

Towards a better internet for children

Sonia Livingstone, Kjartan Ólafsson, Brian O’Neill and Verónica Donoso

Summary

This report presents new findings and further analysis of the EU Kids Online 25 country survey. It also brings together our previously published findings relevant to European Commission Vice President Kroes’ CEO Coalition recent initiative to make the internet a better place for children.

New results show that, of nine different kinds of parental worries about their child, online risks – being contacted by strangers (33% parents) or seeing inappropriate content (32% parents) - rank 5th and 6th. Will the Coalition’s principles help manage online risk of harm, and so address parental concerns?

Our evidence supports recommendations about initiatives that industry can take under four of the five headings considered by the CEO Coalition.

Simple and robust reporting tools

13% of children who were upset by an online risk say they have used reporting tools, and two thirds of those who used them found them helpful.

Country differences are considerable: 35% of children who were bothered by an online risk have used reporting tools in Turkey, but just 2% of such children in Hungary.

Children are more likely to use reporting tools when upset online if they come from a poorer home, if they are a girl, if they experience psychological difficulties, or if they are more active online.

This suggests the tools meet a need and should be promoted more widely. Limited ease of use and effectiveness are likely to impede take-up.

Age-appropriate privacy settings

43% of 9-16 year old SNS users keep their profile private, 28% have it partially private and 26% have it public. Children who have their profile set to public are also more likely to display their phone number or address on their SNS profile.

More efforts are needed to promote the use of privacy settings and make them user-friendly.

Children are more likely to have a public profile if they cannot understand or manage the privacy settings, if they are a boy, if their parents have banned their SNS use, or if they experience psychological difficulties.

Wider use of content classification

14% of 9-16 year olds have seen sexual images on websites. This included 8% of 11-16 year olds who saw images of people having sex and/or genitals, and 2% who saw violent sexual images. 32% of all 9-16 year olds who had seen sexual images said they were upset by them.

Among 11-16 year olds upset by seeing online sexual images, 26% hoped the problem would just go away, 22% tried to fix it, 19% deleted unwelcome messages and 15% blocked the sender. Only 13% reported the problem online, though most of those found the result helpful.

21% of 11-16 year olds have seen potentially harmful user-generated content such as hate sites (12%), pro-anorexia sites (10%, rising to 19% of 14-16 year old girls) and self-harm sites (7%).

Those with more digital skills are more likely to encounter these content-related risks.

Wider availability and use of parental controls

One in three parents (33%) claims to filter their child’s internet use and one in four (27%) uses monitoring software. Overall, only a quarter of children (27%) and a third of parents think parents are effective in helping to keep children safe online.

Parents are more likely to use filtering if they are regular and/or confident users of the internet themselves, if they are worried about online risks to their child, or if their child is younger and/or less experienced in internet use.

Although it seems that the more filtering, the less online risk, this is because younger children encounter less risk since they use the internet less and are more subject to parental controls – and vice versa.

Making the internet better for kids

“This new Coalition should provide both children and parents with transparent and consistent protection tools to make the most of the online world”

Announcing a Coalition of CEOs of major internet companies on 1 December 2011, European Commission Vice President Neelie Kroes set in train the next crucial steps in the ongoing policy process to make the internet better for kids. On 2 May 2012,¹ she then announced a ‘new strategy for safer internet and better internet content for children and teenagers’, locating the Coalition process within a wider, rights-based approach to children’s better internet use.

The CEO Coalition focuses on five key ‘principles’ to be delivered by a self-regulated industry:²

- (1) **Simple and robust reporting tools:** easy-to-find and recognisable features on all devices to enable effective reporting and responses to content and contacts that seem harmful to kids;
- (2) **Age-appropriate privacy settings:** settings which take account of the needs of different age groups;
- (3) **Wider use of content classification:** to develop a generally valid approach to age-rating, which could be used across sectors and provide parents with understandable age categories;
- (4) **Wider availability and use of parental controls:** user-friendly tools actively promoted to achieve the widest possible take-up;
- (5) **Effective takedown of child abuse material:** to improve cooperation with law enforcement and hotlines, to take proactive steps to remove child sexual abuse material from the internet.

This report

To understand the conditions under which children encounter the risk of harm on the internet, EU Kids Online was funded by the Safer Internet Programme to support evidence-based policy making. We have surveyed 1000 children and their parents in each of 25 European countries – a total of 25,142 children aged 9-16. To inform the Coalition’s task, this report presents

¹<http://europa.eu/rapid/pressReleasesAction.do?reference=IP/12/445&format=HTML&aged=0&language=EN&guiLanguage=en>

²<http://europa.eu/rapid/pressReleasesAction.do?reference=IP/11/1485&format=HTML&aged=0&language=EN&guiLanguage=en>

new findings and analysis to help establish a baseline against which to track progress.³

Parental worries about the internet

To get a sense of how worried parents are about the internet, the EU Kids Online survey asked parents what of a range of worries really concerned them, and we included two internet-related items amongst the mix of possible concerns (see Table 1).

Table 1: What worries parents a lot about their child?

%	Age				All
	9-12		13-16		
	Boys	Girls	Boys	Girls	
How they are doing at school	53	51	54	48	51
Being injured on the roads	45	45	42	40	43
Being treated in a hurtful or nasty way by other children	40	43	29	31	35
Being a victim of crime	34	35	35	36	35
Being contacted by strangers on the internet	32	36	29	36	33
Seeing inappropriate material on the internet	34	35	30	30	32
Drinking too much alcohol/taking drugs	21	19	31	28	25
Getting into trouble with the police	20	18	25	19	20
Their sexual activities	14	15	16	20	16
None of these	20	21	20	22	21

QP214 Thinking about your child, which of these things, if any, do you worry about a lot? (*Multiple responses allowed*)

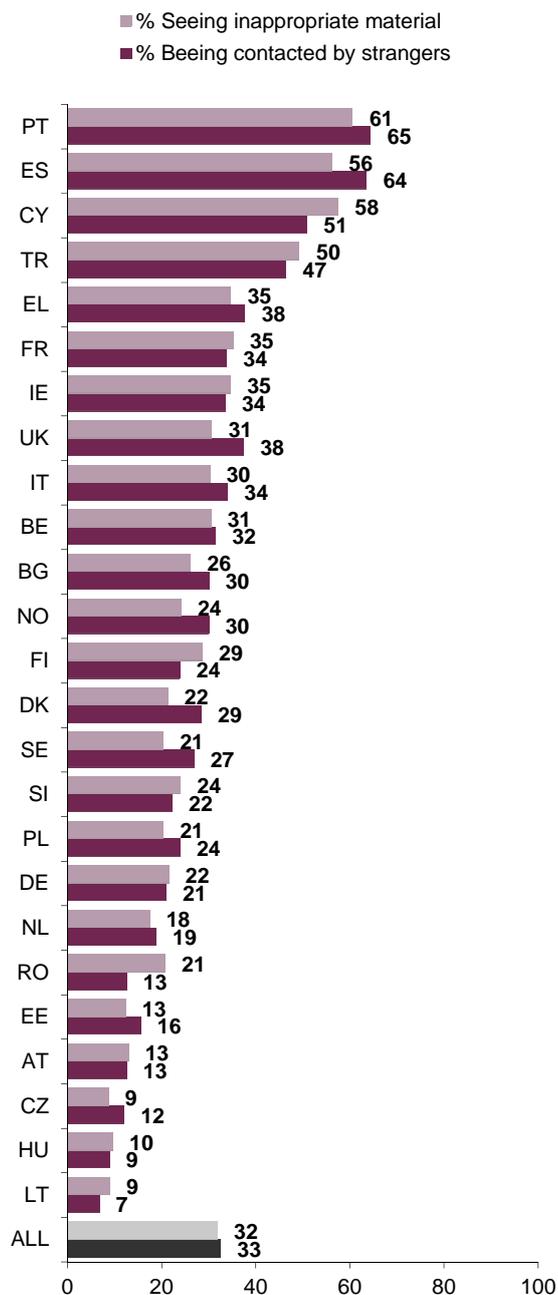
Base: Parents of children aged 9-16 who use the internet.

These new findings show that:

- Parents’ top worries concern school achievement, road accidents, bullying (on or offline) and crime
- **Online risks – being contacted by strangers or seeing inappropriate content – come fourth and fifth in the list of nine worries: one in three parents say they worry about these risks a lot.**
- Fewer worry about alcohol, drugs, getting into trouble with the police and sexual activities.⁴

³ We did not ask children about access to illegal content, for reasons of research ethics, so this report focuses on the first four principles.

Figure 1: What worries parents a lot about their child?



QP214 Thinking about your child, which of these things, if any, do you worry about a lot? (Multiple responses allowed)

Base: Parents of children aged 9-16 who use the internet.

Country codes: Austria (AT), Belgium (BE), Bulgaria (BG), Cyprus (CY) the Czech Republic (CZ), Denmark (DK), Estonia (EE), Finland (FI), France (FR), Germany (DE), Greece (EL), Hungary (HU), Ireland (IE), Italy (IT), Lithuania (LT), the Netherlands (NL), Norway (NO), Poland (PL), Portugal (PT), Romania (RO), Slovenia (SI), Spain (ES), Sweden (SE), Turkey (TR), the United Kingdom (UK).

⁴ Note that 33% of European 15 year olds, 11% of 13 year olds surveyed in 2005/6 said they had been really drunk twice or more in their life, and 18% of 15 year olds had tried cannabis. World Health Organization (2008), *Inequalities in young people's health*.

Country variation in parental worries is also noteworthy (Figure 1). Clearly, the Coalition process addresses a genuine concern among European parents.

Scoping the incidence of online risks

Are parents right to worry? We next review the incidence of various risks online as reported by European 9-16 year olds. As shown in Table 2, **four in ten European children have encountered one or more of risks that society worries about**. This suggests grounds for concern and a need for action to improve children's experiences.

Table 2: Online risks encountered by children

% who have	Age				All
	9-10	11-12	13-14	15-16	
Seen sexual images on websites*	5	8	16	25	14
Been sent nasty or hurtful messages on the internet*	3	5	6	8	6
Seen or received sexual messages on the internet*	n/a	7	13	22	15
Ever had contact on the internet with someone not met face-to-face before	13	20	32	46	30
Ever gone on to meet anyone face-to-face that first met on the internet	2	4	9	16	9
Come across one or more types of potentially harmful user-generated content*	n/a	12	22	29	21
Experienced one or more types of misuse of personal data*	n/a	7	10	11	9
Encountered one or more of the above	14	33	49	63	41
Acted in a nasty or hurtful way towards others on the internet*	1	2	3	5	3
Sent or posted a sexual message of any kind on the internet*	n/a	2	2	5	3
Done either of these	1	3	4	8	4

Note: For exact phrasing of questions see: Livingstone, S., Haddon, L., Görzig, A., and Ólafsson, K. (2011). *Risks and safety on the internet: The perspective of European children. Full Findings*. LSE, London: EU Kids Online. <http://eprints.lse.ac.uk/33731>

Base: All children who use the internet. *In the past 12 months.

Countries vary not only in parental anxieties but also in the reported incidence of risk.⁵ Since children encounter more risk in countries where the internet is more widely used and deeply embedded, our findings led us to propose a country classification as follows:

- 'Lower use, lower risk' countries (Austria, Belgium, France, Germany, Greece, Italy, Hungary)
- 'Lower use, some risk' countries (Ireland, Portugal, Spain, Turkey)
- 'Higher use, some risk' countries (Cyprus, Finland, the Netherlands, Poland, Slovenia, the UK)
- 'Higher use, higher risk' countries (Denmark, Norway, Sweden, and the 'new use, new risk' countries of Bulgaria, the Czech Republic, Estonia, Lithuania and Romania).

In some countries, it seems, urgent action is already required. In others, as use is expected to rise, pre-emptive action is required if risk is not to rise also.

Assessing online risk and harm

Note that exposure to sexual images or receiving hurtful messages is not necessarily harmful in itself. But such risks may contribute to a complex array of conditions which, depending on both the individual and the context, can contribute negatively to children's online experiences.

Risk refers to the *probability not certainty* of harm. Harm to a child arises where a risk is actualised in some way or other, and this is always contingent upon the specific context within which the risk occurs, including the characteristics of the child. The degree of negative impact on a child can range from negligible to severe depending on the individual and the context.

The survey shows that whether risks upset children varies by type of risk:

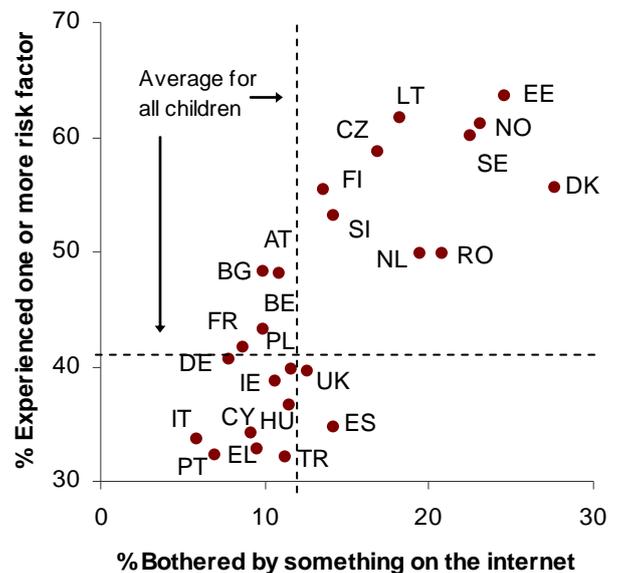
- One third of 9-16 year olds exposed to sexual images online were bothered or upset.
- One quarter of 11-16 year olds who received sexual messages online were bothered or upset.

⁵ For details, see our already published reports, as summarised in Livingstone, S., Haddon, L., Görzig, A., and Ólafsson (2011) *EU Kids Online Final Report*. <http://eprints.lse.ac.uk/39351/>

- Four in five of 9-16 year olds who received nasty or hurtful messages were fairly or very upset.
- 12% of 9-16 year olds who met an online contact offline were bothered or upset by the experience.
- Older teenagers are more likely to experience each risk, but younger children are more likely to find them upsetting when they do encounter them.⁶

The distinction between risk and harm is illustrated in Figure 2,⁷ showing levels of risk and harm reported by children in each country. Although less harm is reported than risk, these are positively related – the more risk, the more harm. The top left (higher risk/lower harm) and bottom right (lower risk/higher harm) quadrants are interesting. Arguably, countries in the top left have good resources to prevent risk resulting in harm, while countries in the bottom right may lack such resources, though risk is fairly low.

Figure 2: Children who have encountered online risks by those who were bothered or upset online, by country



⁶ Just 5% of 9-10 year olds, compared with 25% of 15-16 year olds, have seen sexual images online, but 56% of those 9-10 year olds were bothered by what they saw (vs. 24% of the 15-16 year olds). Also, younger children are more likely to be upset by sexual messages if they receive them; girls, too, are twice as bothered as boys by sexual messages. See Livingstone, S., Haddon, L., Görzig, A., and Ólafsson, K. (2011). *Risks and safety on the internet: The perspective of European children*.

⁷ Risk is measured as the percentage of children who encountered one or more of the seven risks in Table 2. Harm is the percentage of children who answered 'yes' to the question, "In the past 12 months, have you seen or experienced something on the internet that has bothered you in some way? For example, made you feel uncomfortable, upset, or feel that you shouldn't have seen it."

Measures designed to reduce risk can play a useful part in reducing the actual harm that children overall might suffer. But because risk is positively correlated with levels of online usage, simply seeking to reduce risks is also likely to reduce children's opportunities.

While recognising that measures to reduce specific risks have their place, it is also important to develop strategies to build children's resilience and to provide resources which help children to cope with or recover from the effects of harm.

Providing effective reporting tools, privacy settings, content classification and parental controls may contribute to reducing risk, reducing harm and/or ameliorating harm. Ideally, these outcomes would be achieved without limiting the benefits of using the internet.

Reporting tools

Key findings

When something upsets children online, do they find and use reporting tools? If so, are the tools effective in dealing with the problem?

The survey asked children who had been upset by different types of risks what they did next (Table 3).

- Only 13% of 9-16 year olds who were upset or bothered by an online risk used the reporting tools.
- 19% of those upset by sexual messages reported this problem online, as did 15% of those upset by sexual images, 10% of those upset by meeting an online contact offline, and 9% of those upset by bullying messages.

In short, use of reporting tools by children who are upset by something online is rather low. We cannot determine from the survey whether this is because there are no tools available or children find them difficult to locate or use;⁸ they may also prefer other coping strategies (e.g. to tell a parent or teacher).

⁸ Usability studies carried out with 12-17 year olds on social networking sites demonstrate that even though young users recognise the usefulness of reporting mechanisms, they face difficulties using them. Lack of user-friendly reporting mechanisms may discourage users from sending reports. Sinadow, H. (2011). *Usability tests with young people on safety settings of social networking sites*. European Commission, Safer Internet Programme, http://ec.europa.eu/information_society/activities/social_networking/docs/usability_report.pdf.

Table 3: Children who used reporting tools on the internet after being bothered or upset by a risk

% of children who have...	
Seen sexual images on websites*	14
<i>of those, the percentage who were bothered</i>	34
<i>of those bothered, the percentage who clicked a report abuse button</i>	15
Been sent nasty or hurtful messages on the internet*	6
<i>of those, the percentage who were fairly or very upset</i>	81
<i>of those upset, the percentage who clicked a report abuse button</i>	9
Seen or received sexual messages on the internet*	15
<i>of those, the percentage who were bothered</i>	27
<i>of those bothered, the percentage who clicked a report abuse button</i>	19
Ever gone on to meet anyone face-to-face that first met on the internet	9
<i>of those, the percentage who were bothered</i>	12
<i>of those bothered, the percentage who clicked a report abuse button</i>	10

Note: The question asked was, 'Did you do any of these things? I reported the problem (e.g. clicked on a 'report abuse' button, contact an internet advisor or 'Internet service provider (ISP)'.
Base: As described in the table. *In the past 12 months.

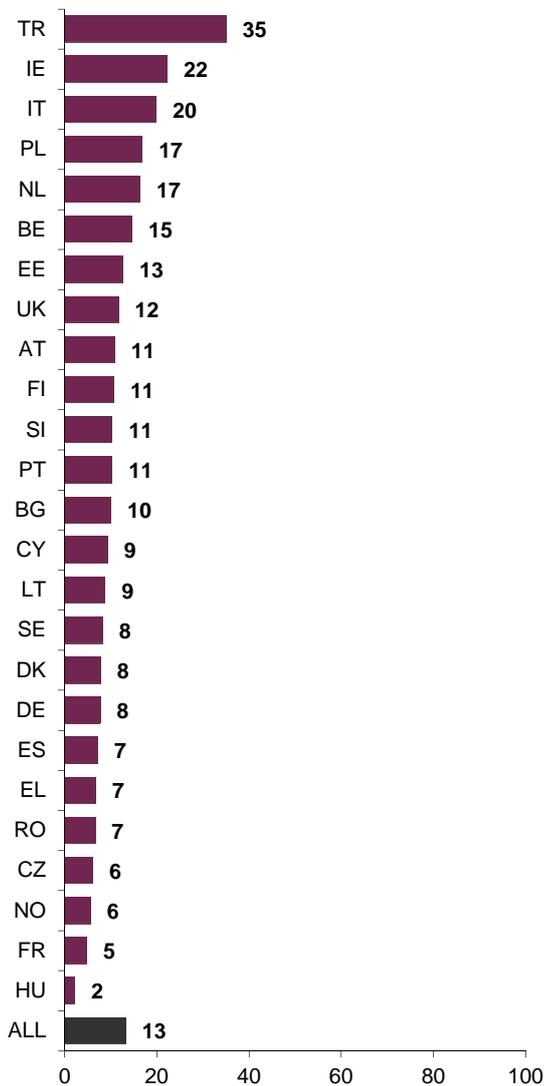
There are noteworthy country differences in use of reporting tools. These range from 35% of children who were bothered by an online risk in Turkey, down to just 2% of such children in Hungary (Figure 3).

These country differences cannot be easily attributed to the proportion of children upset in each country (this is similar in Hungary and Turkey, for example) or the level of internet use in each country overall.

The level of reporting in each country may reflect:

- The level of problems children encounter online
- The level of alternative resources to help children
- A conservative culture that makes telling parents or teachers about problems face to face too embarrassing (so that children turn to online sources when in difficulties).
- The effectiveness (or otherwise) of available reporting tools.

Figure 3: Children (%) who used reporting tools, among those bothered by any of four risks, by country



Base: All children who have been bothered by any of the four risks defined in Table 3.

Why do some use reporting tools and not others?

How people act on the internet depends on the simultaneous operation of multiple factors. To discover what leads only some children to use reporting tools when upset by an online risk, we used further statistical analysis (see Annex, Table 11 for the results of the logistic regression analysis).

This found that children are more likely to use reporting tools . . .

- If they live in a lower SES home (such children are 50-60% more likely to use reporting tools when

upset by online risks than children in middle and high SES homes).

- If they are girls (girls are 50% more likely than boys).
- The more they experience psychological difficulties (the likelihood increases by 67% for each additional point on the SDQ scale⁹).
- The wider the range of activities they do online; (the likelihood increases by 10% for each additional online activity children undertake).

It seems that reporting tools offer a particular benefit to girls, more vulnerable children, and those from poorer homes. If this is the case – perhaps because these children lack alternative resources – then extending the ease of use and the availability of such tools is highly desirable.

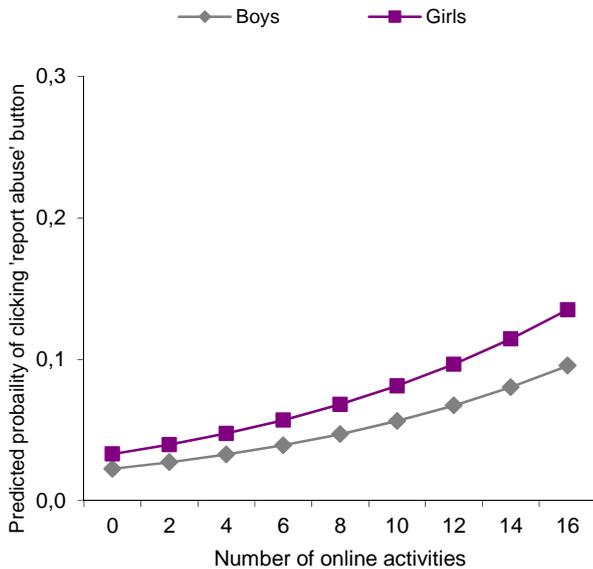
Of all these factors, only online activities can be directly affected by internet safety initiatives. The findings suggest that **the more widely and deeply children use the internet, the more they are likely to use reporting tools if upset.** Thus those less experienced in internet use should be specifically encouraged and enabled to use online tools, and these tools should be designed for ease of use by inexperienced internet users.

Further analysis shows that encouraging online activities as a means of supporting children's ability to seek help online helps girls especially (Figure 4). It also varies by country: if use of reporting tools is already high (e.g. Turkey) rather than low (e.g. Hungary), the chance of a child using such tools increases notably with more online activities (Figure 5).

⁹ The standardised Strengths and Difficulties Questionnaire (SDQ) measures children's psychological, emotion and social difficulties.

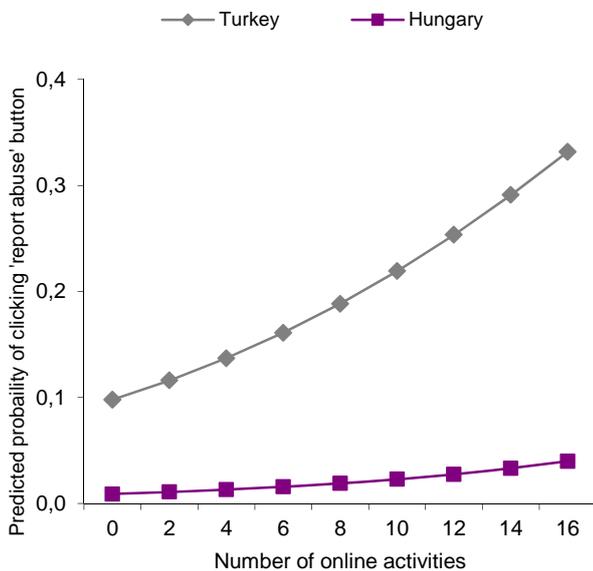
¹⁰ Other research has demonstrated that the assumed anonymous and non-threatening nature of computer-mediated forms of communication may be of specific importance for people who are shy, experience social anxiety, or are stigmatized; see Fukkink, R. and Hermanns, J. (2009). Counseling children at a helpline: chatting or calling. *Journal of Community Psychology*, 37 (8), 939-948. In particular, young people are reluctant to seek (face-to-face) professional help, suggesting that alternative/online forms of support are important especially for girls; see Andersson, K., Osvaldsson, K. (2011) Evaluation of BRIS' Internet based support contacts. Executive Summary. Linköping University, Sweden. http://www.bris.se/upload/Articles/BRIS_evaluation_of_webbased_se rv_exe_sum.pdf

Figure 4: Predicted probability* of using reporting tools as online activities increase, by gender



* For children aged 12 years, living in the UK, with a medium score on SDQ and average SES.

Figure 5: Predicted probability* of using reporting tools in Turkey and Hungary as online activities increase



* For boys aged 12 years, with a medium score on SDQ and average SES.

Does the use of reporting tools help resolve the problem experienced by children online? New analysis reveals that this depends on the type of risk encountered (see Table 4).¹¹

- Two thirds of children who reported content or conduct risks found the response helpful, though one third did not.
- Those reporting sexual images were a little more positive about the help received than those reporting conduct risks (sexting, cyber-bullying).¹²
- Those reporting problems resulting from contacts met online were generally dissatisfied with the results. As noted above, this may be because such reports reveal deeper problems that demand more tailored, multi-agency solutions.

Table 4: Children who found reporting tools helpful

% of those who used reporting tools who found it helpful, by type of online risk	%
Seen sexual images on websites	71 ^a
Have been sent nasty or hurtful messages on the internet	61 ^a
Seen or received sexual messages on the internet	64 ^a
Ever met anyone face-to-face that first met on the internet	28 ^b

Note: The question asked was, 'Did you do any of these things? I reported the problem (e.g. clicked on a 'report abuse' button, contact an internet advisor or 'Internet service provider (ISP)'. NB an 'internet advisor' may refer to an online helpline.

^a Margin of error ± 9% ^b Margin of error ± 21%

Base: All children who were bothered or upset after encountering online risks and who had responded by using reporting tools.

¹¹ A note of caution is needed here. Of 25,142 children surveyed, around 2,300 were bothered by encountering any of the four risks we asked about (sexual images, bullying, sexual messages and meeting new online contacts offline); of those, only around 300 say they made an online report. Of those, almost 200 said that it had helped the problem, but it is difficult to say what distinguishes those who found it helpful from those who did not, given the small sample size and the number of factors in play. To pursue this question would require a specific evaluation among those who report problems online.

¹² Possibly, notice and take down procedures for pornographic content are better established in ISP practices than is responding to sexting or cyber-bullying, although the latter may cause long-enduring harm and deeper psychological distress to children. Unfortunately, just deleting the hurtful content may not make the problem go away, and children may need additional forms of help or referral to other agencies. Here ISPs can play a role in re-directing children to appropriate local organisations which can offer them appropriate guidance and support. This will require the development of effective protocols between ISPs and local (child help) organisations.

Policy implications

The provision of accessible, easy to use and effective reporting tools is a vital component of industry's contribution to online child safety. As children gain internet access via more diverse and personal platforms, ensuring that there are **consistent, easy-to-use reporting mechanisms and safety information on all devices is vital**.

Given the relatively low take-up of online reporting mechanisms, **there is considerable scope for further promoting their availability, age-appropriateness and use**. Making reporting mechanisms more accessible and trusted should include:

- **Clear, child-friendly communication** about reporting tools - how they work, what they are for.
- **Making them more prominent and accessible** in all areas where they might be needed, not just on a 'hidden corner' or very deep in the website's navigation.
- **Responding to all reports of inappropriate content or behaviour expeditiously**.
- **Making them open** so that both predefined and also new risks and concerns can be reported - it is vital to keep listening to children so as to recognise and provide appropriate support **for the changing array of risks that children face online**.
- **Making them available and easy to use by children and adults – including non-users**. Not only users but also non-users such as a parent or teacher without a SNS account may also want to report certain situations or content to the provider.
- **Ensuring that there are effective protocols and re-direct mechanisms in place with relevant local organisations** (e.g. Safer Internet Centres, law enforcement, helplines, children's charities).
- There must also be effective **'back office' mechanisms** to ensure the prompt review of inappropriate, abusive or illegal content or behaviour.
- **Independent evaluation of the effectiveness of reporting is crucial**, both to measure whether improvements have been made (against benchmarks) but more importantly, whether those improvements work - i.e. are they actually meeting children's needs.

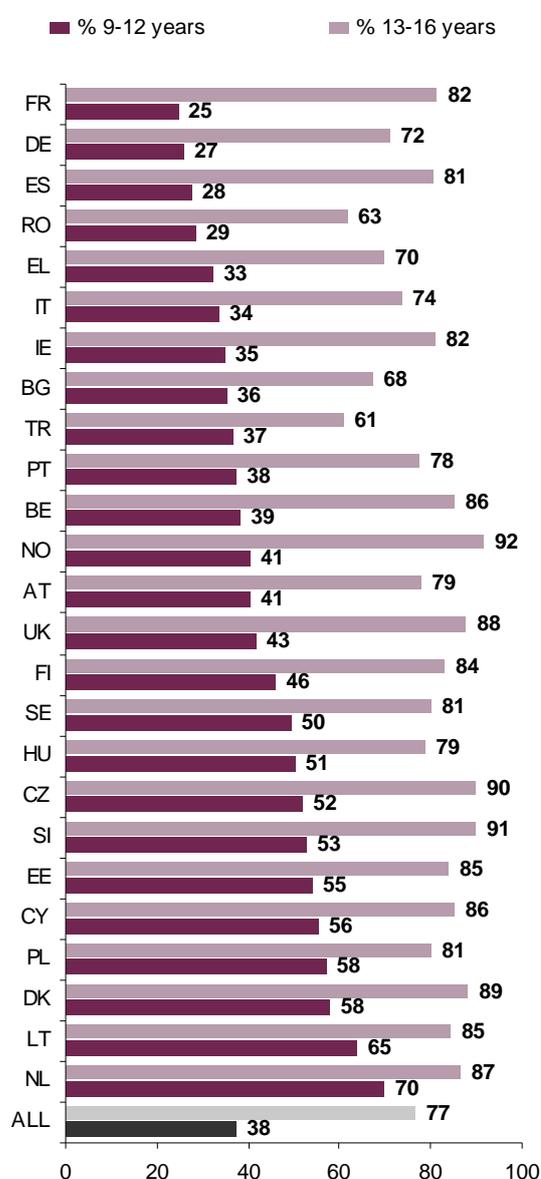
Privacy settings

Key findings

Do children have age-appropriate privacy settings available to manage who has access to their personal information? Survey questions on privacy focused on use of social networking sites (SNSs).

- **38% of 9-12 year olds and 77% of 13-16 year olds who use the internet in Europe have their own SNS profile - 59% overall** (Figure 6).

Figure 6: Children's use of SNS by country and age



QC313: Do you have your OWN profile on a social networking site that you currently use, or not?

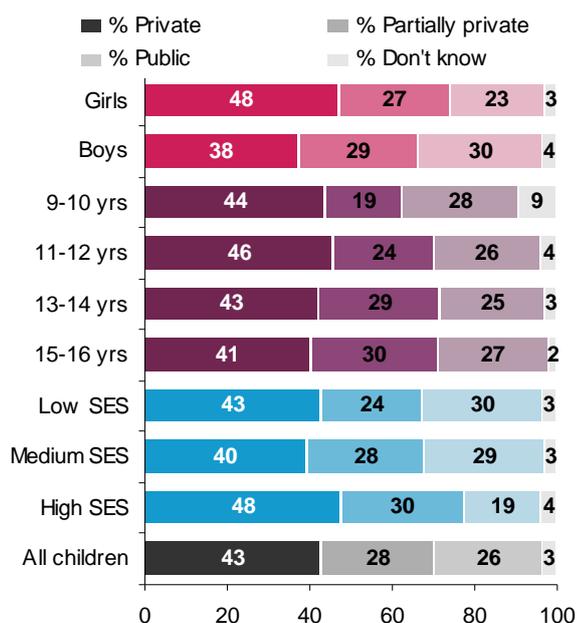
Base: All children who use the internet.

- Although teenagers use SNS heavily across Europe, the proportion of younger children with their own profile differs considerably by country.
- The need to provide privacy tools for younger children varies in urgency by country. It will be noted that, for most SNSs, 9-12 year old users should not have accounts in the first place, according to SNS providers' terms of service.

Our analysis of children's use of SNS, including privacy settings and information disclosure, reveals that:¹³

- 43% of SNS users keep their profile private so only their friends can see it; 28% have their profile partially private so friends of friends can see it; 26% report that their profile is public so anyone can see it (Figure 7).

Figure 7: Children's use of SNS privacy settings



QC317: Is your profile set to ...? Public, so that everyone can see; partially private, so that friends of friends or your networks can see; private so that only your friends can see; don't know.

Base: All children who have a profile on a social networking site.

¹³ Livingstone, S., Ólafsson, K. and Staksrud, E. (2011) *Social networking, age and privacy*. <http://eprints.lse.ac.uk/35849/>. See also Livingstone, S., Haddon, L., Görzig, A. and Ólafsson, K. (2011) *Risks and safety on the internet: The perspective of European children*. <http://eprints.lse.ac.uk/33731/>

Why do some use privacy settings and not others?

One reason may be because some users keep the 'default' privacy settings, perhaps because they were assumed to be in some way authoritative (i.e. because they are recommended by the site itself). However, for many SNSs, the default settings for children are not really private by default.¹⁴

- Another reason may be the digital skill required to manage these settings (see Table 5).
- 64% of 11-13 year old SNS users claim they can manage their privacy settings, as do 69% of 14-16 year old SNS users. This leaves one third of SNS users who cannot manage or struggle to manage their privacy online.¹⁵

Table 5: Children who have their SNS profile set to public by age and whether they can change the privacy settings

% SNS profile is set to public	Children who know how to change privacy settings	Children who do not know how to change privacy settings	All children
11-12 year olds	25	31	27
13-14 year olds	24	33	26
15-16 year olds	25	33	27
All	24	33	

QC321b: And which of these things do you know how to do on the internet: Change privacy settings on a social networking profile. By this I mean the settings that decide which of your information can be seen by other people on the internet.

Base: All children who have a profile on a social networking site.

Importantly, children are more likely to have a public profile if they do not know how to manage the privacy settings.¹⁶ There is little variation here by age - rather, it is skill that makes the difference.

¹⁴ See Donoso, V. (2011a). *Assessment of the implementation of the Safer Social Networking Principles for the EU on 14 websites: Summary Report*. European Commission, Safer Internet Programme, Luxembourg. Donoso, V. (2011b). *Assessment of the implementation of the Safer Social Networking Principles for the EU on 9 services: Summary Report*. European Commission, Safer Internet Programme, Luxembourg.

¹⁵ We have previously reported that only 56% of *all* 11-16 year old internet users say they can change the settings on an SNS profile, among 11-16 year olds with an SNS profile, two thirds can change them. The point here is to report the figures for SNS users only.

¹⁶ We acknowledge some scope for confusion here in children's survey answers. For example, they may think they have a public profile and yet have it in fact set to 'friends' or 'friends of friends' only. But confusion among children is, arguably, part of the problem occasioned by the complexity of the settings.

As noted earlier, how people act on the internet depends on the simultaneous operation of multiple factors. To analyse what leads some children to have a public profile, we conducted a logistic regression analysis (see Annex, Table 15).

The analysis found that children are more likely to have public (rather than private or partially private) profiles . . .

- **If they don't know how to change privacy settings on a social networking profile.** Children who say that they know how to do this are around 30% less likely to have their profile set to public.
- **If they are boys** (girls are 30% less likely to have public profiles than boys).
- **If their parents do not allow them to have a SNS profile** (children who have a profile despite their parents not allowing this are 21% more likely to have their profile set to public than those who say that their parents put no restrictions on SNS use). By contrast, children who say that they can use SNS only with permission are less likely to have their profile set to public.
- **If they experience more psychological difficulties** (the likelihood of a public profile increases by 63% for each point on the SDQ scale¹⁷).

To encourage children to ensure their profiles are kept private, targeting each of these factors will be important.

Note that age makes little difference to either skill or the use of privacy settings. Perhaps it is surprising that older teenagers are not more likely to keep their profile private, given the awareness-raising messages to which they will have been exposed. On the other hand, it is possible that parents have advised the youngest children to set their profiles to private.¹⁸

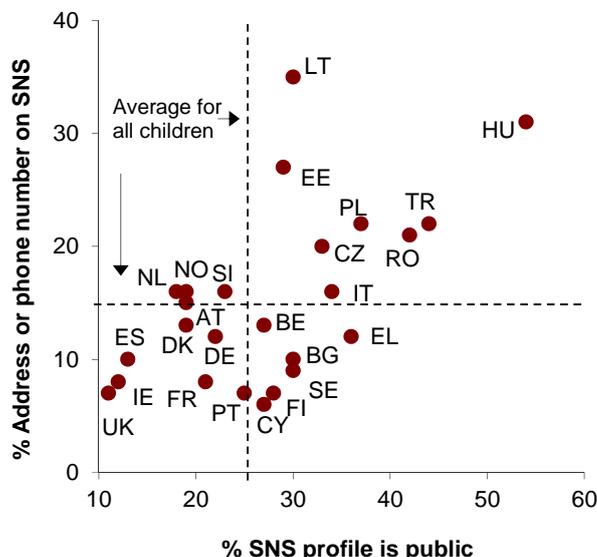
Does it matter if children's SNS profile is public?

- **Children who have their profile set to public are more likely to display their phone number or**

address on their SNS profile (22% of those with public profiles do this, compared with 11% of those with private profiles).

- As we now show in Figure 8, there is also a significant country-level association ($r=0,588$) between having a public profile and making one's address or phone number visible online (see Annex, Table 12).
- Thus, especially in Eastern Europe, it seems children are likely to have public SNS profiles displaying identifying information about them. Improving safety awareness messages is vital.
- By contrast, in the larger European countries (France, Germany, Spain, UK), it appears that safety awareness messages have resulted in safer SNS practices among children.

Figure 8: Children who display their address or phone number on a SNS by children whose SNS profile is public, by country (9-16 year olds with an SNS profile)



¹⁷ The standardised Strengths and Difficulties Questionnaire (SDQ) measures children's psychological, emotion and social difficulties.

¹⁸ It may also be suspected that the 9-10 year olds were unsure how to answer this question, given the higher proportion (9%) of 'don't know' answers. This too suggests the need for awareness-raising and digital skills among the youngest children.

Policy recommendations

Using social networking sites is one of the most popular online activities for young people online. For this reason, how such sites manage their privacy settings is of the utmost importance. Easy to use privacy settings that ensure young people are as safe as possible are key. Evidence repeatedly shows that too many children still struggle with privacy settings. Taking into account age-appropriateness, vulnerability and different levels of skills, we recommend that:

- **Service providers should empower users in an age-appropriate way so they can safely manage personal information.** This includes giving the user control over their personal information (e.g. that submitted during initial registration or that which is visible to others) so they can make informed decisions about what to disclose online.
- **Since children still struggle with user tools, safety devices, privacy settings and policies,** privacy controls must also be made more user-friendly. For younger users, more use could be made of intuitive icons and pictograms.
- **Internet service providers are uniquely placed to promote internet safety awareness and education among their users, and to support the work of national Safer Internet Centres.** This is especially urgent in those countries where there is insufficient awareness of the importance of privacy settings in online safety.
- **For the youngest users, there should be simpler tools, settings and explanations activated by default;** or there should be an upgrade of control features, user tools and safety information for all.
- In order to increase trust, **the management of safety, personal information and privacy settings of internet services used by children needs to be transparent and independently evaluated.**
- **The collection and retention of data from children should provide the maximum level of protection** and should take into account the best interests of the child.

Content classification

Key findings

How do EU Kids Online findings inform the policy effort to encourage improved age-rating and content classification?

Table 6: What kind of sexual images or potentially harmful user-generated content children aged 11-16 have seen on websites in past 12 months, by age and gender

%	Age				All
	11-13		14-16		
	Boys	Girls	Boys	Girls	
Images or video of someone naked	7	6	18	13	11
Images or video of someone having sex	5	3	16	7	8
Images or video of someone's 'private parts'	4	3	13	9	8
Images or video or movies that show sex in a violent way	2	2	4	2	2
Something else	1	1	3	2	2
<i>Seen any sexual images online</i>	11	9	27	19	17
Hate messages that attack certain groups or individuals	8	6	16	17	12
Ways to be very thin (such as being anorexic or bulimic)	5	8	7	19	10
Ways of physically harming or hurting themselves	6	4	10	9	7
Talk about or share their experiences of taking drugs	4	4	10	10	7
Ways of committing suicide	3	3	6	6	5
<i>Has seen any of these on websites</i>	14	15	25	31	21

QC131/3: Have you seen these kinds of things on any websites in the past 12 months? [If yes] Which, if any, of these things have you seen? (*Multiple responses allowed*)

QC142: In the past 12 months, have you seen websites where people discuss...? (*Multiple responses allowed*)

Base: All children aged 11-16 who use the internet.

Our survey¹⁹ shows that 23% of 9-16 year olds have seen sexual images in the media – 14% on websites, 12% on television, film or DVD, 7% in a magazine or book, 3% by text/mobile and 1% by Bluetooth. This includes 11% of 9-10 year olds, though only 5% say they have seen sexual images online.

The survey then asked the 11-16 year olds more detailed questions about potentially problematic online content. Table 6 shows that:

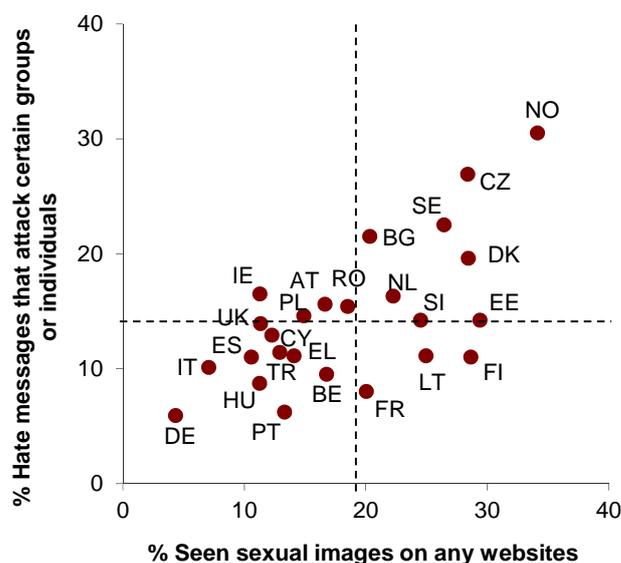
- **Boys, especially older teenagers, are more likely to have seen sexual or pornographic content online. But one in five older teenage girls also say they have seen this.**
- **Reports of violent pornography are low – 2% overall – though this may give rise to concern for those children exposed to it**
- **One in six 14-16 year olds has seen hate messages online, and one in ten has visited a self-harm site and/or a website related to drug-taking.**
- **One in five 14-16 year old girls has visited a pro-anorexia website.**
- **One in twenty 11-16 year olds has visited a suicide-related site.**

Country variation in such content exposure is considerable (see Table 13 and Table 14). Notably:

- **One in nine Finish children reports exposure to violent sexual images online.**
- **Reports of pro-anorexia content are double the European average in Cyprus, the Czech Republic, Estonia, Sweden and Slovenia.**
- **Twice as many as average have visited suicide sites in Sweden and Turkey.**

¹⁹ Livingstone, S., Haddon, L., Görzig, A. and Ólafsson, K. (2011) *Risks and safety on the internet: The perspective of European children. Full Findings.* <http://eprints.lse.ac.uk/33731/>

Figure 9: Children (%) who have seen sexual images or race hate messages online, by country²⁰



- **Moreover, forms of potentially harmful content are associated on a country level (Figure 9).²¹**
- **The incidence of these risks is high in countries we have classified as ‘higher use, higher risk’ (where internet use is now deeply embedded in daily life; e.g. Nordic countries) or ‘new use, new risk’ (where regulatory efforts are less developed as yet; e.g. Czech Republic). Germany stands out as a country in which the incidence of both types of exposure is low.²²**

²⁰ For sexual messages, the figures are based on 9-16 year olds; for hate messages, the survey only asked the 11-16 year olds.

²¹ The correlation on the country level between seeing sexual images on any websites and seeing websites with hate messages that attack certain groups or individuals is $r=0.657$. There is also a correlation on the individual level with children who have seen sexual images on websites being more likely to have seen websites with hate messages that attack certain groups or individuals. Among those who have not seen sexual images on websites some 8% have seen websites with hate messages but amongst those who have seen sexual images on websites some 31% have seen websites with hate messages.

²² Work by the Hans Bredow Institute (HBI) conducted on behalf of the Federal Ministry for Family Affairs, Senior Citizens, Women and Youth (BMFSFJ) and the *Länder*, shows that self-regulation is more effective in relation to youth media protection when independently evaluated and interlinked with relevant other organisations. See <http://merlin.obs.coe.int/iris/2008/1/article103.en.html>; and <http://www.osborneclarke.com/~media/Files/publications/sectors/digital-business/germany-reforms-online-youth-protection-requirements.ashx>

Why do some children encounter more potentially harmful online content than others?

A linear regression analysis tested the factors which might influence children's exposure to content related risks. First, a scale was constructed using the ten items presented in Table 6.²³ Then we examined whether four skills are related to an increase or a decrease in exposure to content related risks.²⁴

- **The findings show that the level of digital skills can predict the likelihood of exposure to content-related risks** (ranging from 9 to 16 per cent increase). This effect is reduced when age, gender, frequency of use, time spent online and number of online activities are controlled for (Annex, Table 16).

In effect, as children gain digital skills, we must expect them to encounter more – not less – potentially harmful online content, as they explore the possibilities afforded by the internet.

If such exposure is to be reduced, it will require strategies that reduce accessibility (via end-user filtering or the design or availability of online content).

In the EU Kids Online survey we followed up the questions on online sexual images by asking children how they responded. Table 7 shows that:

- **One third of those who saw different kinds of sexual image were bothered or upset by this.**
- **Of those, around half told someone about it (usually a friend, followed by a parent).**
- In only a third to a half of cases where a child has seen sexual images online, does their parent say that this has happened to their child.
- Little difference can be discerned according to the type of content seen, although it should be appreciated that the sample sizes are small.

²³ This resulted in a scale which ranged from zero (has encountered none of the content-related risks) to ten (has encountered all ten of them). Only children age 11 to 16 were asked about these items. Since only a third of them had encountered at least one of the items, the scale was log-transformed to compensate for the positive skew.

²⁴ Four questions were tested asking the children if they knew how to block unwanted adverts or spam and finding information on how to use the internet safely (as a measure of skills in finding what you need) and then changing filter preferences and blocking messages from people they don't want to hear from (as a measure of skills in preventing access to what they don't want).

Table 7: Children's reaction to seeing different kind of sexual images on websites (age 11-16)

Saw images or video of someone naked	11
<i>of those, the percentage who were bothered</i>	30
<i>of those, the percentage who talked to anyone about what happened</i>	50
<i>for those children, the percentage of parents who said that their child had seen sexual images on websites</i>	36
Saw images or video of someone's private parts	8
<i>of those, the percentage who were bothered'</i>	27
<i>of those, the percentage talked to anyone about what happened</i>	53
<i>for those children, the percentage of parents who said that their child had seen sexual images on websites</i>	34
Saw images or video of someone having sex	8
<i>of those, the percentage who were bothered</i>	24
<i>of those, the percentage who talked to anyone about what happened</i>	49
<i>for those children, the percentage of parents who said that their child had seen sexual images on websites</i>	32
Saw Images or video of someone having sex in a violent way	2
<i>of those, the percentage who were bothered</i>	34
<i>of those, the percentage who talked to anyone about what happened</i>	49
<i>for those children, the percentage of parents who said that their child had seen sexual images on websites</i>	40

Note: The question asked was, 'Did you do any of these things? I reported the problem (e.g. clicked on a 'report abuse' button, contact an internet advisor or 'Internet service provider (ISP)').

Base: As described in the table. *In the past 12 months.

Do technical solutions help? We noted before²⁵ that 26% of 11-16 year olds upset by sexual images online hoped the problem would go away by itself and 22% tried to fix the problem themselves. Table 8 shows that:

- **Seeking a technical solution (deleting messages or blocking unwanted contacts) was attempted by one fifth of those who were upset. For two in three who did this, the solution was seen as helpful.**
- **Fewer – one in six of those upset by online sexual images – reported the problem online, but most who did (87%) found it helpful.**

²⁵ Livingstone, S., Haddon, L., Görzig, A. and Ólafsson, K. (2011) *Risks and safety on the internet*. <http://eprints.lse.ac.uk/33731/>

- Around a quarter of children upset by online sexual images simply stopped using the internet for a while – clearly these children risk losing out on the benefits of the internet, and could be targeted with more and better awareness information and easy-to-use reporting tools.

Table 8: What the child did after seeing sexual images online (among children bothered by such images)

%	Did this	% Of those who did it who said it helped
I deleted any messages from the person who sent it to me	26	73
I stopped using the internet for a while	25	72
I blocked the person who had sent it to me	23	65
I changed my filter/ contact settings	19	63
I reported the problem (e.g. clicked on a 'report abuse' button, contact an internet advisor or 'internet service provider (ISP)')	15	87
None of these	15	60
Don't know	31	81

QC140: Thinking about [the last time you were bothered by seeing sexual images on the internet], did you do any of these things?
 QC141: Which, if any, of the things you did helped you? (*Multiple responses allowed*)

Base: All children who use the internet and have been bothered by seeing sexual images online.

Policy implications

The wider use of content classification, and the wider availability of positive content for children, represents important elements in a comprehensive approach towards making the internet a better place for kids.

- Classification of online content (websites, functionalities, applications, pictures, videos, etc.) should examine the suitability of existing models of content classification such as **PEGI or the Online Age Ratings** currently implemented under the German youth protection system.
- **The classification of content could be based on a combination of labelling and/or content descriptions** depending on the kind of content involved and the nature of the platforms or services offered. While age groups associated with specific levels of child development provide the best indicators of what is appropriate in terms of

content, age alone may not always be the sole criterion for effective classification. Here content descriptions may be additionally relevant to take account of different levels of development, or more vulnerable children.

- **For industry-produced content, a graduated range of age-rating mechanisms**, such as applies in the German age rating scheme, would give content providers the maximum flexibility in choosing the best approach in validating the labelling of content. User-generated content (UGC) provides specific challenges, particularly if content-labelling is to be consistent across all services. If services as a whole are age-rated, providers will have to identify ways of ensuring that content uploaded to their websites/platforms (by third parties e.g. app developers and users) is 'safe'.
- **Further research is needed to test and evaluate effective content classification systems.** Some mechanisms may prove more effective on some specific platforms than others. It is important, therefore, that possible solutions are continuously tested, evaluated and refined as online services evolve.

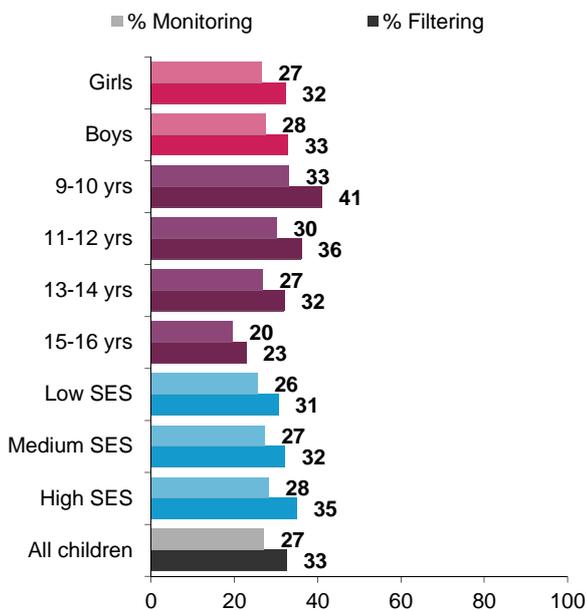
Parental controls

Key findings

We have seen that parents are concerned about their children's online safety. So how widely are parental controls used? And how do children and parents evaluate them?

The survey asked the parent most involved with the child's internet use if they use filtering or monitoring software at home.²⁶ Our full findings report includes lots of information about parents' and children's practices regarding internet safety and parental mediation.²⁷ Here, we pull out some key findings and new analyses relevant to parental controls (Figure 10).

Figure 10: Parents' use of filtering or monitoring



QP224a: Do you make use of any of the following? Parental controls or other means of blocking or filtering some types of website.

QP224: Do you make use of any of the following? Parental controls or other means of keeping track of the websites they visit.

Base: Parents of children aged 9-16 who use the internet.

²⁶ These were defined as follows:

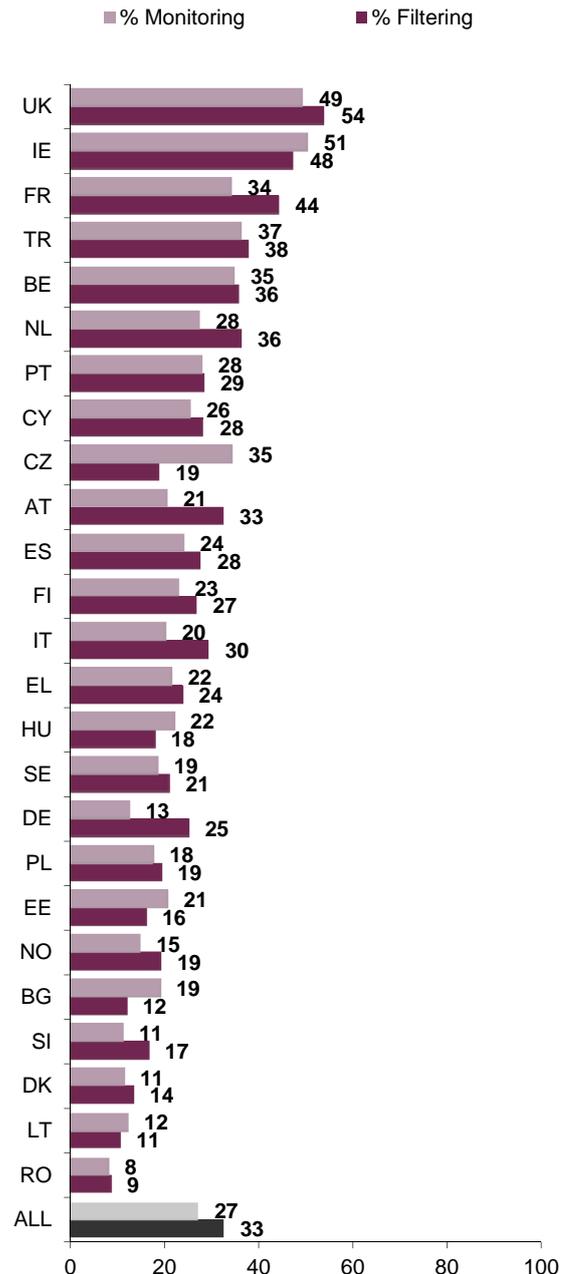
Parental controls or other means of blocking or filtering some types of website. By this we mean something that stops your child visiting certain websites or that stops some kinds of activities on the internet. [termed *filtering*]

Parental controls or other means of keeping track of the websites they visit. By this we mean something that keeps a record of the websites your child visits so you can check later what s/he did on the internet. [termed *monitoring*]

²⁷ Livingstone, S., Haddon, L., Görzig, A. and Ólafsson, K. (2011) *Risks and safety on the internet: The perspective of European children. Full Findings.* <http://eprints.lse.ac.uk/33731/>

- One in three parents claims to filter their child's internet use and a quarter use monitoring software. There are no notable gender differences, but middle class parents are a little more likely to use parental controls, and parents of younger children are a lot more likely to use them.

Figure 11: Parents' use of filtering or monitoring



QP224a: Do you make use of any of the following? Parental controls or other means of blocking or filtering some types of website QP224: Do you make use of any of the following? Parental controls or other means of keeping track of the websites they visit.

Base: Parents of children aged 9-16 who use the internet.

Since some two thirds of European parents do not use filtering and monitoring software at present, there could be considerable scope to increase the take up of these tools. We acknowledge a range of views here on whether this is wholly desirable, especially for older children, and especially given the limitations on filtering software at present.

Parents' decisions about how best to support their children online will be influenced by a wide range of cultural and individual factors.²⁸

Country differences are noteworthy (see Figure 11), with adoption far higher in the UK and Ireland than in many other countries, and very low rates of adoption in Romania and Lithuania.

Why do some parents use filters and not others?

To analyse what leads some parents to use filtering tools, we conducted a logistic regression analysis (see Annex, Table 17).

This shows parents are more likely to use filters . . .

- **If they are regular users of the internet themselves** (use it more than weekly). These parents are around 40% more likely to say that they make use of parental controls or other means of blocking or filtering some types of websites.
- **If they are confident in using the internet.** Parents who say that they are fairly or very confident in using the internet are 30% more likely to say that they make use of parental controls or other means of blocking or filtering some types of websites.
- **If they say that they worry a lot about their child seeing inappropriate material on the internet or being contacted by strangers on the internet.** Parents who worry about their child seeing inappropriate material on the internet are around 30% more likely to make use of filters and parents who worry about their child being contacted by strangers are around 20% more likely to use filters.
- **Older parents, parents of older children or of children who use the internet daily or of children who spend more time online are all less likely to make use of filters.**

²⁸ See Dürager, A. & Livingstone, S. (2012) *How can parents support children's internet safety?* <http://eprints.lse.ac.uk/id/eprint/42872>

- Levels of parental education or the socio-economic status of the household make no difference.

Does the use of parental controls reduce children's online risk? New analysis (Table 9) shows that:

- **If parents use filtering or monitoring tools, children are a little less likely to encounter online risks compared with children whose parents do not use such tools.**

Table 9: Encountering online risks for children whose parents make use of parental controls

% of children who have...	
Seen sexual images on websites*	14
<i>If parents use filtering tools</i>	12
<i>If parents use monitoring tools</i>	13
<i>If parents use neither</i>	16
Have been sent nasty or hurtful messages on the internet*	6
<i>If parents use filtering tools</i>	5
<i>If parents use monitoring tools</i>	5
<i>If parents use neither</i>	7
Seen or received sexual messages on the internet*	15
<i>If parents use filtering tools</i>	13
<i>If parents use monitoring tools</i>	12
<i>If parents use neither</i>	16
Ever gone on to meet anyone face-to-face that first met on the internet	9
<i>If parents use filtering tools</i>	7
<i>If parents use monitoring tools</i>	7
<i>If parents use neither</i>	11

Note: For exact phrasing of questions see: Livingstone, S., Haddon, L., Görzig, A., and Ólafsson, K. (2011). *Risks and safety on the internet: The perspective of European children. Full Findings.* LSE, London: EU Kids Online

Base: All children who use the internet; all children whose parents use parental controls for filtering or monitoring. * In the past 12 months.

However, the younger their child, the more parents are likely to use filtering or monitoring software. Also, younger children encounter fewer risks online (because they do less online) while older children encounter more risks (again, because of the way they use the internet – more deeply, more broadly, and with less supervision). So, the finding that more use of parental controls is linked to a lower incidence of risk may not mean that the former is responsible for the latter.

Indeed, our further statistical analysis suggests that age is the key factor at work here, explaining both use of parental controls and children's risk encounters. **Thus, when we control statistically for the effects of age (and gender, online activities, access and country), this slight benefit of parental controls in reducing risk seems to disappear.**²⁹

This finding recalls that of our previous report on parental mediation, which compared parental strategies of restrictive mediation (via rules and restrictions) and active mediation (talking about or sharing internet use with one's child).³⁰ This found that:

- **Use of parental controls appears to reduce both children's online risk and their digital skills and opportunities. However, active mediation (i.e. greater parental engagement) reduces risk but not skills or opportunities.**

We conclude with survey findings showing that parents and children are willing to play their part in internet safety, but they need more support to do so effectively (see Table 10):

- Currently, just a quarter of children (27%) and nearly one third of parents think that parents are effective in helping to keep children safe online.
- One third of children say their parent(s) knows a lot about what they do on the internet, contrary to popular supposition; few (7%) say they routinely ignore their parents' advice regarding internet use.
- Nearly half of parents (44%) think they can help their children deal with potential problems online, though only 27% are confident their child can deal with problems.
- Only 15% of children wish their parents to take a greater interest in their internet use, although half of parents (53%) think they should do this.
- Over a quarter of parents (28%) thinks that their child will encounter something that bothers them online in the coming sixth months.

²⁹ In other words, younger children encounter less risk and are also more subject to parental controls. Similarly, older children encounter more risk and are also less subject to parental controls. But there is no independent effect of parental controls on risk. In statistical terms, we used a logistic regression analysis of use of parental controls on child's encounter with online risk, controlling for the variables identified.

³⁰ See Dürager, A. & Livingstone, S. (2012) *How can parents support children's internet safety?* <http://eprints.lse.ac.uk/id/eprint/42872>

Table 10: Judging parental mediation

	%
[Children] Do the things that your parent does/parents do relating to how you use the internet help to make your internet experience better, or not really? % Yes a lot	27
[Parents] Do the things that you (and your partner/other carer) do relating to how your child uses the internet help to make his/her internet experience better, or not really? % Yes a lot	31
[Children] How much do you think your parent(s) knows about what you do on the internet? % A lot	32
[Children] And do you ever ignore what your parent(s) tell you when use the internet, or not really? % Yes, a lot	7
[Parents] To what extent, if at all, do you feel you are able to help your child to deal with anything on the internet that bothers them? % A lot	44
[Parents] To what extent, if at all, do you think your child is able to deal with things on the internet that bothers them? % A lot	27
[Children] Overall, would you like your parent(s) to take more or less interest in what you do on the internet, or stay the same? % Do more	15
[Parents] Speaking of things you do in relation to your child's internet use, do you think you should do more or not really? % 'Yes a bit' or 'a lot more'	53
[Parents] In the next six months, how likely, if at all, do you think it is that your child will experience something on the internet that will bother them? % Very or fairly likely	28

Base: All children who use the internet and one of their parents.

Policy implications

Parental controls are widely promoted as a useful way to keep children safe online, particularly younger children. **There is considerable scope for improvement in their adoption and use since some two thirds of parents do not use them.**

Parents could be encouraged to consider making more use of parental controls and other technical solutions, although this will require greater availability of easy-to-use, carefully tailored, affordable tools.

The use of parental controls or filtering software, however, cannot be the sole solution. Technical solutions can create a false sense of security for parents, teachers and carers who may think that by applying certain types of software, children will be safe online without them having to do more or engage with their children's internet use.

The provision and use of parental controls must also take account of children's rights, including the rights to privacy and to access information and participation, as set out in the **UN Convention on the Rights of the Child**.³¹ The Convention is clear that those responsible for the child's welfare, including the child him or herself, should judge decisions regarding safety, privacy, expression and well-being according to the maturity of the child concerned.

Delivery of children's rights will be aided by clear and transparent information regarding the design decisions taken by services, the uses made by services of personal data, and the choices available to users (**child and parent**). We conclude that:

- Parents should be aware of, and empowered to use if they choose to, an improved array of parental controls, and this will require greater availability of easy-to-use, carefully tailored, affordable tools. This is especially important for younger children, who tend to be more upset when faced with inappropriate content or conduct online.
- Industry can assist by making parental controls and safety tools age-appropriate for children, and far more effective (in terms of under- and over-blocking) as well as more usable (whether by children or parents) than at present.
- To be effective, parental controls should address the range of issues that concern parents about their children's internet use. Thus, in addition to filtering out adult or unsuitable online content for children, controls may also need to manage the amount of time spent online, and the filtering of user-generated content and commercial content.
- The management of safety, identity and privacy underpinning services used by children should be transparent, accountable and independently evaluated. This is important whether safety and privacy is implemented 'by default' or 'by design' or if it is managed by provision of user-friendly tools.

³¹ The Convention specifies children's rights to express their views freely in all matters affecting them (Art. 12), freedom of expression (i.e. to seek, receive and impart information of all kinds) through any medium of the child's choice (Art. 13), freedom of association and peaceful assembly (Art. 15), protection of privacy (Art. 16) and to mass media that disseminate information and material of social and cultural benefit to the child, with particular regard to the linguistic needs of minority/indigenous groups and to protection from material injurious to the child's well-being (Art. 17).

Designing age-appropriate, user-friendly tools and interfaces

As the range of internet-enabled devices continues to expand from PCs to tablets, laptops, mobile phones, games consoles and other devices, it becomes ever more pressing that children and parents are empowered with better-designed, age-appropriate and user-friendly tools and interfaces.

We conclude this report by reviewing the evidence available from other research regarding this challenge. Despite the growing numbers of children and teenage internet users, and the ever growing amount of online services targeted at them, too little is yet known about how children actually use websites or online services or how to design child-friendly sites.

Usability studies carried out with children and teenagers contradict the stereotype of all children being 'digital natives', showing instead that digital skills vary across and within age groups.³² Generally the highest usability in online services is reported for designs specifically targeted at the needs and behaviours of specific age groups. In designing user interfaces targeted at teenagers and children, the following are important:³³

- Because teenagers can be impatient, use clear and comprehensive navigation structures with detailed menus that are accessible at any time.
- Use standard graphical user interfaces (e.g. scrollbars with up and down arrows, windows, and pull down menus) so users can easily recognise and use the services' key features.
- Teenagers as well as younger children prefer sites that are easy to scan or that illustrate concepts visually rather than sites where words dominate. This includes the use of meaningful and easily

³² For example, Nielsen (2005) found that 13-17 year olds were less successful than adults in completing a number of ordinary tasks on a range of websites. This was due to their lower level of reading skills, less sophisticated research strategies, and much lower levels of patience. Similar results have been reported with younger children. Nielsen, J. (2005, January). "Teenagers on the Web: 60 usability guidelines for creating compelling web sites for teens." Jakob Nielsen's Alertbox, Nielsen Norman Group. Available at <http://www.useit.com/alertbox/teenagers.html>.

³³ Sherman, M. (2008) *Effective Web Design for a Teenage Audience*. http://sites.wiki.ubc.ca/etec510/Effective_Web_Design_for_a_Teenage_Audience. See Sinadow (2011) and Nielson (2005), op cit.

identifiable icons so that users can clearly understand what will happen if they select them.

- Tools should be as intuitive as possible not requiring young users to read (too many) instructions or to look too hard for help options.
- Teenagers enjoy interactive features that let them do things. Forms for providing feedback or asking questions, message boards, and forums for offering and receiving advice can all be effective (current reporting tools are often limited to pre-defined online forms, text entry boxes or e-mails).

Simple and robust reporting tools

Usability studies with 12-17 year old SNS users reveal that children face a range of difficulties.³⁴

- Children can often find existing reporting tools and they recognise their usefulness. But they face difficulties when using such tools – e.g. they may find reporting forms confusing or inconsistent or imprecisely tailored to their needs (e.g. in one service, users could report pictures where the user had been tagged but not any other pictures).
- Other difficulties include situations where children become afraid of the consequences of their reports, perhaps because severe warnings about misuse are placed alongside the reporting tool. In other cases, the labels employed within the reporting options were not easily understood by children as they include technical or legal terms which are complicated for younger users to understand (e.g. ‘legal issue’, scam, ‘graphic violence’) or because they overlap with each other making it hard for young users to decide where to ‘place’ their complaint (e.g. harassment or bullying?).

Thus it may be advisable to employ reporting options that reflect children’s own conception of the problem (e.g. ‘embarrassing pics’), to include the most common problems faced by users of the service, and to include the most common online risks identified by research. Using the same (recognisable) reporting icon everywhere on the

³⁴ See Sinadow (2011), op cit. We recognise that the second assessment of the Safer Social Networking Principles for the EU indicated that many of the services assessed provide age-appropriate, user-friendly and easily accessible reporting mechanisms. But actual users, especially children, were not consulted in the research. See Donoso (2011 a & b), op cit.

service (and across platforms) may also help improve ease-of-use.

At the level of graphic user interface (GUI), excessive steps in the reporting process should be avoided and, instead, reporting options in relevant navigation places should be offered. It may be necessary to locate reporting tools in the navigation areas where problems tend to arise (e.g. where user-generated content is uploaded). Too often, links are provided at the bottom of pages or where users must scroll down beyond where they would normally look (rather than in the main navigation structure).³⁵

Most importantly, even in systems that provide user-friendly reporting tools, children may feel discouraged or frustrated if receipt of their report is not acknowledged or if they do not get clear feedback regarding how their report will be handled. **It is vital to inform users that their report was received and what response they can expect and by when.**

Age-appropriate privacy settings

Children may claim to be more proficient in using privacy settings than is the case in practice.³⁶

Usability research with 12-17 year olds shows that:

- Most users are able to manage general privacy settings (e.g. deciding if their profile should be made visible to all or only to friends) but more specific privacy settings (e.g. which allow users to make decisions regarding the visibility/availability of specific content) are harder to find and to manage.³⁷
- Unclear labels or layout, confusing placement of privacy settings, and language inconsistency in navigation structures are all common problems. The functionality to delete one’s account presents particular difficulties because it is often placed too deep in the navigation structure and so is hard for users to find.

When designing age-appropriate privacy settings, it is important that these should be prominent and always available. They should be placed close to

³⁵ See Sinadow (2011), op cit.

³⁶ Madden, M. (2012). Privacy management in social media sites. Pew Internet & American Life Project. <http://pewinternet.org/Reports/2012/Privacy-management-on-social-media.aspx>

³⁷ See Sinadow (2011), op cit.

user-generated content, with clear and consistent labels and icons that reflect children's own privacy concerns, and they should be relevant to the immediate situation (e.g. ask children at the moment of uploading a picture if they want that picture to be seen or circulated by unknown users).

Content classification

Parents generally support a universal rating system that could be applied across media rather than media-dependent rating systems.

- One recent study concluded that ratings are effective only if they are useful to parents.³⁸ But, since parents often disagree on the ages for which different content aspects are appropriate, they prefer detailed content information rather than age-based ratings (though the latter may be simpler).

In designing content classification systems, the use of long-form text labels accompanied by icons should be encouraged as opposed to pure age-based rating, which may be too general and say little about the (rated) content itself. A short, but accurate description of the content gives parents the information to make an informed decision in relation to their child, subject to their own parenting styles and family/cultural values.

Parental controls

It is likely that many parents would value easy-to-use, age appropriate and effective tools to manage the range of platforms and devices by which their children goes online.

- The results of the SIP-BENCH I and II studies³⁹ show that the effectiveness of parental controls is variable, and it depends on platform type – PC tools are more effective than web-based tools, for instance. Such tools are ineffective for user-generated content (except by blocking entire sites e.g. YouTube). Adult content is generally better filtered than other types of inappropriate or harmful

content (because filtering software relies on existing black lists and keyword/ URL analysis which are far from exhaustive).

It ought to be noted, however, that EU Kids Online knows of no research on actual usage rates of filtering software, or assessments of its effectiveness, which have been derived from in-home observation by independent research. Although there is little research that clearly demonstrates positive impact of using parental controls on the safety of children online, **other types of mediation - such as the active involvement of parents in their children's internet use - seem to have a more positive effect.**

We believe there is now a pressing need to better understand the contexts in which such tools are used so as to identify design requirements that could meet parental and children's needs and concerns regarding children's online safety. In order to achieve this, future tools should be user-friendly, flexible and easily customizable.

Particularly, in the spirit of encouraging active and open communication regarding e-safety between parents (and teachers) and children, **a new generation of parental controls could allow for more customisation of the online environment** so as to cater for the diverse backgrounds, contexts of use, family interactions and parental styles of the European parents and children for whom these tools will be designed.

Such tools should also take into consideration children's rights, especially those related to privacy and information access. In short, we recommend a shift from parental 'control' to parental 'mediation' tools that serve to "accompany" children online, especially the youngest ones, rather continue developing tools that focus primarily on restricting children's online activities.

In terms of interaction design, these tools should be easy-to-install, use, and configure so as to guarantee an optimal user experience. Finding the right balance between ease of installation and configuration and the possibility to customise the tools according to specific user's needs and parental styles remains a challenge.

³⁸ Gentile DA, Maier JA, Hasson MR, Lopez de Bonetti B. (2011). Parents' evaluation of media ratings a decade after the television ratings were introduced. *Pediatrics*, 128(1):36-44.

³⁹ *Benchmarking of parental control tools for the online protection of children SIP-Bench II. Results of the 1st cycle.* Safer Internet Programme, 2010, http://www.yprt.eu/sip/index_phase1.cfm
Benchmarking of parental control tools for the online protection of children SIP-Bench II. Results of the 3rd cycle. Safer Internet Programme. (2011/12), <http://www.yprt.eu/sip/>

Annex

Here we provide detailed statistical tables to accompany the new analyses conducted for this report.

Table 11: Logistic regression model of the log odds of a child using reporting tools when bothered by any of the four risks listed in Table 3

	EXP(b)
Constant	0.068
Girls	1.479
Age	n.s.
Number of online activities	1.100
Psychological strengths and difficulties	1.675
SES high	0.660
SES medium	0.597
Austria	n.s.
Belgium	n.s.
Bulgaria	n.s.
Cyprus	n.s.
Czech Republic	n.s.
Germany	n.s.
Denmark	n.s.
Estonia	n.s.
Greece	n.s.
Spain	n.s.
Finland	n.s.
France	n.s.
Hungary	n.s.
Ireland	3.143
Italy	n.s.
Netherlands	2.431
Norway	n.s.
Poland	2.116
Portugal	n.s.
Romania	n.s.
Sweden	n.s.
Slovenia	n.s.
Turkey	4.704
-2 Log likelihood	1456.1
Chi square (model)	108.1
df	29
Cox & Snell R ²	0.05
Nagelkerke R ²	0.09

Table 12: What information children show on their social networking profile, by country

	% SNS profile is public	% address or phone number	% shows incorrect age	Average from six identifying features
AT	19	15	14	2.7
BE	27	13	21	2.9
BG	30	10	10	2.3
CY	27	6	23	2.4
CZ	33	20	13	2.7
DE	22	12	9	2.6
DK	19	13	25	2.8
EE	29	27	20	2.7
EL	36	12	19	2.2
ES	13	10	27	2.4
FI	28	7	14	2.4
FR	21	8	18	2.6
HU	54	31	2	3.5
IE	12	8	24	2.4
IT	34	16	20	2.7
LT	30	35	9	2.8
NL	18	16	6	3.1
NO	19	16	17	2.8
PL	37	22	3	3.4
PT	25	7	25	2.1
RO	42	21	12	2.2
SE	30	9	19	2.6
SI	23	16	21	2.7
TR	44	22	18	2.8
UK	11	7	21	2.8
ALL	26	14	16	2.8

QC317: Is your profile set to ...? Public, private or partially private.
 QC318a-f: Which of the bits of information on this card does your profile include about you? (*Multiple responses allowed*) Identifying features asked about, which are summed in the final column: a photo that clearly shows your face, your last name, your address, your phone number, your school, your correct age.

Base: All children who have a profile on a social networking site.

Table 13: What kind of sexual images the child has seen online in past 12 months, by age (age 11+), by country

	Images or video of someone naked	Images or video of someone having sex	Images or video of someone's 'private parts'	Images or video or movies that show sex in a violent way
AT	12	7	7	1
BE	10	7	6	1
BG	12	10	9	3
CY	7	6	2	1
CZ	19	15	12	4
DE	3	2	2	1
DK	18	16	13	4
EE	19	12	14	3
EL	9	10	5	1
ES	6	4	3	1
FI	8	11	12	11
FR	13	11	9	3
HU	7	4	4	1
IE	7	6	5	2
IT	3	3	3	1
LT	16	9	12	6
NL	15	7	9	1
NO	21	18	16	5
PL	12	6	8	1
PT	8	8	5	1
RO	11	5	6	2
SE	17	16	13	5
SI	17	11	10	2
TR	9	4	5	2
UK	6	4	5	1
ALL	11	8	8	2

QC131/3: Have you seen these kinds of things on any websites in the past 12 months? [If yes] Which, if any, of these things have you seen? (*Multiple responses allowed*)

Base: All children aged 11-16 who use the internet.

Table 14: What kind of potentially harmful user-generated content the child has seen online in past 12 months, by age (age 11+), by country

	Hate messages that attack certain groups or individuals	Ways to be very thin (such as being anorexic or bulimic)	Ways of physically harming or hurting themselves	Talk about or share their exp. of taking drugs	Ways of committing suicide
AT	16	11	9	14	5
BE	10	6	5	4	2
BG	22	21	8	8	5
CY	13	12	5	6	4
CZ	27	25	12	21	6
DE	6	10	7	8	3
DK	20	12	12	7	7
EE	14	22	12	16	8
EL	11	8	5	4	3
ES	11	8	6	7	2
FI	11	14	11	9	6
FR	8	6	3	4	2
HU	9	6	6	5	1
IE	17	11	9	9	4
IT	10	8	6	6	3
LT	11	13	11	9	6
NL	16	12	9	8	5
NO	31	17	16	9	9
PL	15	14	7	7	3
PT	6	8	5	4	1
RO	15	11	10	12	7
SE	23	22	13	15	10
SI	14	22	16	18	8
TR	11	9	10	5	11
UK	14	8	6	8	2
ALL	12	10	7	7	5

QC142: In the past 12 months, have you seen websites where people discuss...? (*Multiple responses allowed*)

Base: All children aged 11-16 who use the internet.

Table 15: Logistic regression for the log odds of a child having a public SNS profile

	EXP(b)
Constant	0.17
Girls	0.69
Age	n.s.
Number of online activities	1.04
Psychological strengths and difficulties	1.63
SES high	0.63
SES medium	n.s.
Say they know lots about using the internet	1.15
Know how to change privacy settings on SNS	0.72
SNS only allowed with permission	0.76
SNS not allowed	1.21
Austria	2.13
Belgium	3.42
Bulgaria	4.21
Cyprus	3.95
Czech Republic	5.39
Germany	2.75
Denmark	2.87
Estonia	3.44
Greece	5.37
Spain	n.s.
Finland	4.62
France	2.65
Hungary	9.27
Ireland	n.s.
Italy	5.01
Lithuania	4.15
Netherlands	2.71
Norway	3.20
Poland	5.93
Portugal	3.02
Romania	7.43
Sweden	4.64
Slovenia	2.89
Turkey	6.93
-2 Log likelihood	12,557.1
Chi square (model)	964.6
df	35
Cox & Snell R ²	0.08
Nagelkerke R ²	0.12

Table 16: Linear regression to predict children's exposure to content related risks (children aged 11-16)

	EXP(b)
Constant	1.11
Girls	n.s.
Age	1.05
Number of online activities	1.03
Time spent online (hours)	1.06
Uses the internet daily	n.s.
<i>Digital skills</i>	
- Find info' on how to use the internet safely	1.03
- Compare websites to decide if info' is true	1.05
- Block unwanted adverts or junk mail/spam	1.02
- Change filter preferences	1.06
F	318.0
df	9
Sig (model)	<0.001
R ²	0.157

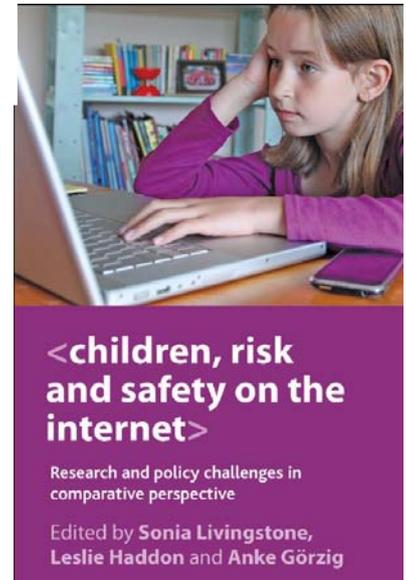
Table 17: Logistic regression for the log odds of a child having a public SNS profile

	EXP(b)
Constant	0.26
Parent indicators	
Use the internet at least weekly	1.41
Confident in using the internet	1.31
Age	0.99
Worried that child might see inappropriate material on the internet	1.30
Worried that child might be contacted by strangers on the internet	1.19
Child indicators	
Girls	0.94
Age	0.92
Use the internet daily	0.87
Time spent online (hours)	0.85
-2 Log likelihood	23,786
Chi square (model)	840
df	9
Cox & Snell R ²	0.04
Nagelkerke R ²	0.06

Further reports available at www.eukidsonline.net

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As a major part of its activities, *EU Kids Online* conducted a face-to-face, in home survey during 2010 of 25,000 9-16 year old internet users and their parents in 25 countries, using a stratified random sample and self-completion methods for sensitive questions.

Now including researchers and stakeholders from 33 countries in Europe and beyond, the network continues to analyse and update the evidence base to inform policy.

For all reports, findings and technical survey information, as well as full details of national partners, please visit www.eukidsonline.net