Internet literacy among children and young people : findings from the UK Children Go Online project

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Findings from the *UK Children Go Online* project

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Executive summary

Within an overall focus on media literacy, the present report examines the internet literacy of children and young people aged 9-19, based on the UKCGO survey findings.

We examine the relations among the three main dimensions of media or internet literacy (access, understanding and creation), showing how developing online expertise increases online opportunities and, it turns out, also increases online risks. We also ask what difference parental regulation of children's internet use makes, revealing a more complex picture than often assumed.

Specific findings and recommendations, related to our guiding questions, are as follows:

1 Are children and young people becoming internet literate? (see p. 8)

- The findings suggest a fairly **confident generation**, with children and young people claiming greater online self-efficacy and skills than do their parents.
- It seems that 'access' to the internet is not as simple as turning on the computer and clicking on 'Google'. **A range of skills, some more complex than others, is required to access the range of online facilities.**
- These skills are variably, and **unequally**, distributed across the population, with age, gender and socio-economic status all associated with differences in literacy.
- Instead of beginners being more **trusting** of online contents, it seems that the more expert (i.e. more skilled in finding their way to material they feel is reliable, checking information across several sites) are more trusting of online contents. Developing skills in critical understanding thus opens the way to greater access to online opportunities.

2 What forms of formal or informal support and guidance are they receiving in developing internet literacy? (see p. 10)

- Of those in full time education, most children and young people have received some lessons on how to use the internet. Yet nearly one third report having received no lessons at all on using the internet. **The youngest (9-11 years) and oldest (18-19 years) are less likely to have had specific guidance on safety, searching and website reliability.**
- Whereas adults may rely on self-teaching, local 'experts' and work place experience, for children and young people, it is teachers and parents who are the primary sources of learning online skills. **Internet literacy initiatives are more likely to be effective if mediated by parents and teachers** than online or through other resources.

3 What opportunities and risks do children and young people experience online? How is this influenced by demographics and internet literacy? (see p. 12)

- Young people experience some breadth of online opportunities (such as interactivity, civic, peer-to-peer, commercial/careers and others), but there are many they miss out on. **There is much scope to guide and encourage young people to increase the depth and breadth of their online opportunities.**
- This is particularly important since access to the diverse offerings of the internet is uneven. Take up of online opportunities is a matter of age and socio-economic status. Further, one opportunity leads to another in a virtuous circle of online experiences, so the benefit of enhancing online opportunities is magnified.
- The breadth of risks encountered by weekly internet users represents a minority of risks asked about in the survey (here divided into porn by accident, violent content by accident, porn/violence on purpose, privacy and contact risks). So, while young people experience some online risks, there are many that, individually, they do not encounter. Still, **the findings provide ample justification for seeking to reduce risky encounters online.**
- Boys, middle class and older children all experience a greater breadth of risks. As with opportunities, it seems that one risk leads to another.
- Path analysis suggests that young people with home access who have spent more years online are likely to use the internet more often, spend more time online per day and have greater online skills/self-efficacy. Demographic variables also make a difference.
- The **older** children get, the more time they spend online, the more skilled they become at using the internet and the more opportunities and risks they experience.
- Further, **middle class** children experience more opportunities online (over and above

them having more home access), but SES does not directly influence risky experiences.

- The effects of age and SES particularly influence the take up of 'serious' opportunities (those desired for children by adults). All three demographic variables make more difference to encounters with risky content than they do to privacy or contact risks.
- **Boys** experience more risks (but not more opportunities) than girls (as a direct effect, in addition to the indirect increase in risks from boys having been online for longer).
- Overall, **children and young people's level of online skills (though not self-efficacy) has a direct influence on the breadth of online opportunities and risks**, in addition to the effects of demographics, access and use.
- This suggests that **it is worth making educational and/or other interventions to increase children and young people's level of online skills** (and the time they spend online, this in turn being associated with an increase in skill level) in order to broaden the opportunities they take up on the internet.
- There is a strong, positive association between opportunities and risks. This points up the dilemma that parents and regulators face. **Increasing opportunities increases the risks. Restricting children and young people's internet use reduces not only the risks but also their opportunities**. Online opportunities, and online safety, bear a cost.
- As for print literacy or other skills (social skills, practical skills), an increase in skills cannot ensure that the activities this enables are socially approved ones. Learning to read, or to make friends, may result in approved reading or approved friends, or quite the contrary. Similarly, online skills (and internet literacy conceived more broadly) enables children and young people to take up new online opportunities and, thereby, encounter more risks also, whether purposely or inadvertently.

4 How do parents regulate children's internet use, and does it work? (see p. 17)

- In regulating their children's internet use, parents implement two main types of rules: those to protect the child's privacy and those that restrict their participation in peer-to-peer activities, the former being more common.
- Parents also implement two main types of monitoring: supportive practices and covert checking up; the former are more common.
- In implementing parental regulation, the age of the child is the key demographic factor that influences parents. Beyond this, there is **no simple direct relationship between implementing more or less parental regulation and the opportunities or risks that children encounter on the internet.**
- **Parental rules and practices indirectly influence children's opportunities and risks if, and only if, they increase children's online expertise.** Even then, the effect is to increase both opportunities and risks, not to increase opportunities while reducing risks.
- Detailed scrutiny of the findings suggests that implementing peer-to-peer restrictions limits the number of both opportunities and risks that children and young people encounter. On the other hand, increasing parental supportive practices increases the opportunities (and skills) but is unrelated to the number of risks.
- **The recommendation to parents would be to increase these supportive activities** (asking the child what they are doing online, keeping an eye on the screen, helping them online, staying in the same room and going online together) in order to increase children and young people's online skills and opportunities. This may not reduce online risks, however, and also has implications for children's online privacy from their parents.
- Parental checking up and privacy restrictions appear to have little effect on either opportunities or risks (and may even lead children to rebel against such practices).
- The finding that those who tell their children they must not give out personal information online are just as likely to have children who do this as those who lack this rule should give us pause. Possibly, simple bans are ineffective, and children take little notice. But it could be that the rule itself is confusing or hard to apply, since in many online contexts personal information is specifically requested. **It is problematic that the design of many reputable websites requires users to register and provide personal information.**
- The importance of parental rules being recognised by the child (for young teens especially) is significant since, for example, most parents say they have implemented privacy rules. It seems that **the key issue is not whether the parent has such a rule but whether their child has understood and accepted the importance of this rule.**[1]

5 Do children and young people adopt different styles of engagement with the internet, balancing opportunities and risks in different ways? (see p. 22)

- Since children and young people grow up in diverse circumstances, they respond in varied ways to the arrival of the internet in their lives. Among 12-17 year olds, we identified two groups relatively low in online expertise ('low risk novices' and 'inexperienced risk takers') and two who are relatively skilled ('skilled risk takers' and 'all-round experts').

- The **'inexperienced risk takers'** merit concern. On the internet, they tend to seek problematic content on purpose and take few opportunities other than exchanging information with others. They seem little bothered by online violence and show an interest in online porn. Their low online expertise seems to put them at even greater risk than the 'all-round experts' (who, despite taking more risks, are more skilled, well-supported and benefit from a broader range of opportunities). Since their parents also have the lowest level of online expertise, we **recommend that these young people, and indeed their parents, are targeted by schools to increase their internet literacy.**

- By contrast, the **'all-round experts'** are (older) teens with high online expertise, and they take the most advantage of the opportunities that the internet offers. They seem to have learned to avoid sites with problematic content, partly because they dislike it. Though, because they take up the most opportunities, they also most frequently come upon problematic content by accident. There seems to be little that one can provide by way of literacy training for these young people to increase their opportunities or reduce their risks except to **maintain current levels of internet literacy guidance.**

- The general effectiveness, and continued importance, of such guidance (safety campaigns etc) is evidenced from the UKCGO survey finding that three quarters of 9-19 year olds (74%) are aware of some internet safety campaign or have heard or read a news story that made them think the internet can be dangerous.[2]

- The **'skilled risk takers'** – who are the biggest group – have a slightly different balance of opportunities and risks compared with the 'all-round experts', taking up fewer opportunities (though still more than the two low-skilled groups) and encountering more violent content by accident than the 'all-round experts'. Also unlike the 'all-round experts', whose parents are as highly skilled as they are, this group seems comparatively more skilled than their parents. In addressing the risks here, the issue seems to be more the sensation-seeking of some young teenage boys rather than that of internet literacy *per se.*

- The **'low risk novices'** occasion concern for a different reason. Their risky encounters are few and far between, but so too are their online benefits. As part of the digital divide discussion, we would draw policy makers attention to this inexpert group of young people. Both their online expertise and that of their parents is low, and they are not yet benefiting from the new opportunities of the internet. In this context, the highly regulated domestic environment that their parents are implementing is not as helpful as it might be, since it reduces both risks and opportunities and does not appear to result in increased online expertise. **For 'low risk novices' in particular, a more encouraging, less risk-averse approach is recommended.**

- It is of concern that even the most skilled young people cannot avoid online risks. This suggests **more attention is required in structuring the online environment itself so as to make it safer for young people (and all users)**. After all, internet literacy, like other forms of literacy, depends both on the skills and competencies of individuals and also on the production, design and distribution of internet-related technologies, contents and services. **Internet literacy initiatives, therefore, should pursue a two-pronged strategy, addressing both the skills and competences of young people and the nature and organisation of online environment with which they are engaged.**

- Recalling the polarisation in views of children and young people discussed at the outset, we conclude that **simple restrictions intended to protect children and young people from online risks are likely to limit their opportunities. Instead, more carefully targeted parental regulation may protect them from risks if it also empowers children by increasing their online expertise.**

- **We strongly recommend that parental advice is targeted differently for different households, different groups of children and parents with different levels of expertise.**

Why internet literacy?

With the growing importance of media, information and communications in society, many questions arise regarding the skills and knowledge required by the public to engage with these effectively. In academic and policy circles, these skills and knowledge requirements are increasingly framed in terms of 'media literacy', a term which encompasses the new skills required for using the internet, mobile and computing technologies, information literacy more broadly and the more familiar interpretation of broadcast and other media contents.[3]

The growing prominence of the internet poses a set of particular challenges for its users, requiring the rapid development and continual updating of a range of skills and competences, from the most basic to the highly sophisticated. Yet little is yet known of the nature or distribution of these skills and competences in the UK or elsewhere.

What is internet literacy?

Following the Communications Act 2003, Ofcom has defined 'media literacy' as "the ability to access, understand and create communications in a variety of forms". Others follow various, often overlapping or related definitions in order to ask some key questions: what are the literacies required for today's communication and information environment? Are they singular or multiple? Are they an extension of, or a radical break with, past traditions of knowledge and learning? What are the barriers and how should media literacy be enhanced?

Key to this definitional debate is the recognition that many skills and competencies – from the most obvious and basic to the highly subtle and complex – are needed to engage with today's media and information environment. Hence, a broad approach is crucial. This approach to media literacy encompasses 'internet literacy' as follows:

- *Access*. Internet literacy is required to access both hardware and online contents and services, and to regulate the conditions of access.
- *Understanding*. Internet literacy is crucial for effective, discerning and critical evaluation of information and opportunities online.
- *Creation*. Internet literacy permits the user to become an active producer as well as a receiver of content, enabling interactivity and participation online.

Each dimension of literacy supports the others. Across many domains – not only leisure but also education, work, relationships, health and civic participation – internet literacy (and media literacy more generally) is increasingly important. Its absence may contribute to social exclusion and inequality.

Focus on children and young people

Broadly speaking, interest in children and young people's use of the internet (and other media) oscillates between two opposing assumptions:

- In one view, children are seen as vulnerable, undergoing a crucial but fragile process of cognitive and social development to which the media pose risks by introducing potential harms, necessitating in consequence a range of protective strategies on the part of parents, educators and regulators.
- Questions of internet literacy here include naïve or risky access to online contents and contacts, difficulties in evaluating the resources accessed and sending ill-advised or problematic messages. Children and parents must, increasingly, be equipped to manage and control the meanings and networks in which they participate.
- In the other view, children are seen as competent and creative agents in their own right whose sophisticated, 'media-savvy' skills tend to be underestimated by the adults around them, even to exceed the skills of the adults responsible for them, with the consequence that society may fail to provide a sufficiently stimulating environment for them.
- Questions of internet literacy here include the benefits of going online (and the problems of exclusion from the internet), the key skills of online communication, expression and participation, together with the expertise to locate and evaluate online resources. Children and young people should be able to make informed choices, exercise their rights to participation and so become effective and creative actors in the online environment.

The *UK Children Go Online* project

The *UK Children Go Online* (UKCGO) project began with a series of focus group discussions and then conducted a national survey of 1,511 9-19 year olds around the UK, together with their parents, in order to examine young people's internet use in detail. Details of the project's design, sampling, methodology and published reports can be found the Appendix.

The project's findings show that in January-March 2004, three quarters of households with children in the UK had domestic internet access, and 98% of 9-19 year olds had used the internet – 92% at school, 75% at home and 64% elsewhere (Livingstone and Bober, 2004). These figures are much higher than the equivalent figures for the adult population: in the UK, 58% of adults aged 16+ had used the internet by February 2004 (ONS, 2004). Children and young people are, therefore, 'ahead' in the internet adoption curve. Further, the UKCGO project has identified considerable variation in the nature, purpose and sophistication of internet use across the population of 9-19 year olds in the UK.

Report aims

This report steers a course between the above polarised views of children and young people in order to ask whether, and in what ways, variation in online experiences (more opportunities or risks, a broader or narrower range of activities) depends on internet literacy. Specifically, we ask:

1 Are children and young people becoming internet literate? Which skills and competences that make up internet literacy are children and young people developing? Are there differences or inequalities here (by gender, class, age)?

2 What forms of formal or informal support and guidance are they receiving in developing internet literacy? What barriers or difficulties are they encountering?

3 What opportunities and risks do children and young people experience online? How is this influenced by demographics and internet literacy? Particularly, do more skilled or literate users take more opportunities and fewer risks? Do naïve users, or those with less watchful parents, have more risky encounters?

4 How do parents regulate children's internet use, and does it work? What difference does parents' internet experience and skills make in regulating children's online activities? Particularly, do more skilled parents, or parents of more skilled children, regulate domestic internet use differently?

5 Do children and young people adopt different styles of engagement with the internet, balancing opportunities and risks in different ways? If so, are some groups of young people more at risk than others?

Developing expertise

In our qualitative research, children and young people showed a certain glee in claiming considerable expertise, describing themselves as 'the internet generation', the experts online, especially by comparison with their parents (Livingstone and Bober, 2003). When we pursued this in the interviews, a more nuanced picture emerged, with children and young people admitting to a range of difficulties in using the internet.

"I think in comparison to my parents and loads of the older generation I know, I do know more. But I think there are a lot of people that know a lot more than me… A lot of my friends know a lot… And I learn from them." (Lorie, 17, from Essex)

"I'm probably the expert in my house, but not that big because my dad's got a thing about fiddling with the computer… so he's starting to catch up with me." (Steve, 17, from Manchester)

"Doing research, it's is easier with books than on the internet – but maybe it's quicker because there's so much on the internet. What you want to find is really hard to find. With books it's a lot easier. I can't really use the internet for studying." (Abdul, 17, from Essex)

Adding to this picture through a survey is not straightforward, for the measurement of developing expertise is difficult, especially outside an educational setting. Focusing in from the broad questions of media or internet literacy to the development of specific expertise, the research literature either measures 'self-efficacy' (a self-reported global assessment of one's skill level, strongly influenced by self-confidence), and/or it measures a series of specific online skills (which, though also self-report measures, may be more accurate about concrete skills).

Both self-efficacy and skills have been found in the literature to influence internet use (Livingstone et al, 2005). The UKCGO survey adopted both approaches to measuring online expertise.

Internet self-efficacy.[4] The UKCGO survey found that over half (56%) of the children and young people who use the internet at least weekly consider themselves 'average' in terms of their online skills, though one third (32%) consider themselves 'advanced'.

- Slightly more boys (35%) than girls (28%) consider themselves 'advanced', suggesting greater levels of confidence and, perhaps, skill among boys. The age differences are more strongly marked, with judgements of self-efficacy rising sharply with age. Those who claim either beginner or expert status vary little by demographic variables.
- These findings suggest a fairly confident generation. Young people claim greater online self-efficacy than do their parents (37% consider themselves 'advanced' or 'expert' vs. 15% of parents), and for each specific skill asked about, they claim greater expertise than do parents (Livingstone and Bober, 2004).

Online skills.[5] Which kinds of skills do children and young people have in mind when they describe themselves as good at using the internet?

- Finding information is the key skill associated with the internet and is one in which most (87%) are confident.
- Two in five claim to know how to send an instant message (44%), fix a problem on their computer (40%) or set up an email account (39%), and one in three know how to download music (34%).
- Less than a fifth can set up a filter (18%) or remove a virus from their computer (18%).
- In general, boys are more skilled than girls. While girls are more likely to know how to send instant/text messages, boys are more equipped for almost all other activities, the biggest differences being in knowing how to download music (42% vs. 25%), get rid of a virus (22% vs. 13%) and solve a problem on the computer (44% vs. 35%).
- The number of skills increases with age (especially in sending instant/text messages and fixing computer problems) although the oldest group (18-19) claims fewer skills than the 16 to 17 year olds.
- Higher social grade also corresponds to a greater number of skills, with more middle class children claiming greater competence across the range of skills.[6]
- Overall, online skills are strongly correlated with self-efficacy. Of the seven skills we asked about, 'experts' have an average of 4.5 skills, 'advanced' users have 3.9, 'average' users have 2.2, and 'beginners' claim only one of the seven skills.
- These findings show that 'access' to the internet is not as simple as turning on the computer and clicking on 'Google'. A range of skills is involved in accessing the different

online facilities, and these are variably, and unequally, distributed across the population.

Searching. Given the popularity of search engines, the most-visited websites among 71% of 9-19 year olds who go online at least weekly, the UKCGO survey asked about strategies for and outcomes of internet searches.

- Only 22% of 9-19 year olds who go online at least weekly say they always find what they are looking for. The majority (68%) usually find the information they need, 9% say they can't always find it, and 1% say they often cannot find information relevant to their needs.
- While searching, the majority (41%) claim only to look at the first ten sites on the list, but an almost equal proportion (37%) say they compare information across several sites to make sure it is reliable, and one in five (19%) check when a site was last updated.
- One in five (18%) ask for help when they can't find something, and one in three (32%) bookmark or add a good site to their 'Favourites'.
- Older children, those from a middle class background and those who judge themselves more expert tend to have better searching skills (looking beyond the first ten sites, using bookmarks, checking information across sites). Girls, younger children and the less expert are more likely to ask for help.

Trust and critical literacy. How do young people evaluate the information they find?

- The UKCGO survey found that four in ten (38%) pupils aged 9-19 say that they trust most of the information on the internet, half (49%) think that some of the information can be trusted, and one in ten (10%) are sceptical about much of the information online.
- Young people who judge themselves beginners in using the internet are more distrustful towards internet content than expert users.
- It is not, then, that the beginners are more naïve and therefore more trusting. Rather, it seems that the experts are more skilled in finding their way to material they feel they can trust, for example, by checking information across several sites. Beginners lack searching and critical skills and so are more distrustful of online content.
- The 'critical understanding' dimension of internet literacy is linked, therefore, to the access dimension. Interestingly also, the more expert are more likely to say that they have been taught how to decide if information is reliable, this informing their more trusting approach to the internet.

Formal and informal learning

Children and young people are clearly gaining internet literacy, albeit unevenly and unequally. In our qualitative research, many described the learning process as largely haphazard and unsupported (Livingstone and Bober, 2003).

"I don't find it hard to use a computer because I got into it quickly. You learn quick because it's a very fun thing to do, to log on to the computer and do whatever you want." (Amir, 15, from London)

"I don't think you can teach anyone how to use it. You sort of just have to try yourself." (Claire, 15, from Essex)

"Yeah, I think it's better to do like trial and error because you can like learn from mistakes, and you can find new places and stuff, for different sorts of things." (Kim, 15, from Essex)

The survey reveals the degree of formal and informal support provided across the population.

Educational support. Of those in full time education (N=1,326), most children and young people have received some lessons on how to use the internet: 23% report that they have received 'a lot', 28% 'some' and 19% 'just one or two lessons'.

- However, nearly one third (30%) report having received no lessons at all on using the internet, this including more teenagers than younger children. Only 19% of 9-11 year olds say they have had no lessons in how to use the internet, compared with 26% of 12-15 year olds, 45% of 16-17 year olds and 51% of 18-19 year olds in full time education.
- Not surprisingly, 69% of non-users claim to have had no lessons; yet 36% of daily users also report no lessons in internet use.

What is taught? Among 9-19 year olds who go online at least once a week:

- Two thirds say they have received lessons on how to stay safe on the internet (69%). More girls than boys say they have received safety guidance.
- Two thirds have been taught how to search for information effectively using search engines (69%). However, only one in three have been

taught how to decide if the information they find online is reliable and to be trusted (33%).

- When asked generally whether they have received lessons on using the internet, the youngest group is most likely to say 'yes'. However, when asked specifically about lessons on safety, searching or reliability, the youngest group claims the fewest lessons.
- So, while 9-11 year olds are being taught how to go online in very general terms, the 12-15 year olds are most likely to have received specific guidance on safety (77% 12-15 vs. 66% 9-11) and searching (74% teenagers vs. 59% 9-11). The 18-19 year olds also claim fewer lessons, appearing to be a cohort that has missed out to some degree on the recent incorporation of the internet into the curriculum.

Informal support. Who has helped them most to use the internet? Among 9-19 year olds who use the internet at least once a week, most say a teacher (66%), followed by a parent (44%), friend (33%) and sibling (16%).

- Formal support appears fairly equitable across socio-economic status (SES) and gender, except that girls (75%) claim more lessons in internet safety than boys 63%, and middle class pupils claim more guidance on searching (74% AB vs. 62% DE).
- Informal support may be more stratified. While on average, 44% have been helped by parents in learning how to use the internet, this is much more the case for middle class than working class children (59% AB vs. 28% DE). Perhaps in consequence, working class children are more likely to identify a teacher as helpful (74% DE vs. 59% AB; 66% overall).
- One third (33%) have been guided by friends (especially among older teens) or siblings 16%. Just a few have taught themselves (4%), followed an online course (3%) or been guided by another relative (1%).
- The findings suggest that, whereas for adults self-teaching, local 'experts' and work place experience are all important, for children and young people, teachers and parents are the primary sources of learning internet literacy.

Patterns of online opportunities and risks

Internet literacy is not of intrinsic value. Rather, as noted at the outset, its value depends on its purpose - on how it affects the ways in which the internet is used. Many hopes are held regarding the opportunities that the internet can offer to young people, and many fears are expressed for how the internet may introduce particular risks to young people (Livingstone, 2001).

It is widely assumed that those with greater online expertise take up more opportunities and avoid more risks, and vice versa. Are these assumptions supported by the evidence? Below we examine the opportunities and risks that children and young people encounter on the internet.[7]

We then examine the link between online expertise (here measured by self-efficacy and skills) and the opportunities and risks encountered, locating this in the context of demographic differences across the population.

Online opportunities

The UKCGO survey asked 9-19 year olds (or 12-19 year olds for starred questions*) who go online at least once a week what they do on the internet. In all, 30 different opportunities were included. Using a factor analysis, these were grouped statistically into five distinct categories of online opportunity. These are shown in Table A along with the percentages of young people who take up in each opportunity.

There are strong correlations across the opportunities. Those young people who take up an opportunity from one category are also likely to take up others in the same category. It seems that one opportunity leads to another in a virtuous circle of online experiences.

However, there is also a considerable variation in take-up of opportunity as the percentages show, with some opportunities being taken up by the majority of young people but that of many others being fairly low. Access to the diverse offerings of the internet is, once again, uneven.

Table A: Categories of online opportunity (0-30)

Interactivity opportunities (0-8)

send an email/SMS to a site (25%)
vote for something online (22%)
use message boards (17%)
send pictures/stories to a site (17%)
access others' personal webpages* (14%)
offer advice to others online (9%)
fill in an online form about yourself (8%)
sign a petition online* (8%)

Peer-to-peer opportunities (0-6)

send/receive emails (72%)
play games online (70%)
send/receive instant messages (55%)
download music (45%)
watch/download video clips* (30%)
use chat rooms (21%)

Commercial and career opportunities (0-4)

look for info on careers/further education* (44%)
look for events listings online* (44%)
look for products/ buy something online* (40%)
plan a trip online* (13%)

Civic opportunities (0-5)

visit site for a charity/organisation that helps people* (27%)
visit site about protecting environment* (22%)
visit government website* (21%)
visit site about human/gay/children' rights* (18%)
sign a petition online* (8%, also grouped with the interactivity opportunities)

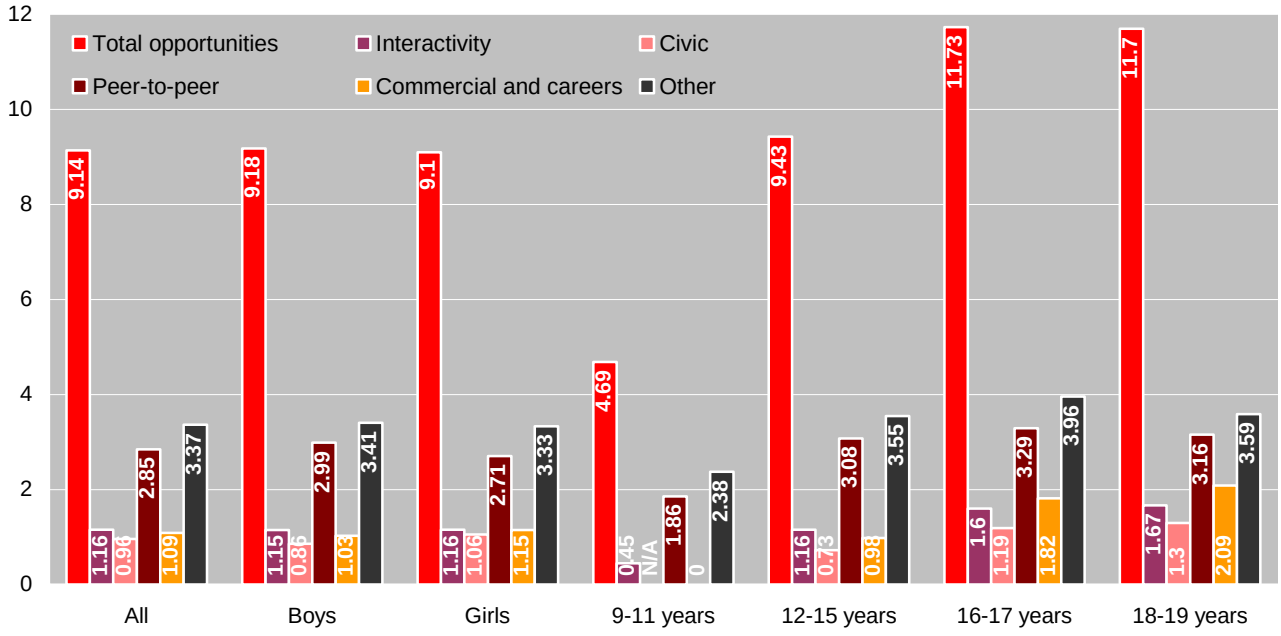
Other opportunities (0-8)

use internet to do work for school/college (90%)
use it to get information for other things (94%)
do a quiz online (44%)
use the internet for someone else (35%)
try to set up a webpage (34%)
look for info on computing/web design* (23%)
read the news online* (26%)
visit a site about improving conditions at school/college/work* (14%)

In Figures 1a & 1b, we have summed the number of opportunities taken by each respondent, producing a measure of breadth of opportunities (not, importantly, a measure of frequency of opportunities).

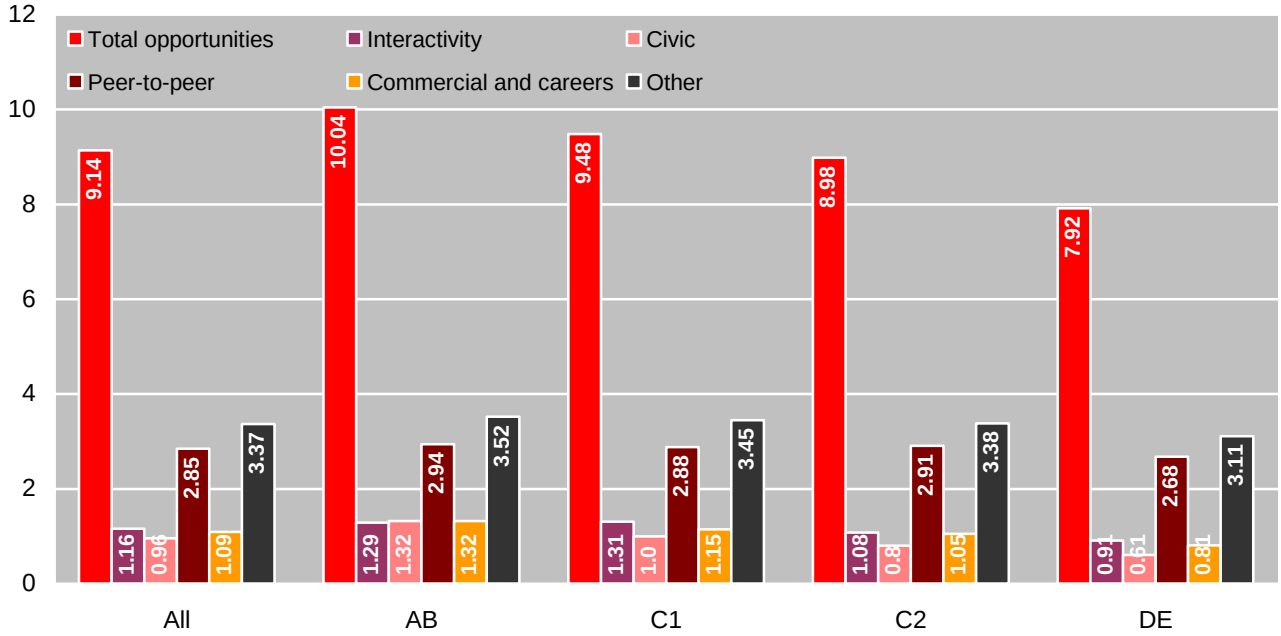
- Overall, the average number of opportunities taken up by all weekly internet users is nine out of 30, suggesting that young people experience a fair breadth of online activities but also that there are many activities available that they do not engage with.
- On average, children and young people take up only one each of the eight interactivity opportunities, the five civic opportunities and the four commercial and careers-related opportunities. They take up an average of three of the six peer-to-peer opportunities, along with around three of the eight other opportunities asked in the survey.
- Boys take up slightly more peer-to-peer opportunities, and girls take up slightly more civic opportunities though, overall, the gender differences are modest (see Figure 1a).
- Age makes much more of a difference, with children and young people taking up more opportunities the older they get (though note that the 9-11 year olds were asked about 16 opportunities only; see Figure 1a).
- The number of opportunities also declines significantly with lower socio-economic status, with the biggest difference in civic opportunities (see Figure 1b).

Figure 1a: Average number of online opportunities, by gender and age



Base: 9-19 year olds who use the internet at least once a week (N=1,257).
Note 1: Between boys and girls, the differences in peer-to-peer and civic opportunities are statistically significant at least at p<0.05.
Note 2: All differences between the age groups are statistically significant at least at p<0.05.[8]

Figure 1b: Average number of online opportunities, by SES



Base: 9-19 year olds who use the internet at least once a week (N=1,257).
Note: All differences except those for peer- to-peer opportunities are statistically significant at least at p<0.05.

Online risks

In making the internet widely available to children and young people, society hopes that they will take up the opportunities while avoiding the risks. As with opportunities, a range of online risks have aroused public concern. The UKCGO survey asked 9-19 year olds who go online at least once a week about 15 risky activities. Based on a factor analysis, these were grouped into five distinct categories. These are shown in Table B along with the percentages of young people who engage in each risky behaviour.

There are strong correlations across the various risks with one risk leading to another, so that those who encounter a risk from one category are likely to encounter others from the same category. Overall, 9 in 10 (88%) said they had experienced at least on of the 15 risks, and one third (33%) had experienced five or more risks.

It has to be noted that these risk assessments are based on the children's survey. Parents claim that their children have experienced substantially lower levels of online risk, possibly because they are unaware of their children's activities or possibly because they define risk differently (Livingstone and Bober, 2004).

Table B: Categories of online risk (0-15)

Viewed pornographic online content by accident (0-3)

seen a pop-up advert for a porn site (38%)
ended up on a porn site by accident (36%)
received porn junk mail by email/IM (25%, also grouped with viewing content on purpose)

Viewed violent or racist online content by accident (0-2)

ended up on a site showing violent images by accident (22%)
ended up on a racist site by accident (9%)

Privacy risks (0-2)

would give out personal information to win a prize online (70%)
have given out personal information to someone they met online (46%)

Viewed pornographic, violent or racist online content on purpose (0-6)

received porn junk mail by email or instant messaging (25%)
visited porn sites on purpose (10%)
been sent pornographic images from someone they know (9%)
been sent pornographic images from someone they met online (2%)
visited websites showing violent images on purpose (12%)
visited racist sites on purpose (2%)

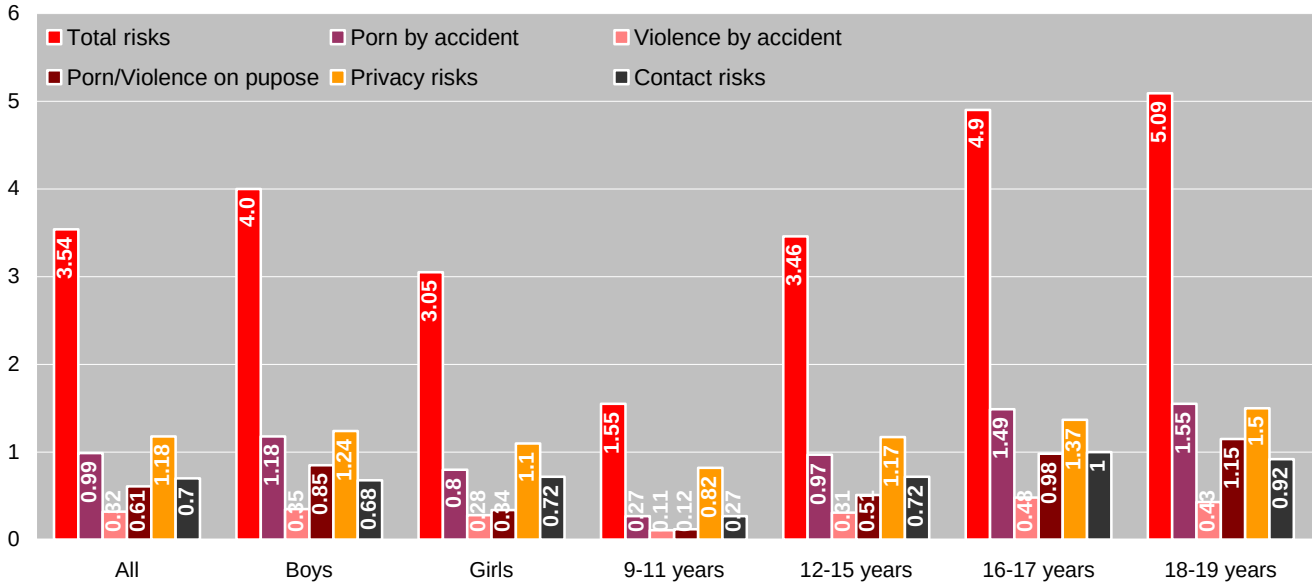
Contact risks (0-3)

have been bullied online or by SMS (33%)
know someone they only talk to online (33%)
have met up face-to-face with someone they first met online (8%)

In Figures 2a & 2b, we have summed the number of risks taken by each respondent, producing a measure of breadth of risks (not, importantly, a measure of frequency of risks).

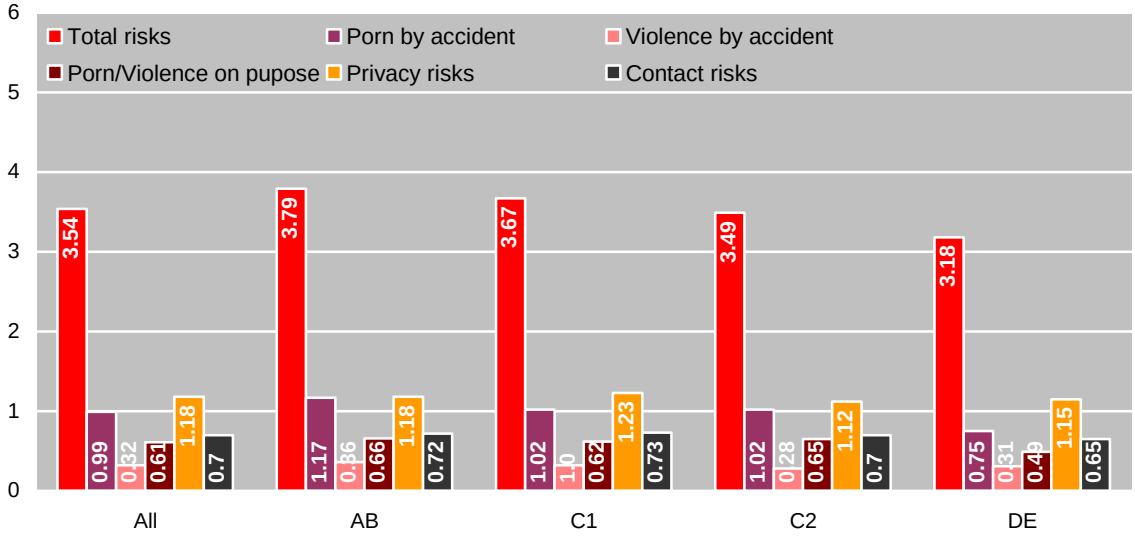
- Overall, the average number of risks encountered by weekly internet users is nearly four out of 15. This suggests that young people experience some risks, but that there are many they do not, individually, encounter.
- Figures 2a & 2b show considerable variation in risks encountered, with some risks being fairly commonplace - privacy risks especially but also inadvertent encounters with porn.[9]
- The breadth (rather than frequency) of risks is fairly low, however. In each category except for privacy risks, children and young people have encountered less than one kind of risk (though this may have been a repeated encounter).
- As Figure 2a shows, boys experience more risks than girls. They seek out more pornographic and violent/racist sites on purpose and are also more likely to come across online porn by accident.
- All categories of risk increase with age. Privacy risk is the most common category of risk among 9-15 year olds, whereas among 16-19 year olds, encountering porn by accident is the most common.
- Risky encounters also increase with socio-economic status. Middle class children (ABC1) experience a greater breadth of risks than do those from a working class background (C2DE). Accidental encounters with pornography online are more common among middle class children and young people (see Figure 2b).

Figure 2a: Average number of online risks, by gender and age



Base: 9-19 year olds who use the internet at least once a week (N=1,257).
Note: All differences between boys and girls are significant at least at p<0.05 except for those related to contact risks. All differences between age groups are statistically significant at least at p<0.05.

Figure 2b: Average number of online risks, by SES



Base: 9-19 year olds who use the internet at least once a week (N=1,257).
Note: The differences for total risks and for visiting porn sites by accident are statistically significant at least at p<0.05.

Does online expertise influence opportunities and risks?

We have seen that different patterns of internet use (opportunities and risks, broader or narrower uses) are associated with demographic variables (age, gender and socio-economic status). Perhaps these demographics are all we need to explain how young people use the internet? However, given the importance of access to the internet at home, this may be plausibly added into the picture, as should measures of time spent on the internet since, as our previous reports show, both access and use are known to affect online experiences.

Matters may be even more complex, with online expertise (self-efficacy and skills) having an independent influence on online opportunities and risks, over and above its association with demographic factors. If established, this finding would justify policy initiatives focused on increasing expertise. For example, we hypothesised earlier that, in addition to the effect of demographic variables, online expertise might increase take-up of online opportunities and reduce risky encounters.

By conducting a path analysis,[10] we examined the direct and indirect statistical relations among the demographic variables, measures of online expertise and use in order to ask which young people encounter more or fewer online opportunities and risks and why. For a given set of variables among which the correlations have been measured, path analysis allows the researcher to propose a causal model which can then be tested against the data.

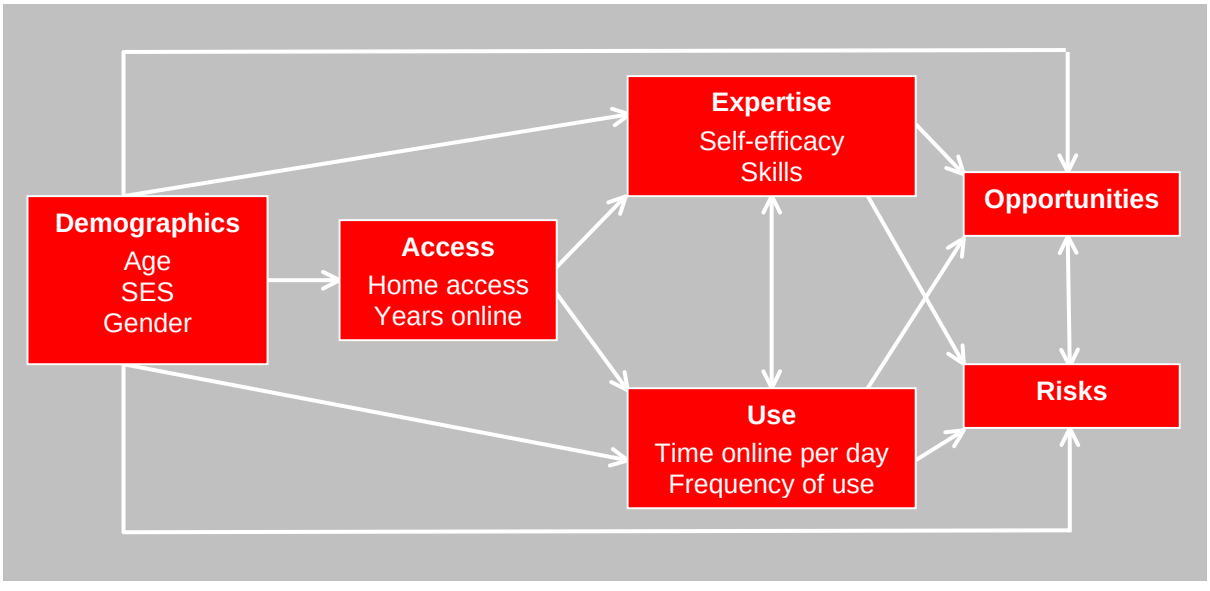
Neither expertise nor use can be assumed to precede the other, nor can opportunities or risks. Hence, a linear causal path would suggest the following chain of influences:

Demographics → Access → Expertise + Use → Opportunities / Risks

However, expertise and use may play different roles in the chain of influences, and the explanation for opportunities and risks may be different. Hence, our linear path must be redrawn to permit more complex paths, both direct (shown by single arrows), indirect (shown by two arrows linked by an intervening factor) and in either direction (shown by double-sided arrows).

In Figure 3, all statistically significant paths between groups of variables are shown.[11] We can say, among other things, that young people from a higher socio-economic background are more likely to have home access, that having home access leads to higher levels of online expertise and more internet use, and this in turn leads children and young people to experience both more opportunities and more risks online.

Figure 3: Relationships between demographics, internet access, online expertise and use, opportunities and risks



Base: all those between 12 and 17 years old (N=879).

The key findings from the path analysis are summarised below. Note that not all variables influence each other to an equal extent and that some influence each other only indirectly through other variables.

Demographic variables

- **Age** directly influences a whole range of variables – online skills, average time online per day, opportunities and risks. So, the older children get, the more time they spend online, the more skilled they become at using the internet and the more opportunities and risks they experience.
- **Socio-economic status** influences internet access, with middle class children more likely to have home access, but it does not directly influence internet use. It has a direct influence on how many opportunities are taken, with middle class children experiencing more opportunities (in addition to them having more home access), but it does not influence how many risks are taken.
- **Gender** exerts a direct influence on the number of years that young people have been online, with boys having been online for longer. It also influences the breadth of risks they come across, with boys experiencing more risks than girls (again, this is a direct effect, additional to the indirect effect of increased risks from having been online for longer). Gender is not directly related, however, to the range of opportunities experienced.

Internet access

- Both access variables (**home access**[12] and **years online**[13]) are related to internet use and expertise. Thus, young people who have home access and have spent more years online use the internet more often, spend more time online per day and have a higher level of online skills and self-efficacy.
- Home access and years online do not directly influence opportunities and risks young people experience online. However, they do have an indirect effect through intermediating variables such as frequency of internet use and time spent online.

Online expertise and use

- The internet use variables (**time online per day**[14] and **frequency of use**[15]) and one of the expertise variables (**online skills**) all directly influence both opportunities and risks. However, **self-efficacy** is not directly related to either online risks or opportunities: how expert children and young people consider themselves to be, or how confident they are online, seems less related to the breadth of their actual opportunities and risks than is the number of specific skills they can lay claim to.
- Hence, those with greater skills, as well as those who spend longer online each day and/or use the internet more frequently, experience a greater breadth of risks and opportunities on the internet.
- Thus, both the earlier descriptive data and the path analysis suggest that, left to themselves, boys, older teens and more middle class children will experience a broader range of online opportunities and risks than girls, younger children and those from a working class background, especially if they have had home access for a number of years. However, the path analysis reveals an additional and direct effect of expertise and use on the breadth of opportunities and risks experienced, suggesting that intervention targeted at increasing skills will also increase online opportunities.

Opportunities and risks

- It is important to note, however, that the findings reveal a strong, positive relationship between the breadth of opportunities and breadth of risks experienced. In short, the more opportunities children and young people take online, the more risks they are also likely to come across and vice versa.
- It does not seem, therefore, that those who are more focused on the opportunities are more likely to avoid the risks, nor that those with greater expertise have found a way to avoid the risks as they pursue the opportunities. Rather, taking up online opportunities is proving, for many children and young people, an experience associated with some degree of risk.

Explaining different opportunities and risks

Not all opportunities online are equivalent, nor are all risks. Since opportunities and risks fall into distinct categories, different factors may explain them. The path analysis was therefore repeated separately for the five categories of opportunity (see Table A) and for the five categories of risk (see Table B). This suggests some refinements to our interpretation of the earlier path analysis, as follows (see Tables C & D).[16]

- The demographic variables of age and socio-economic status make more difference in particular to the 'more serious' or worthy opportunities available to young people.
- More time spent on the internet (in terms of frequency or minutes per day) makes a difference particularly to the take up of peer-to-peer and interactivity opportunities.[17]
- Greater online expertise, especially specific skills, increases the take up of all categories of online opportunity with, in addition, a relationship between self-efficacy and interactivity opportunities. Doubtless also, taking up more opportunities feeds back to increase online expertise.
- The demographic variables (age, gender, socio-economic status) make more difference to encounters with unwelcome or inappropriate content than to privacy risks or, except for the influence of gender, contact risks (here girls encounter less pornography but take greater contact risks).
- As before, greater online skills (though not self-efficacy) increases the breadth of risks experienced across all categories. Similarly, more time per day online (though not greater frequency of use) increases the range of risks encountered.
- For both risks and opportunities, the more one category of risk or opportunity respectively is experienced, the more likely is experience of the others.

Table C: Influences on different categories of opportunity

Older children	→	More civic opportunities More commercial and career opportunities More peer-to-peer opportunities
Higher socio-economic background	→	More commercial and career opportunities More civic opportunities
Girls	→	More civic opportunities
More time online per day	→	More interactivity opportunities More peer-to-peer opportunities
Higher frequency of use	→	More peer-to-peer opportunities
Higher levels of self-efficacy	→	More interactivity opportunities
Higher levels of online skills	→	More of all opportunities
More civic opportunities	→	More commercial and career opportunities
More interactivity opportunities	→	More of all other categories of opportunity

Table D: Influences on different categories of risk

Older children	→	More porn/violence on purpose More porn by accident
Higher socio-economic background	→	More porn by accident
Girls	→	Less porn/violence on purpose Less porn by accident More contact risks
More time online per day	→	More porn by accident More privacy risks More contact risks
Higher levels of online skills	→	More of all risks
More risks of one category	→	More of all other categories of risk

Do parental rules and practices make a difference?

There are grounds for concern in the finding that greater access, use and expertise on the internet not only increase children and young people's take up of online opportunities but they also increase the risks they encounter on the internet. As the internet has become more widespread in UK homes, considerable efforts have been made by government, regulators, industry, educators and, not least, parents to guide children and young people's internet use so that they avoid the risks.

"We have different names to log on to the computer, it's not just one. You can set up your own thing. So my dad's got hardly any [restrictions] on it. I've got, you know, quite a bit. But my brothers, they've blocked out most of the stuff, so they can only go on very limited sites." (Toby, 13, from Derbyshire)

"My dad… he doesn't let me go on the internet very often because we had an incident one day where my sister… she was on MSN, and someone sent her something through. And it was actually like – it was like porn. So my dad saw it, and he was like very angry, so he doesn't let us use MSN now." (Hazel, 17, from Essex)

Surely such efforts make a difference? We cannot here evaluate whether, overall, children and young people are facing fewer risks than they might if such efforts had not been made. But we can ask whether those children whose parents implement more domestic regulation encounter fewer risks than those children in whose homes there is less domestic regulation.[18]

Parental rules and practices in UK homes

We asked parents of 9-17 year olds (who, according to their parents, use the internet at least once a week and have home access) how they regulate their children's use of the internet in terms of rules and practices (see Table E).

- Based on a factor analysis of the parents' replies, we grouped parental rules for internet use (total range 0-8) into two categories of restriction: those seeking to protect the child's privacy and those that restrict their participation in peer-to-peer activities. Privacy restrictions are more common.
- We grouped the practices (total range 0-7) into two categories of monitoring: supportive practices (including overt parental monitoring and co-use between parent and child) and checking up (a covert monitoring of children's internet use). The supportive practices are more common, though both approaches are used.[19]

Table E shows the four categories of parental rules and practices along with the percentages of parents who employ them. There are strong correlations across the various rules and practices. Those parents who report a rule or practice from one category are also likely to employ others from the same category.

Table E: Categories of parental rules and practices (0-15)

Privacy restrictions (0-5) Tell child not to…

give out personal information online (86%)
buy anything online (77%)
use chat rooms (62%)
fill out online forms or quizzes (57%)
download things (24%)

Peer-to-peer restrictions (0-4) Tell child not to…

use instant messaging (24%)
download things (24%, also grouped with privacy restrictions)
play games online (10%)
use email (11%)

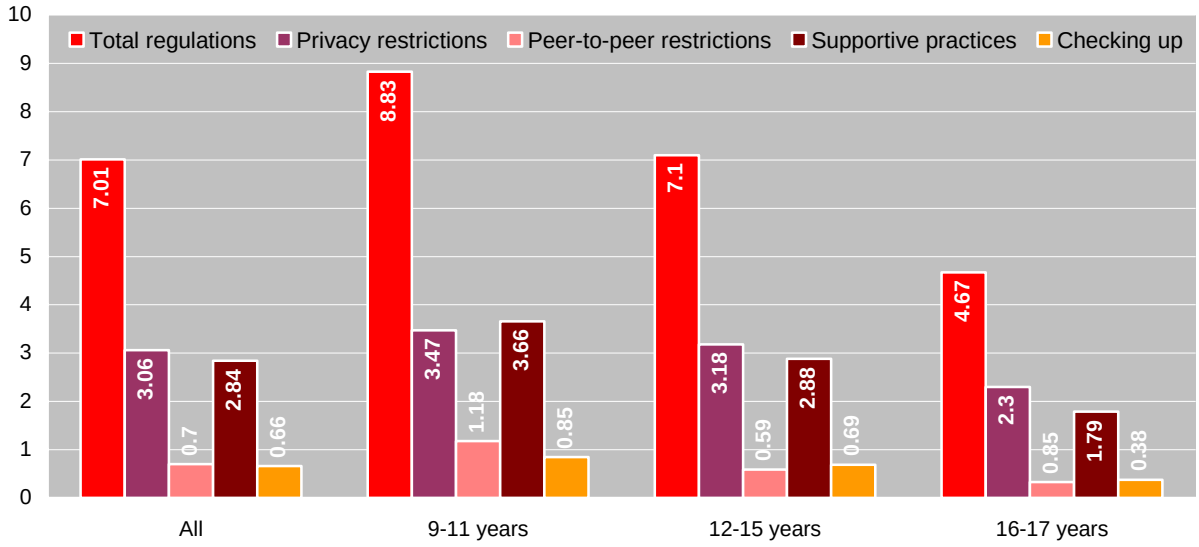
Supportive practices (overt monitoring or co-using) (0-5)

ask child what he/she is doing or did on the internet (81%)
keep an eye on the screen when child is on the internet (63%)
help child when he/she is on the internet (57%)
make sure they stay in the same room when child is using the internet (50%)
sit with child and go online together (32%)

Checking up (covert monitoring) (0-2)

check the computer later to see what child visited (41%)
check the messages in child's email account (25%)

Figure 4: Average number of parental rules and practices, by child demographics



Base: Parents of 9-17 year olds who, according to their parents, go online at least once a week and use the internet at home (N=630)
Note: Age differences are statistically significant at least at p<0.05.

Figure 4 shows that, among parents of 9-17 year olds (who, according to their parents, use the internet at least once a week and have home access), the age of the child is the key factor for domestic regulation:

- Unsurprisingly, parents both restrict and monitor younger children more than older teens. Hence, there are far fewer restrictions on 16-17 year olds compared with those for the 9-15 year olds. Similarly, supportive practices are reduced steadily as children become older.
- There are no differences in parental rules and practices between boys and girls: in relation to the internet, parents report equivalent treatment of sons and daughters.[20] There are also no differences by socio-economic status. The absence of these differences is, perhaps, noteworthy insofar as it is popularly believed that middle class parents, and parents of girls, are more restrictive.

The effects of parental regulation on online risks and opportunities

Within age/gender/SES groupings, however, parents vary in domestic regulation of their children's internet use. What difference does it make if they implement more or less regulation? To answer this question, we added parental rules and practices into the path analysis model (see Figure 3) in order to test whether they have a direct or indirect effect on children and young people's opportunities and risks online. The new analysis showed that:

- There is no simple direct relationship between implementing more or less parental regulation and the opportunities or risks that children encounter on the internet.
- However, parental regulation is related to the child's online skills, as well as to their frequency of internet use and time spent online per day. Children whose parents implement more rules and practices are better at using the internet, use it more often and spend more time online per day.[21] This, in turn, leads them to experience more opportunities and also more risks online.
- Although, in general, younger children are subject to more regulation and have lower expertise than teens, within each age group it seems that those who are subject to more regulation use the internet more and gain more in skills, this in turn resulting in increased opportunities and risks.
- Parental regulation is thus indirectly, and positively, related to both risks and opportunities because – or to the extent that – a more regulated domestic context of use seems to encourage internet literacy.

Let us look more closely at the **different categories of parental rules and practices**:

- Within the range of parental rules and practices, it is mainly peer-to-peer restrictions and supportive practices which have a direct influence on the risks and opportunities children and young people experience online.
- Specifically, implementing peer-to-peer restrictions limits the number of both opportunities and risks that children and young people encounter (because they reduce frequency and time spent online and are associated with lower skills).
- By contrast, supportive practices increase the opportunities but are unrelated to the number of risks.
- The amount of checking up and privacy restrictions appears to have little effect on either opportunities (including the interactivity and peer-to-peer activities that seem to engender privacy risks) or risks (including privacy risks).[22] For example, those who tell their children that they must not give out personal information online are just as likely to have children who do this as those who lack this rule, suggesting that such rules are largely ineffective.

So, parental regulation overall is only associated with increased opportunities and risks if mediated by increased online expertise. However, the picture is complicated because children of different ages vary greatly in use, expertise and activities online and because parents implement different strategies of domestic regulation depending on their child's age.

A closer look at the findings for each age group suggests that, in general, the older the child, the weaker the effect of parental regulation. Hence, to the extent that parental regulation is effective at all, it appears more effective for younger children. For younger children especially, it seems that parental regulation has a positive influence on online skills and, therefore, on opportunities. In the following account of age differences, we distinguish rules as reported by the parent from rules as perceived by the child.

- **9-11 year olds:** Privacy risks are the main risks affected by parental regulation. The lower the number of peer-to-peer restrictions according to both the parent and the child (and the lower the privacy restrictions according to the child), the higher the number of privacy risks encountered by the child.
- This suggests that for the youngest age group, increased parental regulation might reduce the incidence of online risks. Furthermore, for this age group and for 12-15 year olds, supportive parental practices have a positive influence on taking up online opportunities.
- **12-15 year olds:** Those who have lower peer-to-peer restrictions (as perceived by the child) have come across more porn and violence on purpose and porn by accident. In short, imposing peer-to-peer restrictions reduces teens' contact with undesirable material (but it also reduces their opportunities and it is also associated with lower skills).
- Interestingly, if teens believe that their parents check up on them covertly (irrespective of whether their parents report such a practice), then they encounter more (not less) contact risks. This might suggests that these teens react against the suspicion that their parents check up on them (perhaps because they know themselves to be taking risks). Further, if these teens perceive more restrictions imposed on them, this might lead them to feel less confident online (i.e. reduced self-efficacy), though one may judge that reduced confidence increases caution.
- The lower the privacy and peer-to-peer restrictions as perceived by the child, the greater the privacy risks taken (though again, note that there is no link between parents' reporting of restrictions and the child's online risks). One might therefore urge parents to ensure that teens have themselves understood that the restrictions apply (and are justified).
- Still, parents must weigh the risks and opportunities for their child, for increasing peer-to-peer restrictions also restricts peer-to-peer opportunities and some commercial/careers-related opportunities. Clearly, sustaining parental regulation as children move into early adolescence is not easy for either parents or teens.
- **16-17 year olds:** For this age group, parental regulation only has a weak effect on the number and range of opportunities and risks taken. However, those young people who perceive their parents to have imposed privacy restrictions are less likely to encounter porn online by accident or on purpose.[23]

Styles of engagement with online opportunities and risks

We have seen that a range of factors influences which children and young people take up particular online opportunities and risks. We end by seeking a more complex characterisation of young internet users. Using the data from the key variables analysed in this report (skills, self-efficacy, risks and opportunities), and leaving out the 9-11 and 18-19 year olds groups, we conducted a cluster analysis of 12-17 who go online at least weekly and use the internet at home.[24]

This identified four distinct groups (or 'ideal types') of young internet users, each with a different style of engagement with, or balance between, online opportunities and risks. Among these teenagers, we identified two groups who are relatively low in online expertise and two who are relatively skilled:

- Of the two less expert groups, one takes few risks ('low risk novices') and one encounters more risks ('inexperienced risk takers').
- Of the two skilled groups, one is relatively risk-seeking ('skilled risk takers') and one balances opportunities and risks, encountering a high degree of each ('all-round experts').

The characteristics of these teenage groups, all of whom have home access and use the internet at least weekly, are shown in Table F. They can be described as follows:

- **'Low risk novices'** tend to be younger (14-15 years on average), more often working class girls, with parents who lack confidence in relation to the internet. Perhaps in consequence, or perhaps in response to their children's disgust when encountering porn inadvertently, these parents regulate their children's internet use very closely. This keeps exposure to risks low – they encounter almost no risks. But it also restricts the opportunities these children take up (except some commercial/career opportunities), resulting in overall low internet literacy. Indeed, these teens are the least skilled of all the groups: they are the least likely to bookmark sites or to check results across several sites when searching for something online.
- **'Inexperienced risk takers'** tend to be older (16 years on average), working class boys, with parents low in internet literacy. The teens also are low in online skills and have even lower self-efficacy. Their take up of online opportunities is relatively high only for peer-to-peer activities. But they are high risks takers, being the most likely both to seek porn on purpose and to come across it by accident. They are also fairly high on contact risks and average on privacy risks (though not so high on risk-taking as either of the two skilled groups below). Strikingly, they are the least regulated by their parents, especially in terms of restrictions and supportive parental practices though their parents are the most likely out of all groups to check up on them covertly. Interestingly too, they claim the greatest tolerance of, even interest in, online pornography and violent content. Regarding their web searching skills, they are not likely to check results across several sites and only bookmark some of the useful sites they come across.
- **'Skilled risk takers'** are more often younger (15-16 years on average), middle class boys. These are highly skilled and confident teens with parents who have rather lower online expertise. They take up a fair number of opportunities online. However, despite being subject to a fair-to-high amount of parental regulation, they encounter a considerable number of risks. Particularly, they have come across more violence by accident than others and are high on privacy and contact risks. Interestingly, they react strongly – with disgust – to inappropriate content when they come across it. Regarding their web searching skills, they are the most likely of all four groups to check results across several sites, but not many of these young people bookmark sites.
- **'All-round experts'** are older (16 years on average), more often boys and, particularly, from middle class households. These teens have the highest degree of online expertise, as do their parents. They take up far more opportunities than the other groups but also encounter a high degree of risks, especially related to privacy and contact (less so in relation to porn and violence, though they still come across these by accident). They express the lowest interest in porn and dislike of online violence. Their parents appear to rely more on trust as a style of regulation, being high on parental support and low on checking up. Regarding their web searching skills, these young people are the most likely to bookmark useful sites and, most of them check results across several sites.

Table F: Characteristics of the four groups of online users

'Low risk novices'	
Demographics	Youngest group (14-15 years on average), slightly more girls, working class (lowest social grade)
Expertise	Lowest child self-efficacy and skills, low parent self-efficacy, average parent skills
Opportunities	Lowest total opportunity score, lowest scores across all categories of opportunity except commercial and career opportunities
Risks	Lowest total risk score, lowest scores across all categories of risk
Regulation	Highest privacy and peer-to-peer restrictions, also high scores on supportive practices and checking up
Searching	Least likely to bookmark and check across sites
Reaction to porn/violence	'Disgusted' by online porn, 'not bothered' by online violence
'Inexperienced risk takers'	
Demographics	Oldest group (16 years on average), mostly boys, working class
Expertise	Low child self-efficacy, average child skills, lowest parent self-efficacy and skills
Opportunities	Low total opportunity score, lowest commercial and career opportunities, low interactivity, civic and other opportunities but high peer-to-peer opportunities
Risks	Highest total risk score, highest porn and violence on purpose and porn by accident, low violence by accident, average privacy and contact risks
Regulation	Lowest scores across all categories of parental regulation, except the highest score for checking up
Searching	Bookmarking average, checking across several sites low
Reaction to porn/violence	'Interest' online porn, 'not bothered' by online violence
'Skilled risk takers'	
Demographics	Third oldest group (15-16 years on average), more boys, middle class
Expertise	High child self-efficacy and skills, low parent self efficacy, average parent skills
Opportunities	Average to high scores across all categories of opportunity
Risks	Third highest total risk score, average porn/violence on purpose, average porn by accident, highest violence by accident, high privacy and contact risks
Regulation	Highest supportive practices, high checking up, high privacy restrictions, average peer-to-peer restrictions
Searching	Bookmarking average, most likely to check across several sites
Reaction to porn/violence	'Disgusted' by online porn, 'disgusted' by online violence
'All-round experts'	
Demographics	Similar age to 'inexperienced risk takers' (16 years on average), more boys, middle class (highest social grade)
Expertise	Highest child and parent self-efficacy and skills
Opportunities	Highest total opportunity score, highest score across all categories of opportunity
Risks	Highest total risk score, average porn and violence on purpose, high porn and violence by accident, highest privacy and contact risks
Regulation	High supportive practices, lowest checking up, average privacy and peer-to-peer restrictions
Searching	Most likely to bookmark sites, checking across several sites high
Reaction to porn/violence	Lowest 'interest' online porn, 'dislike' of online violence

Base: 12-17 year olds who go online at least weekly and use the internet at home (N=572)

Appendix: The *UK Children Go Online* research project

UK Children Go Online (UKCGO) seeks to offer a rigorous and timely investigation of 9-19 year olds' use of the internet (see www.children-go-online.net). The authors thank the funders (the Economic and Social Research Council under the 'e-Society' Programme, www.london.edu/e-society, AOL, BSC, Childnet-International, Citizens Online, ITC and Ofcom), the Advisory Panel and the Children's Online Panel, and all those who took part in the UKCGO survey.

Aims

The project balances an assessment of two areas of risk with two areas of opportunity in order to contribute to academic and policy frameworks on children and young people's internet use:

1. Access, inequalities and the digital divide
2. Undesirable forms of content and contact
3. Education, informal learning and literacy
4. Communication, identity and participation

Methods

The UKCGO research design consists of 3 phases (April 2003 - April 2005):

1. Qualitative research: 14 focus group interviews with 9-19 year olds around the UK (summer 2003), nine family visits and in-home observations (2003/4), and a children's online panel.
2. Quantitative research: A major national, in-home, 40-minute face to face survey of 1,511 9-19 year olds and 906 parents of the 9-17 year olds, using Random Location sampling across the UK. The fieldwork, conducted via multi-media computer-assisted personal interviewing (CAPI) with children, and a paper questionnaire completed by their parents, took place between 12 January and 7 March 2004 and was carried out by BMRB International.
3. Qualitative research: This followed up findings from the survey with 13 focus group interviews and observations in autumn 2004, plus a reconvening of the children's online panel.

UKCGO children's survey sample

In this report, percentages have been weighted in accordance with population statistics; sample sizes are reported as unweighted. The sample characteristics (N=1511) are as follows:

Age	9-11 years (N=380), 12-15 years (N=605), 16-17 years (N=274), 18-19 years (N=251)
Gender	Boys (N=668), Girls (N=842)
SES	AB (N=264), C1 (N=418), C2 (N=407), DE (N=422)
Region	England (N=1,232), Wales (N=69), Scotland (N=161), Northern Ireland (N=48)
Ethnicity	White (N=1,333), Non-white (N=169)

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Endnotes

[1] Note that Livingstone and Bober (2004) found considerable discrepancies between parents and children in perceptions of internet-related rules in the home.

[2] In an open-ended question in the UKCGO survey, we asked children to describe a recent campaign or news story they had come across: one fifth (18%) referred spontaneously to the danger of paedophiles, 13% to chat room dangers, 9% to people getting into dangerous situations after having met someone online, 8% to the government's 'think U know' campaign (www.thinkuknow.co.uk), 6% to recent abduction stories, 6% to stranger danger online in general, 6% to the advice not to give out personal details online, 5% to viruses, hacking, spam and credit card fraud and 4% to the danger associated with people pretending to be someone else in chat rooms.

[3] See Buckingham (2005), Livingstone (2004), Livingstone et al (2005) and Potter (2004).

[4] Self-efficacy (or self-rated internet expertise) was assessed on a four-point scale. We asked respondents whether they think of themselves as beginner (7%), average (56%), advanced (32%) or expert (5%) in using the internet.

[5] Online skills: We asked respondents which of the following they are good at – finding information on the internet (87%), sending an instant message (44%), fixing a problem on your computer (40%), setting up an email account (39%), downloading music (34%), setting up a filter (18%), removing a virus from your computer (18%).

[6] Socio-economic status is measured according to the standard market research categories: A – Upper middle class (Higher managerial administrative or professional occupations, top level civil servants), B – Middle class (Intermediate managerial administrative or professional people, senior officers in local government and civil service), C1 – Lower middle class (Supervisory or clerical and junior managerial administrative or professional occupations), C2 – Skilled working class (Skilled manual workers), D – Working class (Semi and unskilled manual workers), E – Those at lowest levels of subsistence (All those entirely dependent on the State long term, casual workers, those without regular income).

[7] Note that the characterisation of online activities as either opportunities or risks is not cut-and-dried, though we believe the items included in the survey capture the public's general understanding of the opportunities and risks that the internet may introduce to young people.

[8] Since the youngest age group was asked about fewer opportunities (scores out of 16, not 30), differences for the three teenage groups were re-tested separately and found to be significant with the exception of peer-to-peer interactions.

[9] Overall, 57% of 9-19 year old weekly users have come across pornographic material online (Livingstone and Bober, 2004).

[10] Path analysis is used to assess the relative importance of various direct and indirect causal paths to the dependent variable(s). The statistical program AMOS5 was used to build the causal model discussed in this report.

[11] However, there may not always be a link between all variables of those groups that are linked by arrows (see text that follows). In cases where there are no arrows between groups (e.g. between access variables and opportunities/risks), there is no direct relationship.

[12] Home access: We asked respondents whether they have the following technologies at home and whether these have internet access: computer (87%; 71% with internet access), digital TV (62%; 17% with internet access), games console (82%; 8% with internet access), (81%; 38% with internet access). In total, 74% of 9-19 year olds have internet access at home.

[13] Years online: We asked respondents how old they were when they first started using the internet and subtracted this from their current age. Over half (51%) of 9-19 year olds have been online between one and three years, 45% more than three years and only 2% less than one year.

[14] Average time online per day: We asked 9-19 year olds to estimate the time they spend online on a typical weekday and a typical weekend day. From this, a composite score was calculated for the average time spent online per day: none (8%), about ten minutes (19%), about half an hour (25%), about an hour (23%), between one and two hours (14%), between two and three hours (6%) or more than three hours (5%).

[15] Frequency of use: We asked respondents whether they use the internet several times a day (15%), about once a day (26%), a couple of times a week (32%), about once a week (10%), a couple of times a month (7%), about once a month (3%), less often (3%) or never (3%).

[16] Note that these tables only include the direct relationships between the explanatory variables and the outcome variables (specific risks and opportunities). The same indirect relationships as shown in Figure 3 still hold (e.g. home access influences online expertise and, through that, breadth of overall opportunities).

[17] A parallel finding is reported in Livingstone, Bober and Helsper (2004), where demographic factors are found to have a greater influence on civic participation online while use factors make more difference to the take up of interactivity.

[18] It is beyond the scope of this report to examine why parents regulate in different ways and to different extent.

[19] Although the children's survey (Livingstone and Bober, 2004) revealed rather lower percentages reporting the use of these rules and practices (i.e. either parents overestimate domestic regulation or children underestimate it), the patterning of rules and practices reported (based on factor analysis) was very similar for children's and parents' data.

[20] This absence of a gender difference is based on parental reports of rules and regulations at home. However, children themselves do report differences in parental regulation: girls say that their parents impose more peer-to-peer and privacy restrictions on them than do boys.

[21] Note that although the path model hypothesises causal relations among the variables, other possible models can also be hypothesised and tested. It is difficult in a cross-sectional study to determine which variable is cause and which is effect, particularly since it is likely that some of the variables feed back or mutually influence each other. Hence in this case, it could also be that parents provide more regulation and support to children who use the internet more and/or have greater skills.

[22] As for parental regulation in general, privacy restrictions are associated with greater frequency and time online, and with greater online skills.

[23] Perhaps there is an indirect relationship here in which parental restrictions for this age group are associated with increased online expertise which, again, leads to a greater uptake of opportunities and risks (as in Figure 3).

[24] A cluster analysis seeks to identify meaningfully homogenous subgroups of cases (here, individuals) in a population. For this cluster analysis, the furthest neighbour technique was used in SPSS 11.5.