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**Article (Accepted version)
(Refereed)**

Original citation:

Livingstone, Sonia (2006) Drawing conclusions from new media research: reflections and puzzles regarding children's experience of the internet. *The information society*, 22 (4). pp. 219-230.

DOI: [10.1080/01972240600791358](https://doi.org/10.1080/01972240600791358)

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Available in LSE Research Online: April 2008

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**Drawing conclusions from new media research:
Reflections and puzzles regarding children's experience of the Internet**

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Article for 'IT in the Home and Personal Environments', ed. A Venkatesh
Special Issue of *Information Society*, 22(4), 219-230.

Acknowledgements

This article reports on research funded by an Economic and Social Research Council grant (RES-335-25-0008) as part of the UK's 'e-Society' Programme, with co-funding from AOL-UK, BSC, Childnet-International, Citizens Online, ITC and Ofcom (see www.children-go-online.net). Thanks to Magdalena Bober, Ellen Helsper, the project's Advisory Panel, its Children's Advisory Panel, and BMRB International.

Keywords

Children and young people, Internet, home, digital divide, literacy, participation

Abstract

New media studies are now benefiting from a burgeoning of empirical studies and theoretical analyses from diverse academic disciplines seeking to locate new media, especially the Internet, within long-standing traditions of social science research. By reviewing and reflecting upon findings from 'UK Children Go Online', a multi-method research project examining the role of the Internet in children and young people's

everyday lives, the present article takes the opportunity to draw out some general conclusions, and associated puzzles, to guide future research. These contribute towards an emerging framework for understanding questions regarding new media access, use and consequences within the social, cultural and political parameters of young people's lives. A range of research findings are discussed that illuminate the shifting balance of opportunities and risks posed by the Internet for children, youth and the family.

Drawing conclusions from new media research:

Reflections and puzzles regarding children's experience of the Internet

Not all audiences are the same, and it is noteworthy that children have been long regarded as a 'special audience' (Dorr, 1986), in both public and academic circles. Children are perhaps the most vociferous and enthusiastic consumers of media, pushing for the purchase of the latest goods, playing often irreverently in front of the screen, sharing and recreating the contents later in social interaction. This should result in exciting research questions; yet although this special status results in some prominence being given to youthful audiences, these are often contextualized within moral panics over the risks of media use. In mainstream research, children are frequently marginalized, leaving their study as a special case for developmental psychologists.

Thus, a literature review of children and young people's use of the Internet, conducted just a few years ago found relatively little solid empirical research, especially by comparison with work on adults (Livingstone, 2003). However, things change fast in this field, partly in response to public policy concerns, and empirical research is now burgeoning. It is therefore timely to ask what conclusions are emerging from the recent body of new work and to formulate the questions to guide the next steps in the research agenda. While the use of information and communication technologies can be explored from multiple theoretical perspectives (Livingstone, 2005), this article takes a media and communications approach, starting from the premise that much is already known regarding the uses of traditional, mass media by audiences at home. On the one hand, the introduction of the Internet into the home may be expected to extend well-established social expectations, assumptions and practices regarding domestic media use (Kraut, Kiesler, Boneva, & Shklovski, in press). On the other hand, a considerable amount of speculation regarding what's new about the Internet (Lievrouw, 2004) has questioned the supposed continuities between previous and new media.

The present article reflects upon findings from 'UK Children Go Online' (UKCGO) (Livingstone & Bober, 2005), a multi-method research project examining the role of the Internet in children and young people's everyday lives, in order to draw out some general 'lessons' to guide future research or, at least, to provoke debate. The project combined a national, in-home, face-to-face, computer-assisted interview with 1511 children and young people aged 9-19, plus a self-completion survey of their parents and a series of

focus group and family observations. In formulating these research conclusions, I have been stimulated by Woolgar's (2002) 'rules' for understanding developments within what he calls, with a deliberate question mark, the 'virtual society?'

He proposed five rules as follows: first, the importance of contextualization, namely that 'the uptake and use of the new technologies depend crucially on local social context' (p.14); second, the assumption of inequality, that 'the fears and risks associated with new technologies are unevenly socially distributed' (p.15); third, the consistent empirical evidence against displacement of the real, that 'virtual technologies supplement rather than substitute for real activities' (p.16); fourth, the counter-intuitive observation, 'the more virtual the more real' (p.17), based on findings that the growth of online activities/spaces has in unexpected ways intensified, remediated or stimulated innovation also in offline activities and spaces; and fifth, contra claims about the death of distance, since efforts to transcend the local and promote the global turn out to depend on specific local practices and identities, 'the more global the more local' (p.19). Just a few years on, these 'rules' or conclusions can now surely be extended; indeed, as this article will argue, subsequent research has elaborated some of them, while also posing new puzzles for future research.

First conclusion: The more you have, the more you need

As Internet access has spread, some have been tempted to argue that the problem of the digital divide is all but resolved (Compaine, 2001). But most of those tracking the evidence for diffusion now argue that 'mere access' does not ensure equality of opportunity, far from it (Chen & Wellman, 2003; Golding & Murdock, 2001; Selwyn, 2004; Warschauer, 2003). Indeed, maintaining adequate Internet access requires a recurrent rather than a one-off investment of money, time and effort by households, something that many have only belatedly realized. In what has been termed a 'cascade' phenomenon, once one has acquired and deciphered the first bit of kit, more and more is needed, placing increasing and often unexpected demands on families (Caron, Giroux, & Douzou, 1989).

For example, in the UKCGO project, demographic differences in whether or not young people have access to the Internet persist, even increase, among those with Internet access. UK families are now differentiated less by whether or not they have any access to the Internet at all than by whether they have access at home, in how many locations they have access, whether they have broadband access at home, and whether children have personal access in their bedrooms (Livingstone & Helsper, in press). In each of these, age and, especially, social class matter, and in some respects, gender is also important (see Table 1).

Table 1 about here

Furthermore, access platforms are diversifying: in the UK, 87% have a computer at home (71% with Internet access), 62% have digital television (17% with Internet access), 82% have a games console (8% with Internet access), and 81% have their own mobile phone

(38% with Internet access, but this does not necessarily mean use). Moreover, those with Internet access at home are also more likely to have these other technologies at home.

In this cascade process, social stratification (i.e. differential levels of material, social and cultural capital) remains crucial (Golding & Murdock, 2001; Selwyn, 2004), and the notion of a binary divide between haves and have-nots must be replaced by a continuum of quality of access and use that reflects differentiation in both material and cultural resources. It is not merely that higher socio-economic status (SES) households are more advantaged in Internet access, but also that they manage to maintain their position of advantage, first through gaining access and then through increasing the quality of that access. In short, 'getting the Internet' has come to represent a key route by which distinctions are reproduced (Bourdieu, 1984). As both a policy and a research issue, inequalities in Internet 'access' (broadly defined) will not go away because socioeconomic inequalities themselves persist.

Puzzle: Does more mean better?

An elaboration of Woolgar's rules of contextualization and of inequality, the claim here is that social stratification, a key feature of social context, shapes the diffusion and appropriation process. However, research has not yet established whether and how this matters, notwithstanding the intuitive sense that it must do. In recent work, this continuum of quality of access and use is now proposed to map onto a continuum of social – or digital – inclusion and exclusion:

A framework of technology for social inclusion allows us to re-orient the focus from that of gaps to be overcome by provision of equipment to that of social development to be enhanced through the effective integration of ICT into communities and institutions (Warschauer, 2003, p.14).

Clearly, research on access and inequalities must keep pace with technological and market developments. How are patterns of access to the Internet changing, and what difference does it make that young people can access the Internet in different ways and from different locations, including from mobile devices? For example, much work has tracked the diffusion of computer and Internet-based technologies into the home and classroom, but little work has examined, let alone demonstrated unequivocally, the positive benefits this has for educational achievement (Attewell & Battle, 1999; BECTa, 2003; Jackson et al., in press; Williams, Clemens, Oleinikova, & Tarvin, 2003).

So, a puzzle persists: what exactly are those with access included in, and what are those without excluded from? One problem is that the Internet is an 'experience technology' (Dutton & Shepherd, 2004); in other words, unless one has used it, it is hard to know what one's missing out on. As we move from talk of the digital divide to that of digital inclusion, the guiding question must be: what is the public good in being digitally included? As many have now noted, new media artifacts, activities and arrangements are ubiquitous in their social consequences, regardless of whether or not individuals are 'users' or 'nonusers' (e.g. Lievrouw & Livingstone, 2006). In one sense, then, everyone is included in the digital society. But what remains unclear is whether and how new

media introduce new forms of inclusion and exclusion, or whether they merely reproduce already familiar forms of social and economic exclusion? Given the continuous march of technological innovation in capitalist society, can we ever expect anything other than the persistent reproduction of inequality among the population?

Second conclusion: The home is a site of difference

Despite widespread treatment of ‘the household’ or ‘the family’ as a taken-for-granted unit of analysis, especially in diffusion research (Rogers, 1995), it is crucial to recognize the differences within (as well as across) households (Livingstone, 2002). Where it has long been argued that the household is not merely a site of difference but also a site of the reproduction of difference, the question for new media studies is whether technologies such as the Internet exacerbate or ameliorate this process (Murdock, Hartmann, & Gray, 1992). Is the Internet appropriated within families as an equalizing or differentiating factor? The UKCGO data suggests different answers for the three main within-family stratifications of gender, age and generation.

There continues to be debate over whether a gender divide exists now that the Internet has become widely available (Chen & Wellman, 2003; Van Zoonen, 2002). The UKCGO survey found some differences, although there are similarities too. It appears that boys spend more time online per day, have been online for longer (in years) and have higher levels of online skills and self-efficacy. They also experience more online risks than girls. They are more likely to seek out pornographic and violent/racist websites on purpose and to come across online porn by accident. Boys take up slightly more peer-to-peer opportunities (such as emailing, instant messaging, downloading music and playing games), though overall, the gender differences are modest. Furthermore, web design is an activity undertaken more often by boys than girls.

On the other hand, girls tend to visit a broader range of civic sites, particularly charity sites and human/gay/children’s rights sites, and they take up slightly more civic opportunities (such as visiting civic/political sites and signing petitions online). Girls encounter less pornography online but are more likely to experience contact risks (such as online bullying, talking to strangers online and meetings with people from the Internet). However, there are no differences in the take up of opportunities to interact with websites and no differences in parental rules and practices between boys and girls. In relation to regulating the Internet at home, parents report equivalent treatment of sons and daughters (Livingstone & Bober, 2005). Since these gender differences are already familiar from research on children’s offline leisure, this suggests that the Internet supplements rather than substitutes for what Woolgar called ‘real activities’, in his third rule (Livingstone, 2002).

However, inviting a stronger focus in the literature on developmental trajectories, the UKCGO project found that age makes the biggest and most consistent difference within households (Livingstone & Bober, 2005). Specifically, at 9-11 years old, although often not major media users, these young people are beginning to broaden the range of their Internet uses. They are also a group whose Internet skills are easily over-estimated and on whom many anxieties centre, yet their enthusiastic ambitions outstrip their abilities, and

they would benefit from greater support and a wider diversity of age-specific online content. Relishing their new-found independence, young teens aged 12-14 are experimenting with and expanding their use of the Internet to pursue their interest in games, fandom, music, etc. Still the focus of parental anxieties but concerned to maintain their privacy, they are no longer easily subject to parental regulation.

By 15-17 years, teens are absorbed by the culture of their peer group, yet also seeking to express their individuality through their interest in music, social networks, consumer goods and Internet expertise. They are still at risk from inappropriate contact and other risks, yet facing high educational expectations and have a growing serious interest in civic/political and personal/health/careers information. Hence, they have much to gain from the Internet. Once young adults at 18-19, people negotiate a range of information, communication and literacy demands as they manage the transition from school to further study and/or work. On average, they access and use the Internet less and have lower levels of online skills. Being no longer ‘minors’ subject to parental regulation, they are beginning to reflect on the risks and opportunities facing children younger than themselves.

Thus, the process of socialization enacts and reproduces expectations regarding both age and gender, helping to explain the persistence in differences in use of the Internet even among young people with access. Indeed, Livingstone and Helsper (in press) found that although children from lower SES homes who have home Internet access use it just as much as those from higher SES homes, among those with home access, older children and boys still use it more than younger children and girls. In other words providing home Internet access in low SES households helps to close the gap in use, potentially reducing disadvantage, but the same cannot be said for age and gender differences. Cultural factors play a key role to maintain differences even where equivalence of access might have been expected to eliminate them. So, socioeconomic factors continue to differentiate among households and, beyond this, cultural factors continue to differentiate within households. Within the family, it is thus important to recognize that access does not determine use, but use depends on such cultural factors as social expectations, adult permissions, and domestic culture.

Generational differences are more difficult to track, with little research directly comparing the activities and skills of parents and children. It is clear, however, that the Internet has become a site for the display and contestation of generational differences (Bird & Jorgenson, 2003; Livingstone & Bober, in press; Ribak, 2001). This differentiation centers on two issues – Internet-related expertise and the domestic regulation of the Internet. In both cases, the dynamic within families seems to maximize difference rather than to overcome it. Figure 1 suggests that both children and parents are proud to claim the comparative expertise of the child as regards Internet-related skills, this being confirmed in qualitative research also (Facer, Sutherland, Furlong, & Furlong, 2001; Livingstone & Bober, 2003).

Figure 1 about here

Similarly, Figure 2 suggests that children and parents are motivated to tell rather different stories when it comes to accounting for Internet risks (and, therefore, the need for domestic regulation), for reasons more to do with the nature of parent-child power relations than the Internet *per se* (Livingstone & Bober, in press). Apart from sounding a warning to those seeking to research families by interviewing or surveying either but not both of parents and children, these findings should lead us to inquire into the ways in which the Internet represents a source of generational tension within families.

Figure 2 about here

Puzzle: Is the Internet contributing to the individualization of the family?

The combination of children gaining greater expertise, yet also encountering a fair degree of online risks, rings warning bells for policy makers. On the one hand, youthful expertise online offers a (rare) occasion to value, rather than marginalize, children's knowledge within the home. On the other hand, children are – perhaps because parents feel they can rely on children's expertise – encountering certain online risks that their parents are comparatively unaware of. Intriguingly, this belies commonplace expectations that the home is a space equally visible to all, and raises important questions about the flow of knowledge, and the maintenance of privacy, within the home as well as between the home and the world outside (Livingstone, in press-a). Consistent with Woolgar's fourth rule, we thus see that some of children's everyday practices for protecting their privacy offline have been intensified, becoming more creative, now that the Internet renders their peer communication, potentially, more accessible to parents than hitherto.

We have yet to understand the consequences of these generational differences for the family. But a growing number of commentators are intrigued by the proposition that new media are contributing to a social shift from a home based on shared experience (a common space, common timetable, common knowledge), to a home that is individualized – enabling a set of intersecting but personalized spaces and timetables (Flichy, 2002; Livingstone, 2002; Pollock, 1990; Ziehe, 1994). Instead of (or as well as) the media-rich living room, where families congregate around their favorite show, we now have the media-rich bedroom, where individuals pursue their different interests and where sustaining shared experience is increasingly seen – by parents at least – as a challenge (Chisholm, Buchner, Kruger, & Brown, 1990).

In Lievrouw and Livingstone (2006), we noted that new media artifacts, activities and arrangements are characterized by network relations, shaped by the broader social and political shifts in late modern society (see Castells, 2002). Although these networks are themselves part of a broader socio-historical shift from hierarchical power relations to peer-to-peer networking, the point here is that this is occurring within as well as outside the family. Hence the Internet, like many other increasingly personalized and/or mobile media, may be contributing to the individualized family 'living together separately' and to what has been called the democratic family – in which parental authority is less hierarchical, more based on the psychological intimacy of the 'pure relationship' (Flichy, 2002; Giddens, 1993; Livingstone, 2002), more undermined by the growing importance of a strongly heterarchical youth culture (Drotner, 2005).

Third conclusion: The more you know, the less you understand

As already noted, much has been made of the supposed Internet-related expertise of children and young people, especially compared with older generations. It may seem paradoxical, therefore, to suggest that more knowledge is associated with greater ignorance. However, the point here is not that online experience generates ignorance, for it does not, but rather that the more one does online, the more it matters that there are things one does not know. An unskilled Internet user may not need to know about the safe use of photographs online, or about the risks of putting personal information in a blog; a skilled user encounters more dimensions of the Internet, including more risks, and so needs a greater skills to avoid, respond to and/or cope with the online environment. As Figure 3 shows clearly, parents report fewer online skills than their children but still many young people say they lack key Internet-related skills. As with skills in other domains, then, variation across young people will hardly be eliminated by Internet literacy training for the necessary skills and competences to use the Internet continue to develop and change, though schools have a valuable role to play here (Livingstone & Bober, 2004a).

In an analysis of the balance between teenagers' take up of online opportunities and the risks they encounter online, the UKCGO project found a strong correlation between online opportunities and risks, contrary to the optimistic assumption that those who have found their way to the opportunities will also have learned to avoid the risks. The explanation lies in the key role of online skills. A path analysis revealed that teenagers' level of online skills has a direct influence on the breadth of online opportunities and risks they encounter, over and above the effects of variation in demographics, access and use. So, the more skills in using the Internet the teenager has, the more opportunities they take up and also the more risks they are likely to encounter on the Internet (Livingstone, Helsper, & Bober, 2005a).

Matters are yet more complex when we examine different styles of engagement with the Internet. The UKCGO project conducted a cluster analysis of 12-17 year olds who go online at least weekly and use the Internet at home, based on their online skills and activities. Four styles of engagement were identified, as shown in Table 2 (Livingstone, Bober, & Helsper, 2005a).

Table 2 about here

For no group could it be said that their growing expertise has led them to take up online opportunities while avoiding online risks. On the contrary, the two more skilled groups encounter both more opportunities and more risks. The low risk novices, with notably lower online skills, do relatively little on the Internet, and the inexperienced risk takers show an imbalance, for their lack of skills but preference for risk taking results in few opportunities but more risks. Each group, it can be suggested, invites a rather different strategy in terms of policy interventions, whether based on school literacy training or parental mediation.

Puzzle: Can Internet literacy reduce online risks?

These findings clearly pose a puzzle for research, and for policy and public responses to online risks, however these are defined (Livingstone, 2001; Mitchell, Finkelhor, & Wolak, 2003; Turow, 2001). It seems difficult to separate opportunities from risks so that, for many teenagers, taking up opportunities is an experience associated with some degree of risk. In this respect, Internet literacy resembles other forms of literacy or skill: for example, learning to read, or to cross the road, or to make friends, may result in socially valued reading or 'approved' community activities, or 'appropriate' friends, or quite the contrary. Can Internet literacy interventions be devised to reduce rather than increase risks without, concomitantly, reducing opportunities? This latter point remains important at a time when, although it is easy and tempting to overestimate children's expertise, many in practice make relatively cautious or narrow use of the Internet, as discussed further below (Livingstone & Bober, 2004a).

More research is needed on the relation between parental practices and risk taking since, as Livingstone et al (2005a) found, differing parenting styles have varying and sometimes opposite effects to those desired. The UKCGO project could not identify, within the range of parental responses to online risk, a strategy that was in practice associated with effective risk reduction without also reducing opportunities (and, indeed, restricting use and skills overall). Nor did it find a straightforward relation between parental and children's reports of domestic rules, or between parental rules and children's online activities. If the Internet is indeed like learning to read or form friendships, safety guidance needs to focus on coping with risk, and on making subtle judgments of quality and safety in specific contexts – rather than the often blanket bans (especially on interactive uses of the Internet - 'no email', 'avoid chat rooms', 'never give out personal information') that parents are currently advised to impose.

Fourth conclusion: Internet use is typically neither sustained, active or engaged

Assuming that research can demonstrate that going online benefits young people, and also that ways can be found to increase opportunities without also increasing risks, the next research task must surely be to find ways to enhance the online experience for young people. One consequence of the convenient assumption that young people are already Internet experts is that there is little critical scrutiny of their current online activities. This assumption is perpetuated not only because of the perception, some even term it a myth, that the young are the experts (Facer & Furlong, 2001) but also because of widespread perceptions of the Internet as an active medium, particularly by contrast with the mass media. Hence considerable discussion has speculated on how the Internet, unlike television, is a 'sit-forward' or 'pull' medium rather than a 'sit-back' or 'push' medium. In part, this represents a characterizations of different systems of content distribution; one-to-one (or many-to-many) for the Internet, compared with the familiar one-to-many of mass, broadcast television. But it also represents a characterization of different 'implied users' or 'implied viewers', with the former assumed to be more motivated, selective and engaged than the latter (notwithstanding several decades of 'active audience' theory) (Livingstone, 2004). But are young people active Internet users?

The UKCGO project sought to understand the emerging nature of Internet use for young people, treating ‘use’ as a complex, multidimensional activity. When examining take up of each of 15 varied opportunities online, findings for 9-19 year olds who use the Internet at least weekly show that: 16% of them make only basic informational use of the Internet; a further 29% also use the Internet for games and email; yet a further 27% expand their peer-to-peer uses with instant messaging and music downloading; and only the remaining 27% make a broad use of the Internet, taking up such opportunities as completing quizzes, creating websites, voting, contributing to message boards, offering advice, filling in forms, etc in any significant numbers (Livingstone & Helsper, in press). As that paper shows, a range of factors influences the take up of online opportunities, including age, gender, access, frequency of use and online expertise.

When we examine particular online activities, a similar pattern holds. Young people make the initial steps towards Internet engagement, with some more active than others, but often they do not sustain the activity, or engage as thoroughly as those casually observing them might suppose. For example, 7 in 10 of 9-19 year olds who use the internet weekly report at least one form of interactive engagement with a website (out of doing a quiz, sending an email/ SMS/picture/story to a site, voting for something online, contributing to a message board, offering advice to others, filling in a form or signing a petition online), suggesting a high level of interest and motivation among children and young people to be active online. Yet, on average, the number of ways of interacting is 1.5 out of 8 asked about, suggesting that despite the many invitations to interact, take-up remains low, especially among working class teenagers (Livingstone, Bober, & Helsper, 2005b).

To take a second example, the survey asked about website creation, perhaps the most ‘active’ form of online engagement and certainly one that marks a clear contrast with how it was possible for viewers to engage with television. Overall, 34% of 9-19 year olds who go online at least once a week have tried to set up their own webpage – more often boys than girls, and more often older than younger children (though younger children indicate they would like to develop the skills to make a site). Over a third making their own site is in some ways impressive, suggesting a considerable desire to be active and creative content producers as well as receivers. However, on closer examination it turned out that of this group, 34% never got the site online, 17% had put it online but it is no longer online, a further 17% have not updated their site for a long time, 12% are not ever sure if the site is still online, and only 32% have put it online and keep it updated – one in ten of the population. Further, 45% of those who made a website did so for a school project, though 34% did it because they enjoy creative activities. Supporting the concern over young people’s Internet literacy, when those who have not made a website were asked why not, 54% said they lacked the knowledge to do so, while a further 41% said they were not interested in such a possibility (Livingstone, Bober, & Helsper, 2004).

Last, since the interactivity of the Internet has been particularly welcomed for those seeking to revitalize the public sphere and young people’s civic participation (Coleman, 1999; Dahlgren, 2003), the UKCGO findings considered young people’s use of the Internet for actively seeking out information about political, environmental, human rights or other participatory issues (Livingstone et al., 2005b). Over half (54%) of 12-19 year

olds who go online once a week or more have visited at least one such website, and girls, middle class and older teenagers tend to visit a broader range of civic sites. However, on average only one of these kinds of sites (out of a possible five) is visited by each individual, suggesting that overall, visiting civic websites is low on young people's priorities, with only 31% of girls and 23% of boys having visited two or more kinds of sites. Further, of those who have visited such a site, 64% claimed to have 'just checked it out', while 18% said they had emailed the site, 12% had voted or signed a petition online, and 6% had joined a discussion on the site. Of the half who had never visited a civic site, 83% said this was because they were not interested in such issues. In part, such low interest is because civic and political issues figure little in youth culture more generally – 56% of Internet users said they never talk about such issues with their friends, and only 4% do so often (Livingstone, in press-b).

Puzzle: How can interactive and creative engagement with the Internet be encouraged?

The paradox is that such a question needs to be asked, since it is widely held both that young people are Internet enthusiasts and that the Internet is an intrinsically interactive technology. Yet the findings suggest that young people's initial forays into the online environment are not always sustained or followed through, particularly in relation to the more interactive opportunities. More common is information searching, contacting friends and game playing. But as Woolgar pointed out, the more global the more local, a rule that might be modified for young people insofar as they not only engage primarily with the local but also they engage primarily with those with similar status (or lack of it) – i.e. their peers. It seems that when it comes to engaging with adults as professional content providers, young people tend to adopt a more 'passive' or receptive position, finding information, checking out possibilities and perhaps answering questions put to them, but less often engaging, initiating or contributing to interactions. For young people, this significantly limits what they feel comfortable doing online.

A number of reasons can be hazarded for the gap between the actual and 'ideal' young Internet user. First, parental anxieties lead many specifically to restrict their children's take up of interactive opportunities, for these are widely seen as most risky (Livingstone & Bober, in press). Second, young people are often cynical and disillusioned regarding adults' interest in their views and experiences, feeling that they may be invited to 'have their say' but nonetheless, they are unlikely to be listened to properly, resulting in a low political self-efficacy (Livingstone, in press-b). Indeed, it would seem more generally, regarding the many initiatives designed to encourage civic participation, that it is easier to facilitate the diverse expression of opinions than it is to design an online forum that facilitates a process of deliberative decision making expected of a truly public sphere (Bentivegna, 2002). Third, young people are becoming socialized into the emerging genres of online content defined by global commercial brands rather than (often amateur) public or civic content, the former appearing glossy and inviting though in practice, also being 'sticky' sites that push mass-produced content to an audience that is given little opportunity to respond creatively or enter an open and stimulating network of possibilities (Montgomery, 2001; Seiter, 2005).

The counter-examples are many and varied, of course, with research revealing a fascinating range of ways in which young people are engaging creatively with diverse online opportunities (e.g. Fornas, Klein, Ladendorf, Sunden, & Svenigsson, 2002; Mazzarella, 2005). The point being stressed is not that this is not happening, but that it remains a minority activity when looking across the population, so we should not be misled by the notable instances of creative engagement. It remains a minority activity not because young people lack imagination or initiative but because the institutions that control their access to the Internet are highly constraining – anxious parents, uncertain teachers, busy politicians, profit-oriented content providers. Further, some of the more widely taken up online activities have become fraught with difficulties for young people – chat rooms are closed down because of the risk of pedophiles, music downloading has resulted in legal actions for copyright infringement, educational institutions are increasingly instituting plagiarism procedures, and so forth. In practice, I suggest, the Internet is not quite as welcoming a place for young people as popular rhetoric would have one believe and in this, of course, it is not so different from offline social institutions (Qvortrup, 1995). No wonder visiting the entertaining sites of the big brands – and so perpetuating rather than challenging the old one-to-many mode of mass communication – feels welcoming and safe.

Looking ahead

This article has sought to pinpoint continuities and shifts in the relation between media - particularly the Internet - and children, youth and the family. Taken together, the findings from the 'UK Children Go Online' project illustrate the role of the social, cultural and political parameters of young people's lives in shaping the diffusion and appropriation of the Internet. Four tentative research conclusions have been proposed. Each of these also generates further directions for research insofar as each is associated with key puzzles about how the Internet may make a positive contribution to young people's lives.

In developing these thoughts, I have drawn on the approach initially sketched in Lievrouw and Livingstone (2006), where a mass communication framework is rethought for the new media environment. For as noted earlier, until recently media research (and, indeed, the mass media) have construed the home and family as a sanctuary, a place of leisure and a haven away from the demands of the workplace, community and school. Previously-new media (television, games machine, music systems, video, etc) have been framed primarily as escapist, entertainment-oriented media (Livingstone, 2002), with research focused on the domestic or family dynamics surrounding media use, particularly the threats to this posed by the media. However, the media-rich home is now being further transformed, stimulated by the opportunities for connection with the outside world rather than for escape from it. Increasingly, learning, work, citizenship and community participation are conducted within the home through the medium of the computer, the Internet, and mobile telephony. Crucially, today's new media span, or blur, key social boundaries – work/leisure, home/community, private/public, education/entertainment, commercial/civic, interpersonal/technologically mediated communication, personal/political, local/global, and many more.

So, how we think about people's engagement with new media cannot be bracketed off as 'only' important in the domestic or leisure realms. People, including young people and their families, are increasingly at the centre of new media practices, design and social arrangements across all spheres of society. Rather than define new media in technologically determinist terms, focusing on the impacts of particular technical features, channels or content, Lievrouw and Livingstone (2006) sought to integrate technological, social, political and economic factors, locating information and communication technologies in their social contexts by drawing on the concept of infrastructure (Livingstone, 2002; Star & Bowker, 2002). Communication and information infrastructures, we suggested, have three components: first, the artifacts or devices used to communicate or convey information (raising questions of design and innovation); second, the activities and practices in which people engage to communicate or share information (raising questions of cognition, culture and social context); and third, the social arrangements or organizational forms that develop around those devices and practices (raising questions of institutional organization, power and governance).

This article has focused on domestic activities and practices surrounding the Internet; other research will, and should, examine the matters of artifact/design and social/institutional arrangements that facilitate or constrain these practices. The present discussion of activities and practices represents an attempt to characterize people's everyday relation to technology, in a context in which both are undergoing change. In relation to access, the first conclusion stressed that inequalities in access continue, though the indicators of inequality continue to shift, because of the continued importance of socioeconomic stratification. The puzzle for research, then, is to determine the consequences of such inequalities and, particularly, to disentangle the way in which access to the Internet enhances or undermines social (and digital) inclusion or exclusion.

If inequalities across households are largely socioeconomic, those within households are also important, these center on age, gender and generation and invite more psychological and cultural explanations. This is to invite an analysis in terms of the agency of technology users, an agency constrained by but not wholly accounted for by their economic and social context. The importance of generation, especially, throws up some challenges for future research as the Internet seems to be positioned within family dynamics so as to pinpoint tensions in parent-child relations. These tensions are currently the subject of a longer historical analysis, posing the question of whether domestic use of the Internet is contributing to the individualization and democratization of the family. The third conclusion proposed here focuses down on the individual level, following a 'reflexive modernity' approach (Giddens, 1991) by examining differences in the balance between opportunities and risks encountered by different young people and inviting an exploration of the relation between family context, lifestyle, moral judgment, competence and identity. The puzzle posed here centers on how research can inform public policy for, at present, the findings underdetermine any clear policy directions.

The last conclusion drawn in the article seeks to integrate the micro and macro levels once more, for the evident limitations on Internet use – in terms of engagement, interactivity, and participation – should not, it is suggested, be taken as evidence of limitations on the lifestyle, competence and identity of young people. Rather, they remind

us that all Internet use is located in relation to material and economic circumstances. These do not only act by differentiating socioeconomic conditions across households but they also frame the ways in which key institutions – offline and also online - facilitate or hinder young people’s activities. This returns us to the social/digital inclusion agenda by posing with some urgency the question of just what society thinks young people should be doing on the Internet and in order to increase which public benefits?

References

- Attewell, P., & Battle, J. (1999). Home computers and school performance. *The Information Society*, 15(1), 1-10.
- BECTa (2003). *Impact2 - The impact of information and communication technologies on pupil learning and attainment*. British Educational Communications and Technology Agency (www.becta.org.uk).
- Bentivegna, S. (2002). Politics and new media. In L. Lievrouw & S. Livingstone (Eds.), *The Handbook of New Media* (pp. 50-61). London: Sage.
- Bird, S. E., & Jorgenson, J. (2003). Extending the school day: Gender, class and the incorporation of technology in everyday life. In M. Consalvo & S. Paasonen (Eds.), *Women and everyday uses of the Internet: agency and identity* (pp. 255-274). New York: Peter Lang.
- Bourdieu, P. (1984). *Distinction: a social critique of the judgement of taste*. London: Routledge and Kegan Paul.
- Caron, A. H., Giroux, L., & Douzou, S. (1989). Uses and impacts of home computers in Canada: A process of reappropriation. In J. L. Salvaggio & J. Bryant (Eds.), *Media use in the information age: Emerging patterns of adoption and consumer use* (pp. 147-162). Hillsdale, New Jersey: Lawrence Erlbaum Associates.
- Castells, M. (2002). *The Internet galaxy: Reflections on the Internet, business, and society*. Oxford: OUP.
- Chen, W., & Wellman, B. (2003). *Charting and bridging digital divides: Comparing socio-economic, gender, life stage, and rural-urban Internet access and use in eight countries*. Global Consumer Advisory Board, www.amdgcab.org.
- Chisholm, L., Buchner, P., Kruger, H. H., & Brown, P. (Eds.). (1990). *Childhood, youth and social change : A comparative perspective*. London: Falmer Press.
- Coleman, S. (1999). The new media and democratic politics. *New Media and Society*, 1(1), 67-73.
- Compaine, B. M. (Ed.). (2001). *The digital divide: Facing a crisis or creating a myth?* Cambridge MA and London: MIT Press.
- Dahlgren, P. (2003). Reconfiguring civic culture in the new media milieu. In J. Corner & D. Pels (Eds.), *Media and the Restyling of Politics* (pp. 151-170). London: Sage.
- Dorr, A. (1986). *Television and children: A special medium for a special audience*. Beverly Hills, CA: Sage.
- Drotner, K. (2005). Media on the move: Personalised media and the transformation of publicness. In S. Livingstone (Ed.), *Audiences and Publics: When Cultural Engagement Matters for the Public Sphere* (pp. 187-212). Bristol: Intellect Press.
- Dutton, W. H., & Shepherd, A. (2004). *Confidence and risk on the Internet*. Oxford: Oxford Internet Institute.

- Facer, K., & Furlong, R. (2001). Beyond the myth of the 'cyberkid': Young people at the margins of the information revolution. *Journal of Youth Studies*, 4(4), 451-469.
- Facer, K., Sutherland, R., Furlong, J., & Furlong, R. (2001). What's the point of using computers? The development of young people's computer expertise in the home. *New Media & Society*, 3(2), 199-219.
- Flichy, P. (2002). New media history. In L. Lievrouw & S. Livingstone (Eds.), *Handbook of New Media: Social Shaping and Consequences of ICTs* (pp. 136-150). London: Sage.
- Fornas, J., Klein, K., Ladendorf, M., Sunden, J., & Svenigsson, M. (Eds.). (2002). *Digital borderlands: Cultural studies of identity and interactivity on the Internet*. New York: Peter Lang.
- Giddens, A. (1991). *Modernity and self-identity: Self and society in the late modern age*. Cambridge: Polity Press.
- Giddens, A. (1993). *The transformation of intimacy: Sexuality, love and eroticism in modern societies*. Cambridge: Polity Press.
- Golding, P., & Murdock, G. (2001). Digital divides: Communications policy and its contradictions. *New Economy*, 8(2), 110-115.
- Jackson, L. A., von Eye, A., Biocca, F., Barbatsis, G., Zhao, Y., & Fitzgerald, H. E. (in press). Children's home Internet use: Predictors and psychological, social and academic consequences. In R. Kraut, M. Brynin & S. Kiesler (Eds.), *New Information Technologies at Home: The Domestic Impact of Computing and Telecommunications*. Oxford: Oxford University Press.
- Kraut, R., Kiesler, S., Boneva, B., & Shklovski, I. (in press). Examining the impact of Internet use: Details make a difference. In R. Kraut, M. Brynin & S. Kiesler (Eds.), *New Information Technologies at Home: The Domestic Impact of Computing and Telecommunications*. Oxford: Oxford University Press.
- Lievrouw, L. (2004). What's changed about new media? Introduction to the fifth anniversary issue of new media & society. *New Media and Society*, 6(1), 9-15.
- Lievrouw, L., & Livingstone, S. (2006). Introduction. In L. Lievrouw & S. Livingstone (Eds.), *Handbook of New Media: Social Shaping and Social Consequences* (Updated student edition). London: Sage. Pp.1-14.
- Livingstone, S. (2001). *Online freedom and safety for children*. London: IPPR /Citizens Online Research Publication. Retrieved 29/11/05 from <http://eprints.lse.ac.uk/archive/00000416/>
- Livingstone, S. (2002). *Young people and new media: Childhood and the changing media environment*. London: Sage.
- Livingstone, S. (2003). Children's use of the Internet: Reflections on the emerging research agenda. *New Media & Society*, 5(2), 147-166.
- Livingstone, S. (2004). The challenge of changing audiences: Or, what is the audience researcher to do in the Internet age? *European Journal of Communication*, 19(1), 75-86.
- Livingstone, S. (in press-a). Children's privacy online. In R. Kraut, M. Brynin & S. Kiesler (Eds.), *New Information Technologies at Home: The Domestic Impact of Computing and Telecommunications*. Oxford: Oxford University Press.

- Livingstone, S. (in press-b). Interactivity and participation on the Internet: A critical appraisal of the online invitation to young people. In P. Dahlgren (Ed.), *Young Citizens and New Media: Strategies for Learning Democratic Engagement*.
- Livingstone, S. (2005). Critical debates in Internet studies: Reflections on an emerging field. In J. Curran & Gurevitch, M. (Ed.), *Mass Media and Society* (5th ed.). London: Sage. Pp. 9-28.
- Livingstone, S., & Bober, M. (2003). *UK Children Go Online: Listening to young people's experiences*. London: London School of Economics and Political Science. Retrieved 29/11/05 from <http://eprints.lse.ac.uk/archive/00000388/>
- Livingstone, S., & Bober, M. (2004a). Taking up opportunities? Children's uses of the Internet for education, communication and participation. *E-Learning*, 1(3), 395-419. Retrieved 29/11/05 from <http://eprints.lse.ac.uk/archive/00000418/>
- Livingstone, S., & Bober, M. (2004b). *UK Children Go Online: Surveying the experiences of young people and their parents*. London: London School of Economics and Political Science. www.children-go-online.net
- Livingstone, S., & Bober, M. (2005). *UK Children Go Online: Final report of key project findings*. London: London School of Economics and Political Science. www.children-go-online.net.
- Livingstone, S., & Bober, M. (in press). Regulating the Internet at home: Contrasting the perspectives of children and parents. In D. Buckingham & R. Willett (Eds.), *Digital Generations*. Mahwah, NJ.: Erlbaum.
- Livingstone, S., Bober, M., & Helsper, E. J. (2004). *Active participation or just more information? Young people's take up of opportunities to act and interact on the Internet*. London: London School of Economics and Political Science. www.children-go-online.net.
- Livingstone, S., Bober, M., & Helsper, E. J. (2005a). *Internet literacy among children and young people*. London: London School of Economics and Political Science. www.children-go-online.net.
- Livingstone, S., Bober, M., & Helsper, E. J. (2005b). Active participation or just more information? Young people's take up of opportunities to act and interact on the Internet. *Information, Communication and Society*, 8(3), 287-314.
- Livingstone, S., & Helsper, E. (in press). Gradations in digital inclusion: Children, young people and the digital divide. *New Media and Society*.
- Mazzarella, S. R. (Ed.). (2005). *Girl Wide Web: Girls, the Internet, and the negotiation of identity*. New York: Peter Lang.
- Mitchell, K. J., Finkelhor, D., & Wolak, J. (2003). The exposure of youth to unwanted sexual material on the Internet: A national survey of risk, impact, and prevention. *Youth & Society*, 34(3), 330-358.
- Montgomery, K. (2001). The new on-line children's consumer culture. In D. Singer & J. Singer (Eds.), *Handbook of Children and the Media* (pp. 635-650). London: Sage.
- Murdock, G., Hartmann, P., & Gray, P. (1992). Contextualizing home computing: Resources and practices. In R. Silverstone & E. Hirsch (Eds.), *Consuming Technologies: Media and Information in Domestic Space*. London: Routledge.
- Pollock, G. (1990). Individualization and the transition from youth to adulthood. In B. M. Young (Ed.), *Television Advertising and Children* (pp. 55-68). New York: Oxford University Press.

- Qvortrup, J. (1995). Childhood and modern society: A paradoxical relationship. In J. Brannen & M. O'Brien (Eds.), *Childhood and Parenthood* (pp. 189-198). London: Institute of Education, University of London.
- Ribak, R. (2001). 'Like Immigrants': Negotiating power in the face of the home computer. *New Media & Society*, 3(2), 220-238.
- Rogers, E. M. (1995). *Diffusion of Innovations* (Vol. 4). New York: Free Press.
- Seiter, E. (2005). *The Internet playground: Children's access, entertainment, and mis-education*. New York: Peter Lang.
- Selwyn, N. (2004). Reconsidering political and popular understandings of the digital divide. *New Media & Society*, 6(3), 341-362.
- Star, L., & Bowker, G. (2002). How to infrastructure. In L. Lievrouw & S. Livingstone (Eds.), *Handbook of New Media: Social Shaping and Consequences of ICTs*. London: Sage.
- Turow, J. (2001). Family boundaries, commercialism, and the Internet: A framework for research. *Journal of Applied Developmental Psychology*, 22(1), 73-86.
- Van-Zoonen, L. (2002). Gendering the Internet: Claims, controversies and cultures. *European Journal of Communication*, (17), 1, 5-23.
- Warschauer, M. (2003). *Technology and social inclusion: Rethinking the digital divide*. Cambridge: MIT.
- Williams, J., Clemens, S., Oleinikova, K., & Tarvin, K. (2003). *The skills for life survey: A national needs and impact survey of literacy, numeracy and ICT skills*. Norwich: The Department for Education and Skills.
- Woolgar, S. (2002). Five rules of virtuality. In S. Woolgar (Ed.), *Virtual Society? Technology, Cyberbole, Reality* (pp. 1-22). Oxford: OUP.
- Ziehe, T. (1994). From living standard to life style. *Young: Nordic Journal of Youth Research*, 2(2), 2-16.

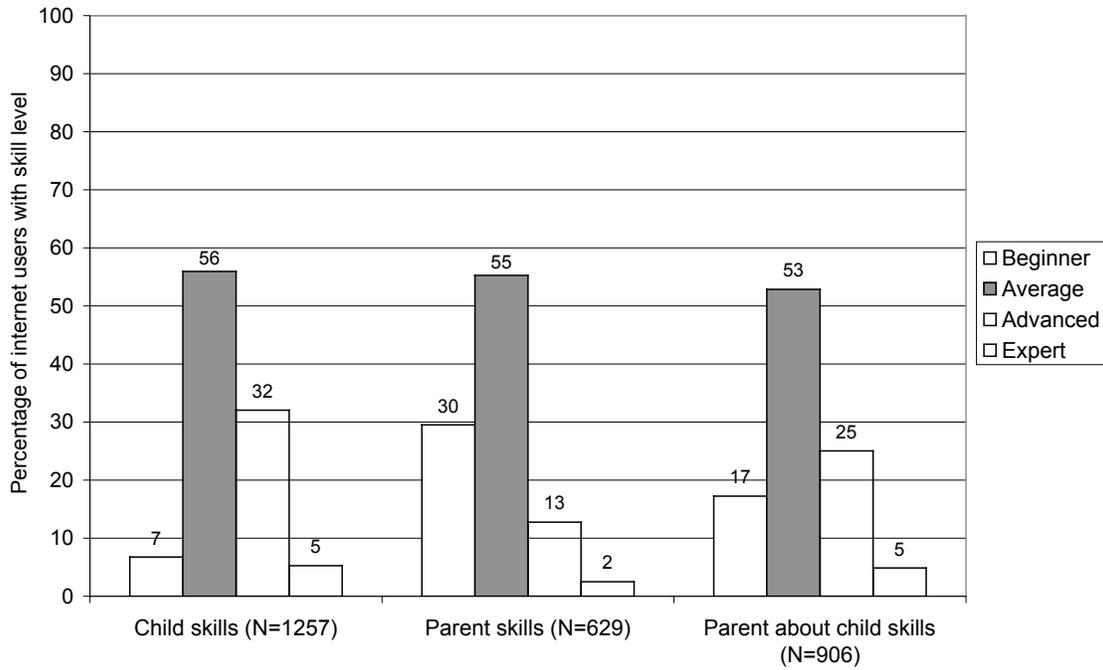
Table 1: Quality of access to the Internet, by demographics

	% Non users ¹	Total # access points ²	Access at home ³	Broadband access ⁴	Bedroom access ⁵
Boys	3%	3.02	74%	35%	22%
Girls	3%	2.81	73%	36%	15%
9-11	4%	2.30	70%	36%	10%
12-15	1%	3.02	74%	33%	19%
16-17	2%	3.32	83%	40%	26%
18-19	8%	3.18	69%	33%	24%
AB	0%	3.38	91%	43%	20%
C1	3%	3.13	83%	35%	22%
C2	3%	2.74	77%	31%	21%
DE	7%	2.41	47%	25%	13%
Average	3%	2.92	74%	35%	19%

Base: All 9-19 year olds in UKCGO survey (N=1511)
Source: UKCGO project (Livingstone & Helsper, in press).

¹ Non-users (Age and socio-economic group differences significant p<0.01)
² Total access points (Gender, age and socio-economic group differences significant p<0.01)
³ Access at home (Age and socio-economic group differences significant p<0.01)
⁴ Broadband access (Socio-economic group differences significant p<0.01)
⁵ Bedroom access (Gender, age and socio-economic group differences significant p<0.01)

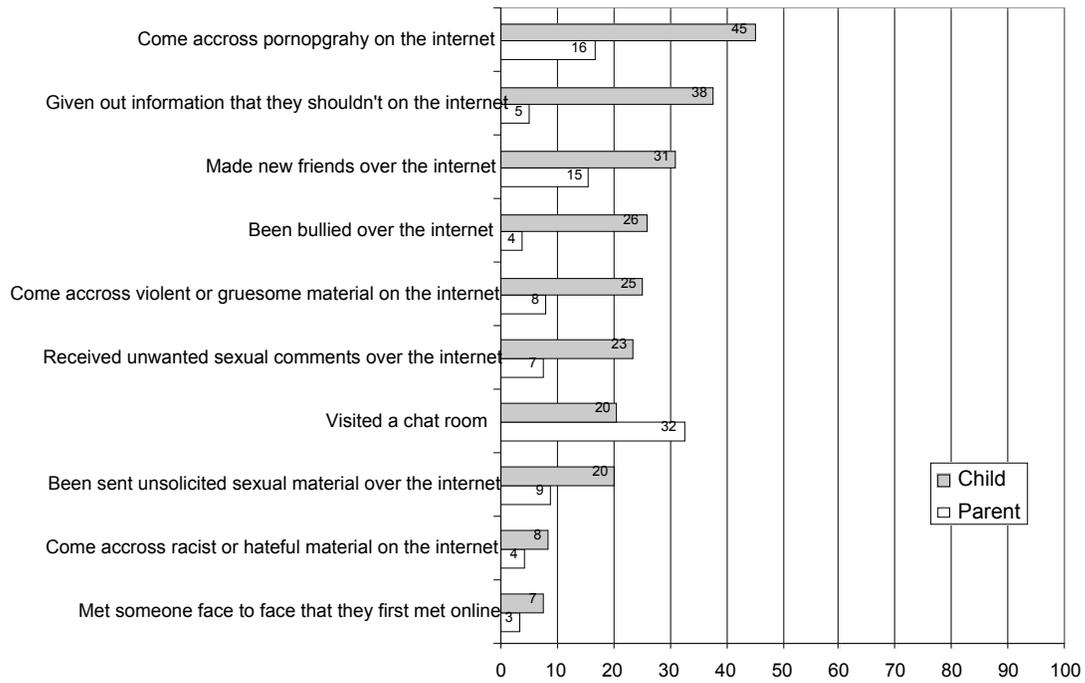
Figure 1: How good are you at using the Internet?/How would you judge your child's skills in using the Internet?



Base: All 9-19 year olds in UKCGO survey who use the Internet at least once a week (N=1257); Parents who have ever used the Internet (N=629); All parents of 9-17 year olds (N=906).

Source: UKCGO project (Livingstone & Bober, 2004a, 2004b)

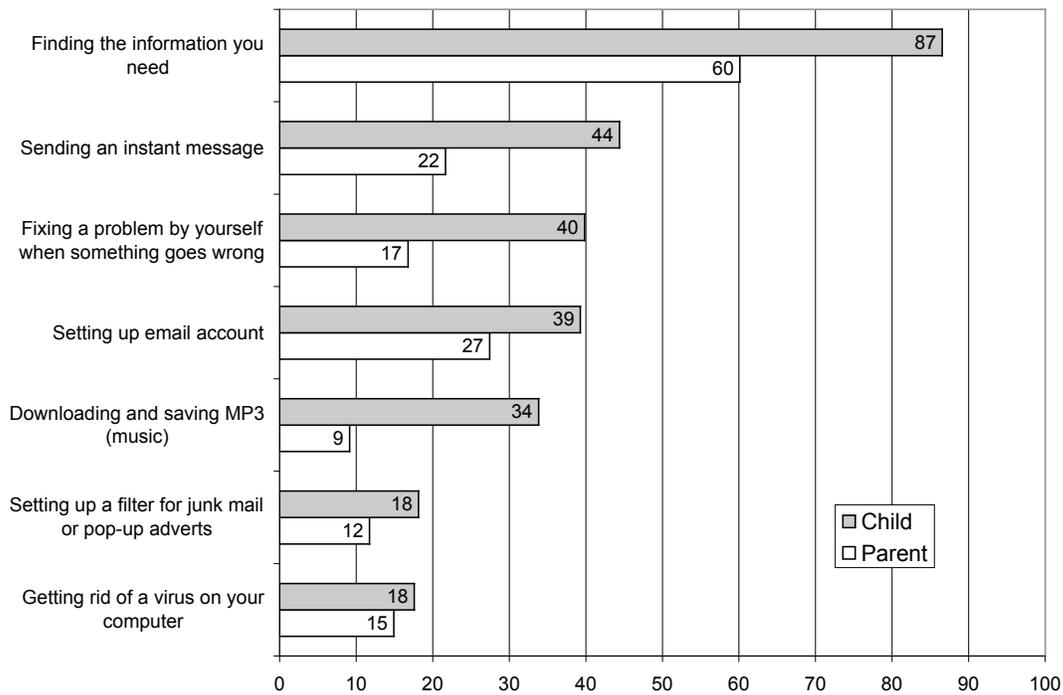
Figure 2: Have you/has your child done these things on the Internet? (Multiple response)



Base: All 9-17 year olds who use the Internet at least once a week (N=1070); Parents of 9-17 year olds who use the Internet (N=906)

Source: UKCGO project (Livingstone & Bober, 2005).

Figure 3: Which of these are you good at doing?



Base: All 9-19 year olds in UKCGO survey who use the Internet at least once a week (N=1257); Parents who have ever used the Internet (N=629).

Source: UKCGO project (Livingstone & Bober, 2004a, 2004b)

Table 2: Four styles of engagement with online opportunities and risks

Four styles of engagement with online opportunities and risks		
Teens with low online skills	<i>Low risk novices</i>	<i>Inexperienced risk takers</i>
	Younger, more girls, lower SES	Older, boys, lower SES
	Low child/parent skills	Low child/parent skills
	Few opportunities, few risks	Few opportunities, high risks
	High parental regulation	Low parental regulation
Teens with high online skills	<i>All-round experts</i>	<i>Skilled risk takers</i>
	Older, boys, higher SES	More boys, higher SES
	High parent/ child skills	High child/lower parent skills
	High opportunities, high risks	Av-high opportunities and risks
	Mixed parental regulation	High parental regulation

Base: Cluster analyses of all 9-19 year olds in UKCGO survey who use the Internet at least once a week (N=1257)

Source: UKCGO project (Livingstone et al., 2005)