on an already established interest, or when they can use it to keep in touch with people they already know.[6]

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[6] See also the discussion of fandom in the conclusions of this report.

3   Understanding the Internet

3.1   Why understanding matters

Although people do not need a thorough understanding of a technology in order to be able to use it, the way an object is conceptualised by the user is important.

❑   Expectations influence use and may help us to understand why access does not necessarily indicate use.

❑   Being able to represent a medium to one's self and to others is the first step to becoming a competent or literate user of that medium

❑   Early expectations and uses tend to influence future developments, both technological and cultural.[7]

3.2   Images and metaphors

Asked to 'draw a picture of the Internet', younger children tend to draw their home page or a frequently visited site, underlining the importance to them of visual presentation and of the search process. Older children focus on the diversity of the Internet's functions and content, in keeping with their widening experience of use.

❑   Metaphors from familiar domains help make something unfamiliar or elusive, like the Internet, comprehensible and stable.

❑   Some reveal extravagant expectations – 'it's just like life… you can do anything really', it is 'a world of opportunities' or 'the future'.

❑   Younger children tend to describe the Internet as a 'place', a spatial anchor that is comfortably familiar, and which is appropriate to their 'walled garden' experience as users.

❑   Older children, who have begun to appreciate the use of email and chat rooms, use more complex metaphors such as 'a link' or 'a system' which explain its function or organisation in terms of networks and communication.

❑   The single most common metaphor is that of a reference book – a 'directory', 'giant book about everything', 'encyclopaedia', 'dictionary'. This is not always helpful in providing a model of how information storage and retrieval works.

3.2.1   Talk

Asked to describe the Internet, young people often focus first on two-way communication. Communication on the Internet is equated with 'talk', revealing that children regard the Internet as sharing some of the strengths of real-time,

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[7] See McKenzie and Wajcman (1999).

face-to-face communication, making things more natural, spontaneous and fun. The frequent shifts between use of 'talk' and 'write' (or even 'phone') when children discuss what they are doing online are very noticeable.

3.2.2   Doing things

Further, children strongly associate the Internet with 'doing things' - finding out about things, communicating with people and having fun. It is about being an active user, not a passive receiver of information or communication, and is heavily centred on 'having fun'. [8]

3.2.3   Visual interest

Despite the analogy with books, young people give higher priority to the visual aspect of the Internet than to its text-based content. The youngest trawl web sites looking for pictures and even teenagers prioritise the visual dimension of web site design.

3.2.4   Communicating online

Perhaps because of these perceptions of the Internet as communicative, active and visual (rather than informative, passive and print-based), computer-related skills are no longer seen as alien or 'geekish'; instead they are admired as 'cool'. Only those who are obsessive in their attachment to computers are still seen negatively.

Parents, teachers and policy makers alike, while recognising the liberating and empowering possibilities of the Internet, are also deeply concerned about how this new resource should be managed and controlled. Children, on the other hand, are not interested in the wider issues which preoccupy adults, such as the role of commercial interests or the potential for democratic participation. Nor are they fazed by adult fears about the anarchic nature of the Internet and how it may be used for criminal or exploitative purposes. They have a more egocentric and light-hearted perspective and tend to see the Internet, and its communicative possibilities in particular, as offering them new freedoms and opportunities for control and self-expression.

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[8] Similarly, despite fears about television turning viewers into 'couch potatoes', researchers increasingly recognize the active engagement of television audiences. See Livingstone (1998).

4   Communicating

4.1   *Email*

4.1.1   Popularity

Email is a major attraction for boys and girls. While parents do not encourage email for younger children, and nor have they a 'critical mass' of friends online, teenagers make considerable use of email. The number of contacts varies enormously, but the most frequent email contacts are with people known in real life, such as school friends or family members. It therefore *supplements* rather than replaces other forms of exchange. Chat room contacts more rarely turn into email correspondents. Emails can be sent to multiple addressees and act as yet another mediated bond between peer group members. Young people often have a number of email addresses, many of them based on pseudonyms, allowing them to experiment with different images of themselves and aiding in their construction of identity.

4.1.2   Content

The content of emails is often repetitive and trivial, closer to inconsequential chat, or a telephone call than to letter writing. Being in touch rather than communicating information often seems to be the driving force. Email is also useful for managing some of the potentially embarrassing features of conversation, particularly in relation to flirtation. Clearly, it is fast becoming a part of youth culture, with its own 'anti-establishment' style, spontaneous, lacking concern with spelling or grammar and enlivened by visual tricks, such as emoticons.

4.2   *Chat*

4.2.1   Flexibility and fun

Fascination with chat rooms starts around 12 years old and peaks at around 14. Most chatters try out many different rooms, though they have their favourites, typically based on meeting people of similar interests or age. Joining other chat rooms for spoofs or wind-ups is common. Young people enjoy the flexibility of chat, including both private, one-to-one conversations and, in the open chat rooms, the constant exchange of often scurrilous banter; the attraction here is part spectatorship, part the challenge of getting attention.

4.2.2   Chatting together

As with email, while there is some glamour attached to making contacts with people in other parts of the world, young people prefer someone they know to be present when visiting a chat room, and friends will arrange at school to meet in a chat room in the evening. Alternatively, pairs or groups of friends meet in someone's house and go online together, making up a fictitious composite identity for their on-screen persona. Thus chat generally extends

young people's everyday social networks, and few children use it extensively to communicate with strangers; and where they do, their family circumstances (stressful relationships with parents or siblings, isolation from peers) suggest a likely reason for wishing to 'escape'.

4.2.3   Flirting

For boys as well as girls 'flirting' is a major attraction. Younger teenagers' conversations generally stick to the basics A/S/L? (Age, sex, location?), covering little else apart from asking about brothers and sisters, hobbies and music preferences, though flirtations can be crude and fairly sexually explicit. Although much chat room talk appears repetitive and vacuous to the adult observer, young people are engaged in a highly social activity much valued by their peers. As in everyday face-to-face communication, the communicative activity itself is as important as its actual content.

4.2.4   Skills

Indeed, there are considerable skills involved in the management of chat, and it is commonplace to multitask, contributing to several private message conversations while simultaneously participating in one or more main chat rooms. Interest, and a sense of control, is retained by the demanding 'business' of sustaining multiple conversations, while and anticipating the possibility of something exciting or shocking.

4.2.5   Identity

The anonymity of chat, and the flexibility of the social rules (where experimenting and fooling around is expected) is used by teenagers to develop fantasies, play with novel identities and broach issues or contacts which are heavily regulated in everyday face-to-face communication. Rather than seeking necessarily to sustain a central or unified identity, the Internet supports young people's interest in experimenting with multiple, fluid, playful identities.[9]

4.2.6   Control

In chat rooms, young people feel themselves to be in charge, a key node in the network, and when they feel themselves to be losing control, they simply leave. This sense of control may be pitted against other chatters and against chat room moderators, with some playing the game of testing how far one can go before being thrown off. For these kinds of reasons, parents see chat rooms as a particular challenge to their control of Internet use and they often ban their children from using them if they can.

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[9] Sociologists writing about late modern society have noted how people are increasingly expected to behave in an 'individualised' way. Thus children are expected to recognise and exploit possibilities for choice and decide one way or another for a particular biographical variant. This development, sometimes described as the *biographisation* of the life course, is one element of a *destandardistion* of the life course against the background of plurality of forms and styles of life now available. See Giddens (1991).

4.3   Instant messaging

Both email and chat room contacts as well as, primarily, face-to-face contacts can spin off into Instant Messaging (IM). Being a form of one-to one communication with people one knows, this typically involves more detailed and intimate content. For those who have it, even before email IM is the first thing they want to check out. However, more routinely, IM is mainly used to provide company during one's otherwise solitary Internet use. This kind of multitasking is highly pleasurable and can revolutionise dull homework.

4.4   Internet 'talk'

4.4.1   Friends in real life

In the main, online communication, in chat rooms, email and Instant messaging, consists largely of light-hearted exchanges with real-life friends, although contact with 'virtual' friends enlivens the mix. Playing with identity, flirting and pursuing popular culture fandoms dominates content.

4.4.2   A new communicative code?

More interestingly, perhaps, all these forms of online communication appear to be generating a new communicative code or expressive form that deliberately flouts adult rules of speech and writing. Young people most commonly learn their version of Internet 'talk' from each other in chat rooms. Chat room talk has its own language and rules, making it less anarchic than it first appears. Although typed, chat room talk has greater affinity to colloquial spoken, than to written, language. It happens in real time and has the immediacy and lack of inhibition of verbal exchanges. Its style is laid-back and part of youth culture, deliberately putting little value on grammatical 'correctness'.

4.4.3   Link to youth culture

All this young people find great fun, for Internet 'talk' is carefree and mistakes don't matter. It encourages inventiveness and has the added glamour of often being rude, if not downright bawdy and therefore disreputable in adult eyes. And it is a coded language, fully appreciated only by the young and the initiated, and thus it conveys status.[10] Notably, the language young people use in chat rooms and email is very different from the language they use for more formal purposes. We may wonder, given the increasing availability of Internet access, whether this new form of written communication may eventually jeopardise a key skill of 'traditional' cultural capital. Some people may wonder if, for some less academic young people, it may come to replace more formal sorts of written communication.

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[10] For other earlier descriptions of how youth groups use 'in group' language to establish identity and acquire status see Widdicombe and Wooffitt (1995).

4.5   Virtual friends?

4.5.1   A preference for local contacts

Actual contacts may be classified according to whether or not contacts are known in real life, and whether or not they are local (i.e. knowable and traceable or distant and exotic). Many worries about online communication centre on risky contact with strangers.[11] However, distant, unknown contacts appear the least frequent by far, while the most contacts for email and chat involves networks of school friends and, occasionally, family. These are sustained through a continual 'commuting' between face-to-face and electronic communication, and encompass those topics already of interest to young people in their everyday lives.

Less common but still important to young people are contacts with people known to them in real life but who live far away (friends from a previous address, or met on holiday, distant relatives, etc.). These are sometimes reinforced by occasional face-to-face meetings, and tend to be fairly narrow in breadth of content.

Strangers who live nearby may be contacts for chat, but rarely develop into face-to-face friends. Contact with distant strangers is prized in theory by those who appreciate the Internet's potential to put them in touch with world, but this rarely leads to sustained interaction.

In short, young people (like adults) tend to reproduce the character of their social life offline in the online domain. This appears less a conservative reproduction than a *creative expression* of communicative possibilities, for they enjoy not only the potential of offline and online but also the play between the two.

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[11] Interestingly however most actual 'abuse' of children is known to be from people they already know – family members or friends. See Cawson et al (2000).

5   Playing

For young people, the Internet is primarily a source of fun. Although diverse activities are engaged in online, young people seek out the entertaining aspects of email, shopping, searching, etc, thereby contributing to the blurring of traditional boundaries between entertainment on the one hand and education, commerce, communication, learning, and so forth on the other. If the home computer is primarily associated with work by their parents and valued as an educational tool, for children, the Internet, like the games CD-Rom before it, firmly establishes the home computer as a 'fun' thing.

5.1   Games

Games are ubiquitous on the Internet, particularly on sites intended for and/or favoured by children. What are their attractions?

❑   Central is the sheer variety of online games, plus their being constantly updated.

❑   Younger boys are particularly keen, but if girls find games to their taste, they are equally enthralled.

❑   Often games attract not only or even mainly because of their quality, but because of their associations with pre-existing favourite themes or interests.

❑   Written instructions about how to play are rarely used. Most children get by very well using instinct and trial and error methods.

❑   Simple games are enjoyed by all ages. They offer the experience of winning and they are often witty and regularly updated.

❑   Complex multi-player games offer the chance to play against people from all over the world, though the choice of opponent involves a careful matching of skills.

❑   The element of competition is important and even where players play against themselves, they usually compete against their own best score.

❑   Game playing has a strong social aspect, even when playing against oneself or the computer. Friends, siblings and fathers, and even mothers occasionally join in, either competing directly, taking it in turns to play, or watching and commenting.

❑   However, the time taken to download games is a major annoyance and some young people give up rather than complete the process. Others fear downloads may take up too much space or import viruses.

5.2   Shopping

Most children are not allowed to shop online, though many enjoy looking at sites featuring toys, sports equipment, fashion articles etc. This not only allows them to fantasise about purchasing, but can allow for real research before buying, or getting a parent to buy, something for them.

❑ Window-shopping online is a favourite activity for style-conscious teenagers and mirrors their real life shopping behaviour.

❑ Amongst boys, shopping sites where you can find sports equipment, mobile phones and trainers are the most popular. They are scanned with knowledgeable attention, new lines are quickly spotted and prices compared.

❑ Akin to their style of shopping on the High Street, girls' style of online window-shopping seems to be less product-focussed – more 'shopping-for-shopping's sake'.

❑ A number of parents have window-shopped online, and some have made purchases.

❑ If children are the experts at home, parents ask them to research household purchases.

❑ Only a handful of the children we observed had actually bought anything through the Internet for themselves (using a parent's credit card), though those few were delighted with the results.

❑ It seems that fear of fraud, and/or lack of the means to pay, is the major disincentive for online purchasing, although for young people the competing pleasures of High Street shopping make it likely that e-commerce will at best supplement rather than displace existing possibilities.

5.3   Content creation

The main way in which young people create content on the Internet is through communication via email or chat rooms. However an interesting form of 'play' online includes the creation of personalised webpages, though it remains the minority who engage in such creation thus far.

❑ Web site 'creators' overwhelmingly use specialised commercial sites that provide easy, pre-formatted options. After pasting in some photographs, it is common simply to add the names of a few favourite web sites and/or pop stars.

❑ Such an interest is usually fairly short-lived, and few bother to up-date their pages. Thus far, it appears a stage young people pass through ('been there, done that, made my own webpage'), rather than a gateway to more creative uses of the Internet. More research is needed to see whether this is due to the limitations of the present design of such pages.

6   Searching

The Internet is much discussed, by contrast with the mass media which dominated the twentieth century, as a fundamentally *interactive* medium (or set of media). While communication and playing are forms of interactivity already familiar to young people, searching a vast array of globally accessible information is perhaps the most notable new form of interactive engagement on offer to, and warmly welcomed by, young people.

6.1   Searching styles

Searching the Internet can be accomplished in various ways:

- ❑   using an address (URL)

- ❑   net surfing (starting with a good page and following links that look interesting)

- ❑   using search engines

- ❑   using subject (or search) directories

Of these options, children prefer the first two, and often do not understand the distinction between the second two.

❑   When *using a URL*, they tend to rely on word of mouth recommendations for good sites, and then memorise the address for 4 or 5 sites rather than making use of bookmarks. Addresses are not always used effectively, being incorrectly remembered and/or typed into search (rather than address) boxes. Parents are often as much at sea as children in the effectiveness of their searches and search strategies.

❑   When starting from a favoured *homepage,* sometimes established for children by their parents or recommended by the school, searching can be more satisfactory.

❑   As for *search engines and search directories*, children experience a number of pitfalls, primarily concerned with the difficulties of using key words effectively, or of translating ordinary language questions into search terms. Moreover, children's reluctance to read the text on web sites means they may also not realise just where a search has taken them and what kind of information they are receiving in consequence.

6.2   Searching preferences

Favourite sites tend to be visited over and over again, the number of these being small for young children, with some broadening of range for teenagers. Boys typically prefer sports or music sites, girls are more likely to select music or fan sites. Both like sites related to favourite television programmes.

Children's preoccupations with pictures and interactivity affect their judgements about 'a good web site', for they value the *visual aspects* of web design, the opportunities available to do things and, unless specifically hunting

for text (for a school assignment, for example), they pay little attention to words.

When asked what makes for *a good web site*, in their view, it seems that most children and young people prefer:

- ❑ Entertainment sites more than educational sites
- ❑ Commercial/ fan sites more than public/ disinterested sites
- ❑ Communication more than information
- ❑ Pictures rather than printed text
- ❑ Games/interactivity rather than passive reception
- ❑ Local rather than global content and contacts

6.3 Pornography

When asked what makes for an inappropriate web site, which children are not supposed to see, both children and parents overwhelmingly identify pornographic sites. While we must note the likelihood of both underreporting and underestimating of emotional reactions in relation to porn, *most* children told us that they have indeed inadvertently encountered porn but that they are rarely upset by it.

They know how an innocent search can produce porn, they have experienced difficulties in getting rid of pornographic images, and for some, porn is mischievously enjoyed. Whether children are genuinely as unshockable and unharmed as they appeared to us in this project would require further research to determine.

7 Learning

7.1 Opportunities for learning

The Internet provides opportunities both for school-related and more informal and/or incidental learning experiences.

7.1.1 School-related learning

❑ A common trajectory is from use of the Internet as a source of illustrative pictures in primary school, to use as a source of pictures and information for projects and for exam revision in secondary school.

❑ However, while many older children with access to the Internet at home use it for homework, the sophistication and success of such use varies widely, as does the influence and attitudes of teachers and parents.

❑ Young people's attitudes to study dictate their type of use, with serious students using the Internet as a learning tool while the less motivated use it to avoid the necessity of spending too much time on homework assignments.

7.1.2 Informal learning

❑ The importance of informal learning experiences should not be underestimated. Surfing and entertainment use can teach children a great deal, and they are usually motivated to learn if interested in the subject matter. Such learning appears largely to concern navigational skills, although information of educational value can also be discovered.

❑ However, although flexible searching skills and the ability to evaluate content are indeed prerequisites for the informal use of the Internet as an educational resource, many young people use less than optimal search techniques and do not know how to evaluate the material they find. Knowing how to evaluate library resources is not such a necessary skill, as there are well-established traditions which ensure the quality of texts. This is not the case with Internet materials and children need guidance about how to assess them.

7.2 Learning styles

7.2.1 Trial and error

Young people themselves believe that they learn best if they are allowed to explore the Internet for themselves and learn through trial and error, and that friends and siblings can teach them more than parents or teachers. Indeed, peer involvement in learning, whether in front of the screen or using Instant Messaging for example, can be highly motivating though perhaps also distracting.

7.2.2   Being netwise

The association with entertainment, interactivity and communication underpin the kinds of skills that young people themselves value, influencing their ideas of what it is to be netwise. These include being able to personalise the screen, use different fonts, colours, emoticons etc to personalise one's screen presence, find good pictures, find fun web sites, use up-to-date game cheats, operate multiple windows (to monitor email/fool parents and teachers), communicate using chat room shorthand, establish a wide circle of Internet contacts, see one's own name in a public place (e.g. have own web site), and develop a 'cool' Internet identity (as in chat room ID's, IcecreamJanie'/ 'Shadowman'/ 'Whataguyiam' and funky email addresses).

As children's interests and their emerging criteria for Net Literacy illustrate, the coming of the PC and now Internet into the home, with their dual capacity to provide both entertainment and education, has to a certain extent eroded the boundary between school and leisure (and information and entertainment content). The desirable outcome is that learning becomes more pleasurable, a view with which many young people concur. They argue that use of the Internet *per se* is enjoyable, that it can provide virtual company while you work through Instant Messaging and email, and that it makes homework easier.

7.3   Problems and challenges

However, there are downsides. The Internet cannot be approached as an unproblematic educational tool.

❑   The mind-set implicit in 'fun' use may undermine educational outcomes, as children tend to select sites which look good/ provide things to do/ are fun to use, not because of the quality of their content. There is a challenge here for educational providers to make their sites visually appealing, interactively engaging and entertaining.

❑   Young users find it difficult to disengage from their own perspective and critically *evaluate* content. Sites which fit their interests tend to be assumed to be trustworthy. Indeed, young people show little curiosity about the motivations of web site producers, treating material promoting commercial interests as if it were made available for the public good, rarely considering the quality or source of the information provided. There is a challenge here for teachers to develop their pupils' ability to judge the quality of online information.[12]

❑   The Internet can also be seen as blurring the boundaries between the public and private spheres, by bringing 'the world' into the living room. Yet, in the main, young people approach the vast potential of the Internet rather

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[12] The Internet blurs the boundaries between information and advertising. As Marsha Hunt and her colleagues at Widener University remark 'The web has brought the infomercial concept to new heights' (see www2.widener.edu/Wolfgram-Memorial-Library/webeval/eval1198/tsld030.htm.) Regulatory efforts have so far clearly separated programme content from advertising on TV: however the coming of sponsorship on television introduces a new dimension. As a result, critical literacy is likely to become increasingly important for all media in the future.

conservatively, communicating with people they already know and accessing a modest range of sites connected with interests they already have. This is surprising, in view of the 'hype' surrounding the Internet and suggests that young people are by no means benefiting as they might from the opportunities the Internet provides

7.4   Multimodal learning

Young people are more innovative, perhaps, in the *manner* of their Internet use, for they typically *multi-task*, combining homework with listening to the radio or CDs or 'talking' to friends on Instant Messenger or email.

Within the *multiple modalities* of the Internet itself, they focus on the visual and auditory dimensions, tending to undervalue textual material. Even when their gaol is to access text (for use in a school project for example) they shun densely presented textual material unalleviated by pictures or graphics. They look for well-presented text in shorter, if not 'bitesize', pieces. Thus, even when processing textual information, Internet use is strongly associated with making aesthetic judgements.[13] This may pose particular challenges for those trying to promote educational use of the Internet.

If they are to establish an effective, *informal learning context* at home, parents need more guidance in developing their own skills so as to enable them, in turn, to support their children and reinforce what they learn in schools about the key skills of Internet use. Finances permitting, there is much to be said for allowing children free access in a relaxed climate where they can explore the opportunities for learning by trial and error.

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[13] This can be seen as another aspect of the 'aestheticization' of life in late modernity (see Ziehe,1994) .

8   Life in front of the screen

Through the influence of parents and through young people's pursuit of their pre-existing interests, the domestic context encourages the *reproduction* online of many of the practices that already frame everyday life within the home.

8.1   Online and offline

In various different ways, we found the online and offline worlds of young people to be closely interwoven. Most routinely, the two are *mutually supportive*, with interaction in front of the screen contributing greatly to the fun of communicating or playing on the Internet. Indeed, it may appear that these onscreen interactions are essentially a backdrop for the interaction among friends face to face, it being the banter, sharing and laughter which remains once the computer is turned off.

While friends and occasionally siblings share activities online, between parents and children Internet use is far more the occasion for regulation than for sharing a leisure activity (unlike for television).

8.2   Regulating Internet use

Regulating Internet use is generally managed in two ways:

❑   through the location of the computer

❑   through domestic rules

The relative affluence of professional/middle-class families makes it more likely that they have a dedicated study room, tending to maximise privacy and convenience at the expense of supervision. In less privileged families, the situation is typically reversed, resulting in a less private, more communal, more casually supervised use of the Internet.

Parents apply *domestic rules* and regulatory practices in several ways, some of which stimulate their children to devise counter tactics of their own:

❑   *Restrictive practices* include restricting time spent, installing filtering software, keeping the password secret, so that the parent must be called if the child wants to go online, and banning (or blocking) certain activities, most commonly email and chat.

❑   *Unobtrusive monitoring* practices include positioning the PC in a public place, spot checking from time to time what the child is doing and checking 'history' (or, rarely, the cache) for sites visited.

❑   *Benign neglect*, by which we mean that parents, while often meaning well, show a lack of monitoring or engagement with their child over their Internet use, claiming a comparative lack of expertise and so in practice paying little attention to what their children do or what sites they access.

❑   Far fewer parental strategies appear to be devoted to *optimising* or improving the quality of their child's experience of the Internet. It may be that parents lack the necessary competencies and confidence. It is also

however the case that most of the advice to parents given both in the media and online, is slanted towards defensive measures.[14]

8.3   The digital divide

Perhaps the greatest concern over the relation between off and online worlds concerns the so-called digital divide. Several conclusions regarding social differences within and between households can be tentatively drawn:

❑ Most obviously, *financial circumstances* limit the quality of Internet access parents can provide, for it seems that children and young people use the Internet more successfully they have a reliable up-to-date computer and a speedy Internet connection. Most of the families we studied were at that time paying by the minute for time online, adding an additional pressure. However financial disparities are likely to continue to be important, as long as the cost of the necessary hardware and software remains high.

❑ Variation in knowing how to make the technology work and to encourage young people's 'Internet literacy' can be attributed to inequalities in *'cultural capital'*. Variation in levels of education and knowledge mediates their children's ability to use the Internet constructively.

❑ Middle-class children are also advantaged in terms of what is often termed *'social capital'* or social support (having friends and neighbours to help and advise).

❑ Among our small sample of families from *ethnic minorities*, we found something of a disjunction between the educational and financial circumstances in a number of these homes. In these families, particularly those with well-educated parents living in deprived areas with many social problems and poor local schools, the parents appear particularly motivated to provide their children at home with all the support they can – including access to PCs and the Internet. A similar situation is apparent in some single-parent families.

❑ *Family dynamics* and family composition can also affect children's Internet use in diverse ways: we saw busy, middle-class children needing to relax mindlessly with the Internet; we saw isolated, lonely children valuing social contacts through the Internet; we saw younger siblings learning about the Internet by watching older brothers or sisters; and so forth.

❑ Contrary to popular stereotypes, we found *few gender differences* in amount and type of use, but there are some gender differences in content interests, and teachers are inclined to believe in differences in girls' and boys' style of engagement with the Internet.

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[14] Thus on the Department for Education and Employment web site (www.dfes.gov.uk) a search using the keyword 'Internet' predominantly produces sites which focus on Internet safety. On the NCA web site (www.ncaafc.org.uk/internet/index.html) being NetSnmart is defined as 'Being aware of the potential pitfalls of the Internet'. *The Parents' Guide to the Internet* on this site outlines NetSmart rules. These focus on how to protect children from the dangers of the Internet, not on how to make the most of the opportunities it opens up for them.

❑ Lastly, we note that even children of the same gender, living in the same family, and with very similar intellectual endowments can show marked differences in their enthusiasm for new technology: *individual differences* also matter.

9   Finding time for the Internet

9.1   Supplementing other media

Contrary to the perennial anxiety that new media displace older media, we find that in general, the Internet does not replace older styles of communication, but rather it adds an exciting new dimension. Yet, given the expanding media mix for children and young people, this raises new questions regarding the panoply of choices facing young people in their daily lives.

The Internet is taking its place beside their other media-related activities, and even self-confessed Internet 'addicts' find time to read, watch television and socialise.

Any measures of time use must contend with the fact that, particularly for young people, different activities are far from mutually exclusive. Hence, many young people purposively *combine* media activities, both within and across media, in a way facilitated by the design of new media technologies. While discussions of time allocation typically focus on the reduction in time for each activity as new activities become available, it is also the case that a new activity can stimulate interest in an older one.

9.2   Making choices

What frames the choices young people are making?

9.2.1   Choosing among communication media

It is noteworthy first, that young people enjoy the *play* among the multiple forms of communication increasingly available to them, and second, that email and online chat offers a particularly *flexible,* informal, 'youthful', form of communication which greatly appeals, combining as it does the advantages of both face to face talk and the telephone, and without some of the disadvantages of each.

9.2.2   Choosing among information media

Ease of use is the key criterion for young people. For this reason, it remains the case at present that the Internet is not always preferable to books or CD-Roms for educational information, given the difficulties many young people are experiencing in finding very specific pieces of information appropriate to the task set. Nonetheless, while adults tend to see printed and electronic sources of information as in *competition*, this perspective is not shared by children and young people. However, their reasons for valuing the Internet as a source of information are not always those which teachers would approve of.

9.2.3   Choosing among screen entertainment media

Although it may be that Internet use is taking time away from television or video viewing, something an observational study cannot be conclusive about, also of considerable interest is the way in which families are becoming

comfortable with a *multiplicity* of screen entertainment media in their homes. In other words, in their daily practice, the various screens available to young people are not necessarily in competition but may be watched *simultaneously*, with moments of concentration and distraction dispersed among them. Indeed, young people often positively prefer the multiplicity of media and the multitasking within media, to concentration on a single medium.[15]

9.2.4   Multiple screens

Interestingly, in both the communal space of the living room and the private space of the bedroom, multi-screen environments are increasingly in evidence. But the diversity of interests pursued simultaneously by different family members suggests multiple screens are, at least at present, preferable to the possibility of a single, multipurpose, convergent screen.

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[15] Similarly in the BTexact study of time-use diaries, television use does not appear to have declined amongst Internet-using children (see Anderson and Tracey (2001))

10   The Internet at school

10.1 Setting the scene

As set out in the 1997 consultation paper, the Government's objective is to connect all schools to the Internet by 2002. By 2000, 98% of secondary schools and 86% of primary schools were already online. However, on average, only 60 PCs in secondary schools and 6 in primary schools were linked to the Internet, making access for individual pupils still strictly limited.

Use of the Internet, both as a source of information and a way to communicate with others, is built into the *National Curriculum* guidelines.

❑   At 7-11 pupils are expected to be able to use email, and talk about how they would find information on the Internet as well as in books and through talking to people.

❑   By 11-14, children should be able to share/exchange information using email/ webpublishing and know how to evaluate a web site.

❑   At 14-16, pupils are to be taught the more complex skills of how to reflect critically on the impact of e-commerce and to use their initiative to exploit the potential of new sites on the Internet.

10.2 Primary schools

10.2.1   A cautious optimism

Most Heads and ICT coordinators report that their fellow teachers have accepted the importance of ICT and agree that using it is motivational for their pupils, particularly the less able. It is also an invaluable resource for teaching support materials.

Teachers are largely confident that primary school children are unlikely to come across unsuitable web sites in school time. Firewalling by educational servers is effective. Use is always monitored and, perhaps naively, few young children are thought to have much interest in accessing such sites.[16]

10.2.2   Access and provision

Government funding has been essential to kick-start the process, but there are real fears that support will not be adequate for the on-going costs of paying for telephone connections, service providers, up-dating machines and technical support. Teachers stress that on-going lifecycle/ service costs are just as significant as initial purchase costs.

Equipping a school to enter the digital age is not merely a matter of how much money is available to spend. Teachers need help with decisions about what to

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[16] For more on children's reaction to pornography see page 14 of this report.

buy. Software is increasingly seen as an important and problematic issue. Some are dissatisfied with the choice of available educational software.

10.2.3 Enthusiastic champion

Above all, the success of ICT initiatives depends on the support of the Head teacher and on having at least one staff member who is enthusiastic and knowledgeable and who can act as a 'champion', supporting both staff and pupils as they learn to use this new resource.

The limited time ICT coordinators in primary school have to spend on ICT and the lack of readily available additional technical support are major difficulties.

Recent surveys show a third of primary school teachers report that they do not 'feel confident' about teaching ICT.[17] Teacher training schemes, such as those provided through the New Opportunities Fund (NOF) are welcomed. Networking between local schools can be inspirational and maximize the impact of knowledgeable ICT 'champions'.

10.2.4 Variation in the classroom

Computer suites in primary schools vary considerably: some have no Internet connections, in others every PC is online. Use also varies (from up to two hours a week to only occasional use). Timetabling pressures, because of the precedence accorded Literacy and Numeracy hours, are often cited as limiting potential use.

Observation shows the Internet to be a very flexible teaching resource. It is used to support 'whole class' teaching methods, as well as more modern, independent, and peer-oriented learning styles. Thus, teachers adapt its use to fit their needs; it does not necessarily initiate innovations.

❑ Good ICT coordinators in primary school make a point of introducing their pupils to key Internet skills, such as how to look for information using key word searching as well as category-based searching. Records are kept of what has been learned and pupils encouraged to assess their own progress.

❑ Some teachers try to discuss how to evaluate sites. However, less skilled teachers may not always be able to do this as competently. Most agree that with children of this age, such subjects cannot be fully explored.

❑ Moreover, to save time, most teachers encourage children to use a small number of pre-selected sites, thus obviating the need for a critical approach to content.

❑ Web sites appeal, and are judged by, children largely on visual criteria. Their contribution to projects is often limited to the provision of pictures.

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[17] See www.dfee.gov.uk/statistics/DB/SBU/b0197/index.html

❑ Most primary school children are not yet interested in emailing, having an insufficient number of potential correspondents.

❑ Beyond the classroom, after school clubs and access during lunch times place an additional burden on teachers, as access has to be monitored. However, the opportunity to explore the Internet in a relaxed informal atmosphere is likely to have particular value for those children who have no access at home.

To conclude, the National Curriculum guidelines should perhaps attach less importance to introducing children to email at this stage, and emphasise more the importance of teaching them the basics of good searching and about the necessity of knowing how to evaluate the information they find online.[18] These are of course complex and difficult issues which will need to be explored in greater depth as children get older. However, we have seen examples of best practice where teachers found no difficulty in introducing children as young as eight or nine to such issues.

10.3 Access and use in secondary school

10.3.1   Commitment from the Head

As in primary schools, committed leadership from the Head teacher seems all important. Once again, it is clear that money to set up computer suites with Internet connections is not sufficient to guarantee good outcomes. In schools with disciplinary problems for example, the Internet can pose an additional burden on already stressed-out staff.

10.3.2   Access and provision

Although the initial Government funding is much appreciated, there are many on-going problems and frustrations. Heads may feel they are given too little say in how moneys are spent and, once again, there are concerns about on-going and future needs. Successful incorporation of ICT increases demand, and even in the best equipped schools, teachers would like more computers and faster connections. As the scale of use develops, so too does the call for costly updates.

10.3.3   The curriculum

The goal in secondary school is to integrate ICT into the curriculum. This is more problematic than in primary school because of the number of different subject areas and teachers involved. Many teachers are already experiencing enormous pressures at work and simply do not see how they can find the time for the necessary experimentation with new techniques. The need for training is generally recognised, but the need for time and space to experiment and develop this new resource is much more rarely appreciated. Having readily

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[18] Teachers are increasingly wary of giving children their own email addresses because of safety issues.

available and efficient technical support is crucial. Once again the NOF initiatives are seen as helpful.

ICT is fitted into the curriculum in a variety of ways. The Internet and email have to find their place in an ICT agenda which includes the use of many important software packages – usually Word, Publisher, Excel and Powerpoint. In the first few years ICT lessons are typically once a week and often for little over half an hour. Thereafter, integration across the curriculum is more common, with ICT a specialist subject choice. Often the brevity of lessons is a real drawback, particularly for Internet use, if connections are slow.

10.3.4 Challenges for the classroom

Teachers are feeling their way through trial and error towards constructive use of this new resource. However, much of what we did see suggested that use usually fails to live up to much of the hype surrounding the educational potential of the Internet. Often use is hampered by slow or failing Internet connections. Even in these well equipped schools we found considerable evidence of such problems. These were greeted with a surprising degree of equanimity by pupils, which suggested that they were fairly commonplace.

Moreover, most teachers are in favour of strict control of the type of educational use made of the Internet. Free searching is rarely allowed. Rather it is a question of setting up, within the school, vetted web-based learning resources and directing pupils to these. This not only saves precious time, but guarantees productive use.

In addition, pupils are encouraged to use the Internet as an adjunct to the PC as a presentational tool, which they enjoy. Thus a great deal of the 'serious' use made of the Internet in school time can seem light-weight, the emphasis being not on content but on visual presentation.

Pupils associate the Internet with 'fun' use and most of the unstructured use in schools is of this type. Teachers are understandably uneasy about this aspect of Internet use and try to make strict demarcations between use in and out of school time.

10.3.5 Encouraging signs

However, in schools where heads have been supportive, and teachers given the opportunity and time to develop web-based resources, much has already been achieved. School web sites where pupils can find reliable information and specially designed resources for testing themselves have been constructed. In the most innovative schools, international projects using Internet links and communication projects using email have been established. Research is needed to assess the educational value of such initiatives, but signs are encouraging. Such exercises are undoubtedly motivating for pupils.

It is however noticeable that in the more successful schools, attitudes are more tolerant, both towards when and where ICT is used and, in a sense, to what counts as learning.

Interestingly, teachers note the shift in emphasis from textual to iconic representation which computers and the Internet have brought. This has repercussions both for how people, including children, 'read' the computer screen and what children are taught. Where the emphasis in a paper-based written assignment is on the clarity of verbal expression, the emphasis in computer presentations is much more on the visual aspect. The challenge for teachers is to keep a proper balance between the two. Increasingly, children are being taught in school how to present information in pleasing graphic form, which is not merely a useful skill in itself, but aids the communicative process and may even help the producer to clarify his or her argument.

10.3.6   Internet skills

Although a recognised part of the National Curriculum, basic Internet skills, such as how to search or evaluate sites, can fall between the two stools of ICT and subject teaching. ICT teachers do not often see it as in their remit to deal with such matters as the evaluation of content. Subject teachers can equally well abrogate responsibility, especially if they have put a lot of work into preparing a data bank of educationally valuable web sites.

As a result, although teachers had ideas about the necessary basic skills, they had not articulated these into any general concept of what it means to be Net Literate. Many seemed to feel that Net Literacy will 'emerge' provided people are given enough hands-on experience. The apparent ease with which young people take to the computing environment can also often be taken as a sign that there is little need for formal instruction.

Given the amount of ground to be covered in a limited time, in most schools there is little emphasis on teaching keyboard skills (surprisingly, in view of the attention paid to repetitive strain injuries in the work place). Although some schools had included a few lessons on keyboard skills or intended to do so, none in our small sample had been entirely successful. Attempts typically seemed to have taken place well after bad keyboard habits had already been established.

10.4 Future uses

10.4.1   A concern for practicalities

Even the most innovative teachers caution against hype about the future use of the Internet in education, and at present even the most apparently successful are still feeling their way. There are certain proven advantages – the motivational potential of ICT for example. However, if more is to be expected, teachers must be given the time and resources necessary to explore and develop the potential of the new technologies.

Head teachers and class teachers speak from different perspectives and have different interests. Some head teachers foresee the Internet as likely to have profound effects on the way educational institutions are run in the future. They envisage computers in a central role in the classroom and teachers acting as support, rather than the other way around. Classroom teachers are often more

doubtful: they stress, for example, that evaluation of individuals' online work is at present not feasible.

Many teachers report that the Internet is increasingly becoming the primary source for project work. This can be a cause for concern when it supersedes other forms of research, such as use of the library. Children need to be able to evaluate and collate information from a variety of sources, as noted in the National Curriculum guidelines.

10.4.2   The home/school link

The Internet (and email) has great potential for bridging the school-home divide. However, the full potential of the Internet for fostering home-school links remains largely untapped. Sometimes teachers feel they cannot take home access for granted, nor make routine use of the opportunities this provides. Even schools with good ICT facilities do not always have their own web site. Those that do may make restricted use of its possibilities. If pupils contribute, it is usually to showcase examples of work for the benefit of interested adults.

In our admittedly small sample we found school web sites are comparatively rarely used to further on-going projects or to communicate regularly between home and school. Designing online lessons/ homework exercises for pupils to work on at home takes time and expertise which many subject teachers lack.

Schools in the forefront of ICT development say that email- and Internet-based links between home and school are difficult to set up. There is as yet no established social culture to support such initiatives. Thus, for example, parents with email access often fail to take up the offer of being sent weekly newsletters etc via email. The French teacher in one school has found that once the novelty value wears off, pupils have little enthusiasm for emailing homework. This may be seen as invading their space at home with school-related demands.

10.4.3   A supportive community

The Heads in both of the schools where ICT initiatives have proved most successful make the point that the process of adoption must have its roots in the community of users. Neither believes initiatives are likely to prosper if they are introduced as a top-down process, relying on government intervention. This emphasis on the bottom-up approach is mirrored at the level of the individual lesson in the preference for 'half-baked' software, which allows the teacher to put in his or her own material and change it as need dictates rather than have to make do with material not specifically tailored to the needs of particular classes.

11 Conclusions

11.1 Barriers and gateways

From the foregoing discussion, we can identify a series of requirements, each encountered in turn as part of the temporal narrative of 'going online', each of which must be met at least to some degree if young people are to have a fair chance at making an effective and empowering use of the Internet at home and school. The absence of each requirement constitutes a barrier, its presence opens a gateway.

❑ *Household finances* matter considerably at several points: in affording the initial outlay of hardware and software, in having space in the home to locate the computer conveniently and disposable time to guide children in its use, in affording un-metered access to the Internet without worrying overly much and in affording the continued maintenance and upgrading of ICT facilities at home. Household income, in short, remains a major source of inequality between households, and is not simply a matter of access but also of meeting the conditions for continued use.

❑ As long-standing conceptions of social class break down in the UK, with income and *education* having independent effects, comparative advantages, elusive as they may be to characterise, are experienced in those households where parents are more educated, more comfortable in the world of high culture and elite activities.

❑ Middle class, or more educated, or more professional parents are passing on a range of advantages to their children. They are able to go beyond the generalised 'support' for their children's education to which all strata of society are committed to provide knowledge, informed guidance, alternative reference sources, and so forth. As these parents are themselves more often expert in the use of ICT, while their children lose the advantage of being 'family experts', they may nonetheless stand to gain more by having informed and confident parents.

❑ We also note the very considerable reliance which many families place on varieties of *community support*. This may take the form of a community project to make ICT available or a local school opening its computer centre to parents on Saturdays. But, important for many families, it also includes the neighbour who pops round to deal with a computer crash or who will take the time to show you how to send an email, the friend who knows which software one should buy or whether it is worth investing in a scanner, the friendship group who swap CD-Roms to maximise software at minimum expense, not to mention useful URLs or surfing tips, and so on. Crucially, those without a supportive social or community network are often undermined in their use of the Internet at home.[19]

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[19] See Tracey et al (1999)

❑ Parents' attitudes may be a barrier if they fail to appreciate their children's perspective. Much discussion of the potential of the Internet is framed by adult conceptions of *value*, neglecting the possibility that children and young people may, also with validity, see things differently. It is thus important to recognise that while young people's use of the Internet is often not outcome-centred or product-oriented, they are not necessarily simply wasting time; the process of engaging with online content and communication can be useful and it is often fun.

❑ Both at home and at school (for at least some of the time), a relaxed and flexible *informal learning environment* can be hugely beneficial. The big unknown, however, on which neither parents and teachers on the one hand, nor research and policy on the other, are able yet to enlighten us, is whether in fact significant learning is taking place.

11.2 Engaging with Internet contents

If we shift our focus from young people's engagement with 'approved contents' to the ways in which they themselves choose to engage with the Internet when allowed free exploration and play, overwhelmingly, one particular mode of engagement with the forms and contents of the Internet is dominant, namely fandom.

11.2.1   Fandom

It is relation to fandom that we see the best of young people's Internet literacy as presently constituted. For them it appears to represent:

❑ A strategy to cope with *information overload*. Faced with the overwhelming scale of the Internet, the commonplace frustration of finding any specifically desired site, and the uncertainty over which sites to trust, fandom provides a convenient and precise set of keywords to guide access.

❑ A strategy to formulate a notion of *learning* based on immersive experience rather than distanced reflection. This expertise results not in a formal knowledge of the Internet or a sophistication in evaluating its offerings, but in a facility with navigating a web site, a competence in finding one's way around (hence the fascination with games' cheats).

❑ A strategy to claim *cultural status and expertise*. In the context of a discourse of rights, of distributed power, of questionable expertise, children are claiming a kind of cultural expertise, a knowledge of what's cool, what's going on, what's around the corner. Fandom is one way of expressing this.

❑ A strategy to cope with *cultural fragmentation* (because of the loss of the mass market and the growth of niche markets), with the result that children 'meet' over common, intertextual themes, even though ironically these are often of considerable instability and faddiness.

❑ The structuring of these objects of fandom, while bringing young people together, also represents a source of difference, a strategy to facilitate *individualisation*. This is crucial as identity becomes increasingly

constructed rather than handed down, a matter of a project of the self, rather than one of background circumstances.[20]

Although to adult observers, the Internet content used by young people often seems banal and repetitive, it is apparent that, through fandom online, a variety of psychological, social and cultural imperatives are met. This is what matters for young people.

But fandom does not exhaust the nature of young people's engagement with Internet contents. We can add the following comments here.

11.2.2 Globalisation

Fandom, strongly supported by the Internet through cross-media promotions, is a powerful influence in generating a trans-national, or pan American, global culture (Cartoon Network, Disney, MTV, etc). Although they enjoy spending time with such culture, most children and young people do not know or care about the globalisation of media products, and are often unaware of the provenance of their favourite cartoons, books or Internet sites.

11.2.3 Consumerism

Children show little interest in advertisements or promotions *per se.* They regularly appear not to notice advertising banners on their favourite web sites, though they may well be vulnerable to other forms of consumerist pressure. This lack of explicit interest in the commercial basis for much Internet content means that young people have surprisingly altruistic – and hence, naïve – perceptions of the motives of web site producers.

11.2.4 Youth culture

Far from fragmenting their lives, young people's fandom-inspired Internet use appears to embed them more firmly within a communal cultural nexus, while the very proliferation of musical styles, sporting favourites, etc provides the opportunity simultaneously to express difference and to belong to an in-group. In other words, life on the net is as much 'real life' as life off the net.

11.3 Internet literacy

How, then, should we characterise young people's competence with the Internet? What indeed are we, as a society, hoping to achieve in relation to young people's use of the Internet? We here outline four dimensions of what can be termed 'Internet literacy' in order to characterise the knowledge and skills being gained by, or expected of, young people as they become experienced with the Internet.

❑ *Analytical Competence* requires an understanding the formal qualities of the Internet - recognising how web sites are constructed (e.g. the home page, non-linear hypertext links, narrative pages versus informational

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[20] See Giddens (1991).

pages, the appeal to niche interest groups) as well as a knowledge of Internet/Web symbolic codes and the ability to search productively and interpret the effect of page design on a perceived web audience.

❑ *Contextual Knowledge* requires an awareness of the broader social, cultural, economic and historical contexts in which Internet information is produced and consumed, including the recognition that information from search engines and web sites is not necessarily neutral, but may be biased or developed from one particular cultural, commercial or political perspective.

❑ *Canonical Knowledge* requires a knowledge of 'classic' web sites and an understanding of why they may be considered to be important or useful – e.g. BBC (www.bbc.co.uk), CNN (www.cnn.com), Houses of Parliament (www.parliament.uk), Yahoo (www.yahoo.com), Lycos (www.lycos.com), Ten Downing Street (www.number-10.gov.uk). Clearly, the nature of canonical sites is constantly shifting.

❑ *Production Competence* requires the ability to produce Internet media as well as consume it, make sense of it and use it to enhance enjoyment. This includes various levels of production - from the creation of web pages, to participating in mailing lists and chat groups, and the use of email. Production competence may also include the ability to reflect and explore the user's own identity through the media.

From our observations of actual use of the Internet, it seems that there are considerable discrepancies between what children claim to know and what they can actually do in the domain of 'analytic competence'. Adults should beware of assuming that children only know what they can articulate, but also of assuming that children can do what they describe themselves as being able to do.

Further, the Internet literacy of most children and young people at present simply does not extend to cover 'contextual knowledge' (or 'critical evaluation'), their 'canonical knowledge' is narrowly delimited, and their skills include 'production competence' only in certain specific domains. Children cannot be expected to acquire these skills without adult guidance.

11.4 The way forward

To contemplate the way forward, we must shift from rich description and analysis to offer a more evaluative account of what might be done to develop these emerging norms or ideals of Internet use. Such development will be taken forward by a variety of different agents – parents, schools, designers and producers of Internet content, government, etc – all of whom might foster Internet literacy among young people for their own differing reasons.

Thus we end by asking how can these different agents contribute? Doubtless, many of the activities identified for the various agents below are indeed already being pursued. But on the basis of our observations, these seemed worth stressing further.

11.4.1 Parents

While letting them get on with it generally supports an atmosphere of exploration, there are some specific things which many parents could do further. These might include:

❑ customising the computer environment for the child (for example by setting up the computer to accept multiple users) so that the child uses his/her own password to access his/her own individual settings (including a preferred homepage, email account, bookmarked 'favourite' sites, screensaver and desktop etc.)

❑ ensuring that appropriate filtering software has been installed and that children know the rules of Internet safety

❑ guiding them in the use of the Favourites or Bookmarking options

❑ demonstrating how to download sites so as to be able to access them at greater convenience offline

❑ learning and reinforcing a basic technical language for discussing computers and the Internet in order to be able to benefit from Help facilities and to explain such difficulties as they are experiencing

❑ occasionally joining in, sharing or talking to their children about their Internet use (rather than assuming that as a parent one has little to contribute)

❑ encouraging enjoyable, relaxed, independent use of the Internet

❑ avoiding passing on parental myths or misconceptions regarding the Internet (e.g. concerning the supposed workings of the computer or the dangers of downloading, viruses and, even, stranger danger)

❑ providing a context for informal learning through watching more skilled family members

❑ as informal learning becomes more significant, ensuring children have alternative sources of information (e.g. an encyclopaedia) rather than assume the Internet suffices.

11.4.2 Schools

The brief for teachers is already laid out in the DfES's National Curriculum Guidelines for Information Technology. Nonetheless, we propose some additions as follows:

❑ give greater prominence to the evaluation of web site material and decide in the context of which lessons such issues are most fittingly addressed

❑ given that information available on the Web is fallible, lay more stress on teaching pupils to check information across multiple sources and different media

❑ develop more explicit policy on the home-school link and inform parents of the school's expectations. After all, parents invest in PCs and Internet

connections because they believe in their educational potential and they have a right to be informed and involved. The issue of unequal access at home needs to be addressed, especially as the government is committed to a policy of lifelong learning. More attention needs to be directed to policies which will encourage the growth of home-ownership of PCs, upgrading/maintenance and links with educational institutions.

❑ provide guidance for pupils when they go home (leaving the 'safe' environment of the school) in relation to safety and pornography

❑ develop community initiatives further (opening school ICT facilities to parents is well-intentioned but not yet fully effective, and could perhaps include some technical support and training for parents)

❑ don't underestimate or despise the teaching at secondary school level of such apparently mundane technical skills as searching

❑ teach children keyboard skills or, at a minimum, point children and parents in the direction of computer-based typing programmes and reinforce such activity (although some of the older children we met could type reasonably fast, none had adequate keyboard skills)

❑ address the health and safety issues related to computer use (many children sit badly, type awkwardly, know little of RSI, etc)

❑ address the fact that, whatever one may plan for, children are arriving at secondary school without all the ICT skills expected at Key Stage 2

❑ where practicable, encourage the non-judgmental, flexible and entertaining use of Internet and email in lunch hours, after school, etc.

11.4.3 Content producers

In the realm of design and content production, no doubt ideas of design are already developing way beyond the applications currently available on the mass market.

Moreover, many of the difficulties young people and their families are experiencing are familiar design problems (key words searching, help systems, etc). Steven Hepple's team at Ultralab outlines the following pointers for good educational web design:

❑ Designers of educational web sites should produce flexible, authorable programmes which allow teachers and pupils alike to adapt web resources to their own needs.

❑ Software should be participative (i.e. allow the user to feel some ownership for the learning process through authoring or commenting) not merely interactive (i.e. giving the user a choice of navigation and pace).

❑ Multi-media teaching materials should offer alternative routes to the learning experience, not prioritise one medium (such as the visual) over another (such as text).

Beyond confirming the value of such proposals, we would add that:

❑ It is a common complaint that it is very difficult to find simple instructions for beginners and the design of web pages is often misleading and unhelpful.

❑ Help facilities on many computer applications, even those especially designed for children (such as some Research Machines material for schools) and Internet messages are unnecessarily technical, wordy or obscure.

❑ Our conversations with teachers certainly show that they would appreciate more flexible programmes which allow them to adapt material for the needs of particular classes.

❑ The educational benefits of much software remains unproven, and families would benefit from both more realistic claims and more specific claims insofar as benefits can be identified.

❑ Our findings confirm that educational applications must above all be fun to use, provide occasions for interactivity and be visually appealing.

11.4.4   Service providers

Parents want a safe and reliable Internet environment at a reasonable monthly cost which is known in advance; teachers want continuous online access at a price they can afford.

A service is at an advantage with parents if it provides a clear, 'fool's guide' to customising the computer environment for the child and setting up his/her own password to access his/her own individual settings. Also useful would be a simply written, graphically illustrated Help facility where users can look up, and perhaps be encouraged to print off information on how to navigate the homepage, how to bookmark favourite sites, how to set up different levels/types of firewalling procedures, and a guide to the most common reasons for connection failures.

In addition:

❑ There is a need for a *specifically British*, colourful site with a safe, directory-based, search facility which can be used as a homepage for younger children.

❑ On their homepage younger children want easy access to games and the web sites of their favourite TV programmes, pop stars and sports, and an archive of picture-based web sites.

❑ Parents and teenagers would also appreciate news updates on, and hyper-links to, established educational and informative sites (such as the BBC, national newspapers, exam revision sites etc).

❑ For *teenagers* the communicative possibilities of the Internet assume major importance and an Instant messaging facility, preferably accessible to those registered with other Service Providers, is a major attraction, as is a service which provides imaginative possibilities for communication

(personalised "notepapers", range of funky fonts*,* easily accessible "smileys" etc).

❑ There is great potential for an expansion of *home-school* link-ups through school web pages.[21] (At present many teachers neither have the time nor the expertise to construct these. Knowledgeable teachers want systems which give them the flexibility to use their own expertise and creativity. The less knowledgeable need help to create pages.)

❑ School email addresses have limited interest for kids, although they may provoke interest and encourage them to acquire more flexible access when they have built up a circle of possible correspondents.

❑ There is some dissatisfaction with current Government-recommended providers of hardware and software amongst the more knowledgeable teachers. (While acknowledging the valuable contribution of some specialised educational programmes, they find cut-down versions of market-place word-processing and data-handling programmes unnecessary and counterproductive. Even primary age children cope with the originals well and the need is for systems which are fully consistent with Windows practice.)

11.4.5 Legal and Regulatory frameworks

Given the difficulties of regulating the Internet nationally, or globally, and given the complex issues of censorship, some organisations advocate policies of *parental responsibility* rather than sole reliance on a legal framework.[22] Our research suggests that, in view of the levels of uncertainty and ignorance that parents claim for themselves, this is an unsatisfactory trend.

Overwhelmingly, the debate over the regulation of young people's use of the Internet is oriented towards the avoidance of harm. Our key conclusion, however, after observing young people's Internet use, is that far more effort is required in relation to *positive regulation*, ensuring that the potential of the Internet is realised for all young people, though particular efforts are required for those currently on 'the wrong side' of the digital divide.

11.5 Conclusion

In this report we have observed and interviewed in depth a variety of children and their parents, in order to understand their experience of the Internet at this relatively early stage in its diffusion throughout UK households and schools.

In looking to the future, we end by noting that current nature of Internet use in the home leads us to identify three areas in which further developments are needed.

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[21]See research by Tracey et al (1999) conducted for BT's HomeLearn project which investigates the home as a future social learning environment. See www.bt.com/bttj/vol17no1/10.pdf.

[22] See Childnet International (www.childnet-int.org); Internet Watch Foundation (www.iwf.org.uk); Center for Media Education (cme.org/children/); NCH Action for Children (www.nchafc.org.uk/internet/).

11.5.1   Action to promote universal access

In Europe, most countries are dealing with SES inequalities in ICT access through education policies, thus raising the challenge of the relation between provision at home and at school.[23] Undoubtedly, British schools have led the way in compensating for inequalities in domestic access to computers and the Internet.[24] However, the frequency of computer use in school remains relatively low at around once or twice a week. It seems unlikely, therefore, that access to the Internet in school will ever compensate those who are without access at home for the unstructured leisure time use which allows for learning through exploration. Moreover, as access to the Internet spreads throughout all sectors of society, it must not be assumed that having a PC/modem at home eliminates the 'digital divide'. Rather, inequalities in access will continue, for maintaining and upgrading Internet access to keep up with developments and ensure adequate quality of use is resource-intensive, in terms of money, space, time and know-how. The more Internet access and use at home comes to be taken for granted by society (whether through education policy, access to commercial products, community participation, etc) the more inadequate levels of access will serve to exclude some children and their families.

11.5.2   Action to control or regulate content

Parents are strongly in favour of public initiatives to regulate and control Internet content. They wish to have their own interests as consumers protected, and most lack the necessary expertise to safeguard their children from dubious material. At present, children's use of the Internet is fairly haphazard, directed by their interest in entertainment, need to complete homework, and fandom for various entertainment topics. In their pursuit of these interests, they receive comparatively little guidance or monitoring from parents, for often children are more knowledgeable than their parents about the Internet. Parents tend to gloss their inability or lack of commitment to regulating Internet access by either using crude blocking techniques (e.g. banning chat/email) and/or informal monitoring (locating the PC in the living room) or by expressing faith in the good sense of their child. As a result, many children have, inadvertently and/or deliberately, accessed pornographic and other 'undesirable' sites, although most express a lack of concern about this.

Most public initiatives, however, still rely on parents shouldering the major responsibility for controlling their children's access to the Internet. Thus in May 2001 Jack Straw announced a new kitemark scheme which will provide parents with clear and independent advice about what they can expect from different ISPs. Star ratings will show which ISPs provide software which will make it easy for parents to block unsuitable chat rooms and web sites, and conversely which provide easy access to areas of the web where child pornography can be found. The Government also proposes to challenge all

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[23] See Süss (2001)

[24] See Livingstone and Bovill (1999); Süss, (2001).

companies selling PCs to families to preinstall child safety software. They are also working with the industry to develop a guidance pack on safe Internet use which can be distributed with every computer sold.

There is however a consensus amongst parents and policy advisors that the provision of 'kitemarks' and rating systems, although desirable, are insufficient. There should be legal requirements of ISPs to safeguard users, particularly children.[25]

11.5.3 Action to promote the skills and competencies of children (and their parents and teachers)

While children are generally able to locate sites of interest to them, their use of the Internet tends to remain within narrowly drawn parameters, visiting a few favourite sites, repeating tried-and-tested search strategies, etc. Branching out to discover new sites is more rare, as is any creative use of the Internet (beyond teenagers' extensive use of email, instant message and chat for communication with peers). Also significantly, we find few children with a sufficiently critical awareness of the Internet for them to grasp how and why sites are available, to distinguish public from commercial purposes, or to determine creative or challenging opportunities. In the report we offer a broad definition of Internet literacy, and in fostering this among children much work is still needed. Thus we would argue that while the regulation of content and use will remain of concern, at least as much if not more attention should now be given to maximising the positive opportunities the Internet offers to children.

Clearly many organisations are actively engaged in promoting and supporting children's use of the Internet, including Government, schools, industry, children's organisations, libraries, and so forth. Together it is hoped that these three areas of action will be successfully developed in order to ensure that children and young people make the best use of the Internet, transforming it from a new and unfamiliar technology to which they have access, into a meaningful and valued part of their everyday lives.

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[25] Children's charities are combining to offer advice to parents and to set guidelines for government, ISPs , retailers and hardware manufacturers and software houses. In particular the NCH Children's Charities for Internet Safety (see www.net-consumers.org/connected.htm) recommends that ISPs should be required to: prominently advertise the availability of child-friendly search engines and should have good signposting to any areas specially designed for children: establish and promote "walled garden" services specially for legal minors:
bar all access to telephone lines that have blocked Caller Line Identification. There are also specific recommendations for the regulation and control of chat rooms.

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