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THE LONDON SCHOOL
OF ECONOMICS AND
POLITICAL SCIENCE

EU Kids Online

Comparing children's online opportunities and risks across Europe

**European Research on Cultural, Contextual and Risk Issues
in Children's Safe Use of the Internet and New Media (2006-2009)**

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– <http://ec.europa.eu/saferinternet>**

www.eukidsonline.net



Comparing children's online opportunities and risks across Europe: Cross-national comparisons for EU Kids Online

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*European Research on Cultural, Contextual and Risk Issues
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The EU Kids Online network is funded by the EC *Safer Internet plus Programme* (from 2006-9 (SIP-2005-MD-038229; http://ec.europa.eu/information_society/activities/sip/index_en.htm). It examines research findings from 21 member states into how children and young people use the internet and new online technologies. This three year collaboration aims to identify comparable findings across Europe and to evaluate the social, cultural and regulatory influences affecting online opportunities and risks, along with children's and parents' responses, in order to inform policy. It is charting available data, pinpointing gaps and identifying factors that shape the research capability of European research institutions. Finally, it examines methodological issues relating to the cross-cultural study of children's online experience. See www.eukidsonline.net.

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1. Introduction

1.1 European research on children's online activities and risks

In many countries, within and outside Europe, children and young people are gaining access to the Internet and online technologies at a rapid pace. As a Eurobarometer survey on Safer Internet issues showed (EC, 2006), half of all children under 18 years old in the EU25 have used the Internet, with even higher figures applying to teenagers. However, there are substantial differences across countries (ranging from less than a third of children in Greece and Bulgaria to over two thirds of those in Estonia and Denmark).

To understand what these changes mean for children and their families, for their education, leisure, participation and community and, more negatively, for the risk of harm to children and young people, this growing use of the Internet and online technologies is being closely tracked by empirical research. Research teams across Europe are conducting empirical studies of varying range and depth, in order to advise policy-makers how best to maximise the benefits and minimise the risks associated with the changing media environment.

The collective findings of multiple research projects must now be integrated and their diverse insights brought into focus.

1.2 Why a comparative approach?

The *EU Kids Online* network is premised on the assumption that a cross-national perspective is vital, for children's experiences of online technologies may – or may not - differ in different countries; after all, countries vary in terms of family structures, education systems, attitudes to technology, media regulation, social values, and much more.

As each country seeks to balance the possible failure to minimise the dangers against the equally problematic failure to maximise the opportunities, cultural factors come to the fore. For example, protection of children is a universal value, yet in practice different countries – for reasons of religion, family structure, market competitiveness and media history – regard new online risks through a cultural lens, asserting their own priorities, often motivated by implicit values. To take another example, it may be that the incidence of risk is higher in countries where diffusion has come later, or where media literacy is lower.

Without a comparative perspective, national studies risk two fallacies – that of assuming one's own country is unique when it is not, and that of assuming one's own country is like others when it is not. Researchers and policy makers are faced with asking themselves, for example, whether research conducted in Germany applicable in Italy or whether findings from Northern Europe suggest lessons for new accession countries?¹

How should one avoid these fallacies? The body of available evidence raises crucial questions regarding expectations for, and interpretation of findings. Do we expect the risks faced by children in one country to be the same as those in another? What are the costs of assuming pan-European similarities, as a matter of convenience or pragmatism, potentially underestimating the importance of local contexts of use? As part of the wider effort of researchers and policy makers who seek a shared knowledge – of risks, of contexts and of local distinctiveness – this report presents a critical analysis of the ways in which European countries resemble in other as regarding children's online risk and safety, and where and why they may differ.

¹ Partly, this is a methodological matter, as explored in Work Package 4 ('Methodological Issues') of the EU Kids Online network, for one must determine whether survey methods developed in, say, Sweden are straightforwardly replicated in Belgium? Partly too, it is a matter of the availability of data, as examined in Work Package 1 ('Data Availability and Gaps').

1.3 The EU Kids Online network

The EU Kids Online thematic network comprises research teams in each of 21 countries across Europe, tasked with keeping track of recent and ongoing empirical studies. In order to provide a bridge between the specialist domain of empirical research and the policy imperatives of safer Internet initiatives, the EU Kids Online network is examining European research (national and multi-national) on cultural, contextual and risk issues in children's safe use of the Internet and new media. It focuses on the intersection of three domains:

- Children (mainly up to 18 years old), their families, domestic users;
- Online technologies: mainly but not only the Internet; focussing on use and risk;
- European empirical research and policy, prioritising the 21 countries in the network.

Working closely together since June 2006, the 21 national teams that comprise EU Kids Online have developed constructive working arrangements that capture diversity across member states and facilitate the identification of common patterns, themes and best practice.

EU Kids Online outputs are the collective effort of the EU Kids Online network. Network members meet several times per year and work in close contact electronically in between. The editors then integrate contributions and produce the final text for each report.

For further information, see Annex A and www.eukidsonline.net.

1.4 Scoping online risks and opportunities

The focal concern of EU Kids Online is children's online risks and opportunities – these are, therefore, our main dependent variables. Exactly what 'risks' and 'opportunities' includes is a moving target. But it may reasonably be scoped as follows:

Online opportunities	Online risks
<ul style="list-style-type: none"> ▪ Access to global information ▪ Educational resources ▪ Social networking for old/new friends ▪ Entertainment, games and fun ▪ User-generated content creation ▪ Civic or political participation ▪ Privacy for expression of identity ▪ Community involvement/activism ▪ Technological expertise and literacy ▪ Career advancement or employment ▪ Personal/health/sexual advice ▪ Specialist groups and fan forums ▪ Shared experiences with distant others 	<ul style="list-style-type: none"> ▪ Illegal content ▪ Paedophiles, grooming, strangers ▪ Extreme or sexual violence ▪ Other harmful or offensive content ▪ Racist/hate material/activities ▪ Advertising/commercial persuasion ▪ Biased/misinformation (advice, health) ▪ Exploitation of personal information ▪ Cyber-bullying, stalking, harassment ▪ Gambling, financial scams ▪ Self-harm (suicide, anorexia, etc) ▪ Invasions/abuse of privacy ▪ Illegal activities (hacking, downloading)

However, children's and young people's access to and use of online technologies occurs within a broader context – domestic, familial, social, cultural, political, economic, etc. Many factors may potentially influence their use in general and the risks they may encounter in particular. To organise the potentially vast array of factors, we have classified these factors as dependent, independent, mediating and contextual variables, as explained below.

1.5 Structure of the research field

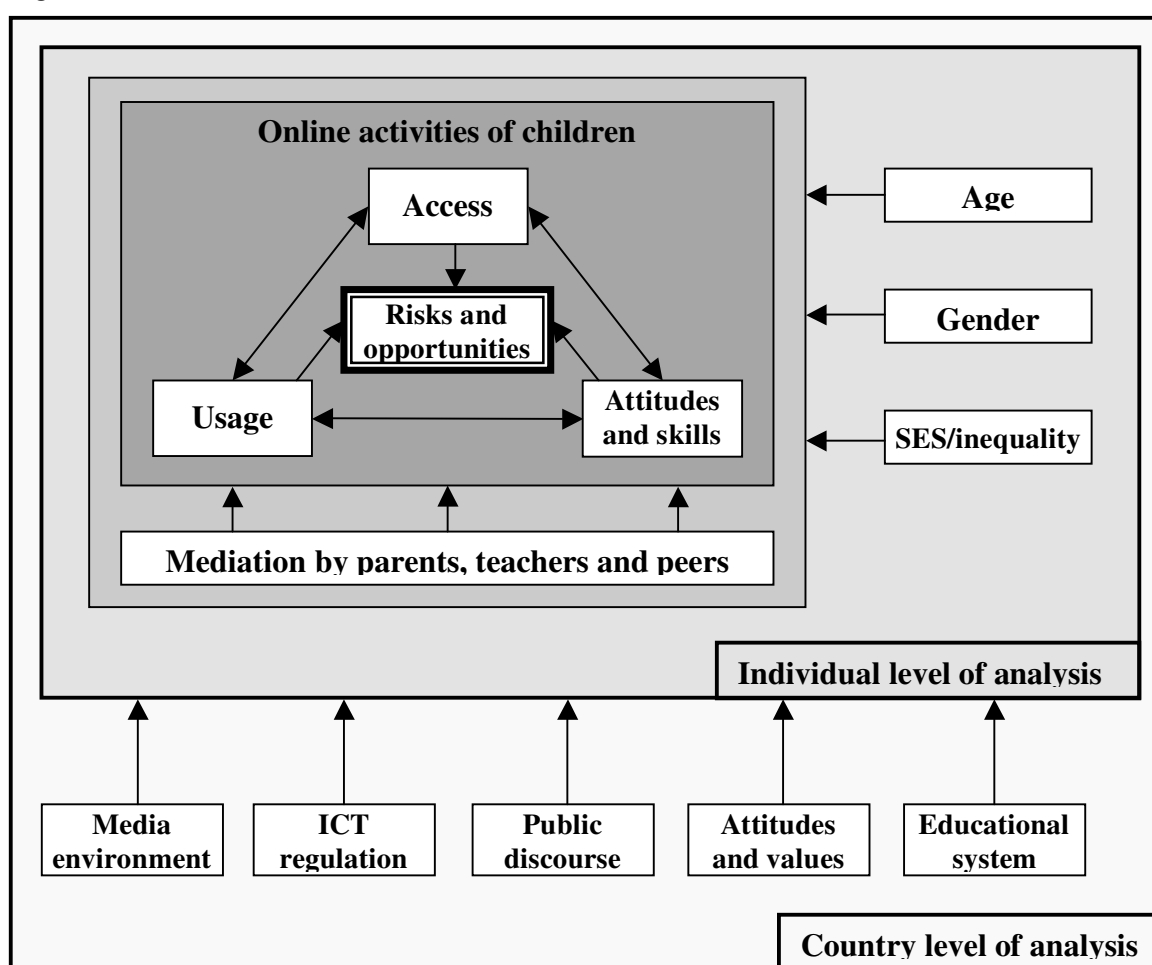
The experience of online opportunities and risks is expected to vary according to children's age and gender, as well as by the socioeconomic status (SES) of the household (or other stratifying factors such as parental education or urban/rural location). These socio-demographic factors are the main independent variables to account for differences in opportunities and risks, though others may arise as the research findings are examined.

These socio-demographic factors influence children's Internet access, online usage, and their related attitudes and skills. These latter may be considered mediating variables, for they are influenced by socio-demographic factors and they may influence online opportunities and risks.

Additional mediating variables are introduced by the activities of others – parents, teachers and peers. Parents mediate, or regulate, their children's online activities, thereby potentially influencing their experience of opportunities and risks. For teachers and peers, further influences may be expected, though these have been little researched. Such mediating processes may, in turn, be influenced by parents' own Internet use, or teachers' online skills, or domestic practices of media regulation more broadly.

Finally, we note key contextual variables likely to affect children's online experiences. These national or macro-societal factors include a) the media environment, b) ICT regulation, c) the public discourse on children's Internet use and possible risks of the Internet, d) general values and attitudes regarding education, childhood, and technology and e) the educational system. A framework that includes each of these key variables is shown in Figure 1.1.

Figure 1.1: Overview of the structure of the research field



The above figure provides a heuristic device for categorizing the key variables and specifying the hypothetical links among them. The research field is divided, first, into an individual (or child-centred) level of analysis for examining patterns of similarity and difference within countries; and second, into the country (or macro-societal) level of analysis for examining patterns of similarity and difference across countries.²

² It is not our intention to focus on the individual child separated from their social context but rather to show how children are located in a network of social influences at all levels from the familial to the societal. Analytically, it is useful to distinguish intra-country comparisons, for which the individual child is the unit of analysis, from inter-country comparisons, for which the country is the unit of analysis.

Thus, Figure 1.1 represents a working hypothesis by which observed similarities and differences across countries in children's experiences of online opportunity and risk may be explained in terms of the key variables identified in the research literature.

1.6 Classifying risks and opportunities

To analyse actual experiences with online risks and opportunities throughout Europe, we must bring together case studies on the national level. In these studies risks and opportunities are defined quite heterogeneously. In order to relate these studies to each other a systematic approach to the definition of Internet related risks has been developed.

The overall model is as follows (see Figure 1.2 for risks and Figure 1.3 for opportunities). Risks and opportunities refer to negative or positive experiences that might happen. Negative or positive experiences result from transactions between communicators, the content/services they provide and the user. The two necessary conditions for these transactions are:

- **Access:** This is the obligatory condition for any negative or positive experience related to the Internet and so may be regarded, in itself, as either "risk" or "opportunity". There will be differences between various places or occasions where children have access, e.g. at home, at school, with friends, which differ with respect to the degree of regulation or guidance by parents, teachers etc.
- **Usage:** Given access, the nature of children's use of online media is also a crucial condition of risk. The longer children use online media and the more they use certain services, the more likely they are to encounter certain negative or positive experiences. However, beyond children's preferences for more or less risky online activities, factors such as children's online skills and media literacy may exacerbate or alleviate risks.

In what follows, the model is explained for risks (see Figure 1.2). An equivalent model for opportunities is shown in Figure 1.3. The table on the top right side of Figure 1.2 classifies different types of risks. The starting point was to ask, "What processes lead to different risks?" The model assumes a transaction between communicative motivations and the role of the child when going online. The row headings of the table refer to the forms of communicative roles:

- **Content** – child as recipient (of mass communication)
- **Contact** – child as participant (of peer/personal communication)
- **Conduct** – child as actor (offering content or acting in personal contacts)

The column headings refer to motivations leading to risks – potentially problematic aspects of the provision of particular contents and services online. Each cell provides examples for the specific risk which arises from the transaction between the motivations and the child's role.

In the lower part of the figure we note which negative consequences or effects might follow from the four motivations and their transaction with the child's behaviour. An additional area of negative consequence is linked to usage: independent of risks which arise from negative motivations, time consuming online activities (sometimes interpreted as Internet addiction) may be negative consequences of Internet usage.

We have to note the limitations of this model:

- Sometimes boundaries are blurred (e.g. aggression and sexuality can co-occur).
- Issues of privacy and personal information cut across cells.
- Some categories (e.g. sexuality) cover rather different kinds of risk.

Figure 1.3 provides an equivalent table for opportunities. The three rows of the table stay the same, and four "positive motivations" have been defined - Education and Learning; Participation and civic engagement; Creativity; Identity and social connection.

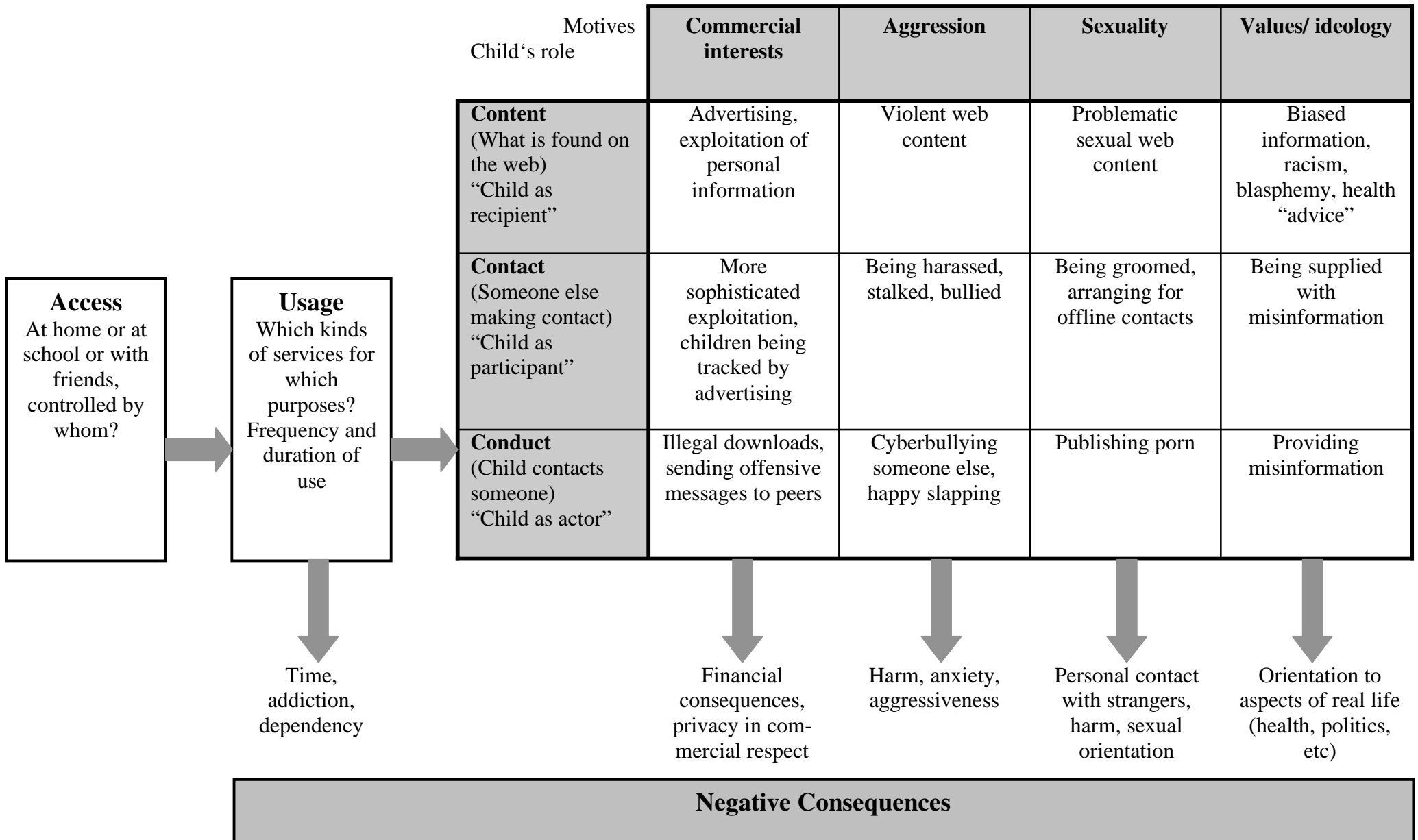


Figure 1.2: Risks as transactional results of access, usage, the child's role, and underlying communicative motives leading to negative consequences

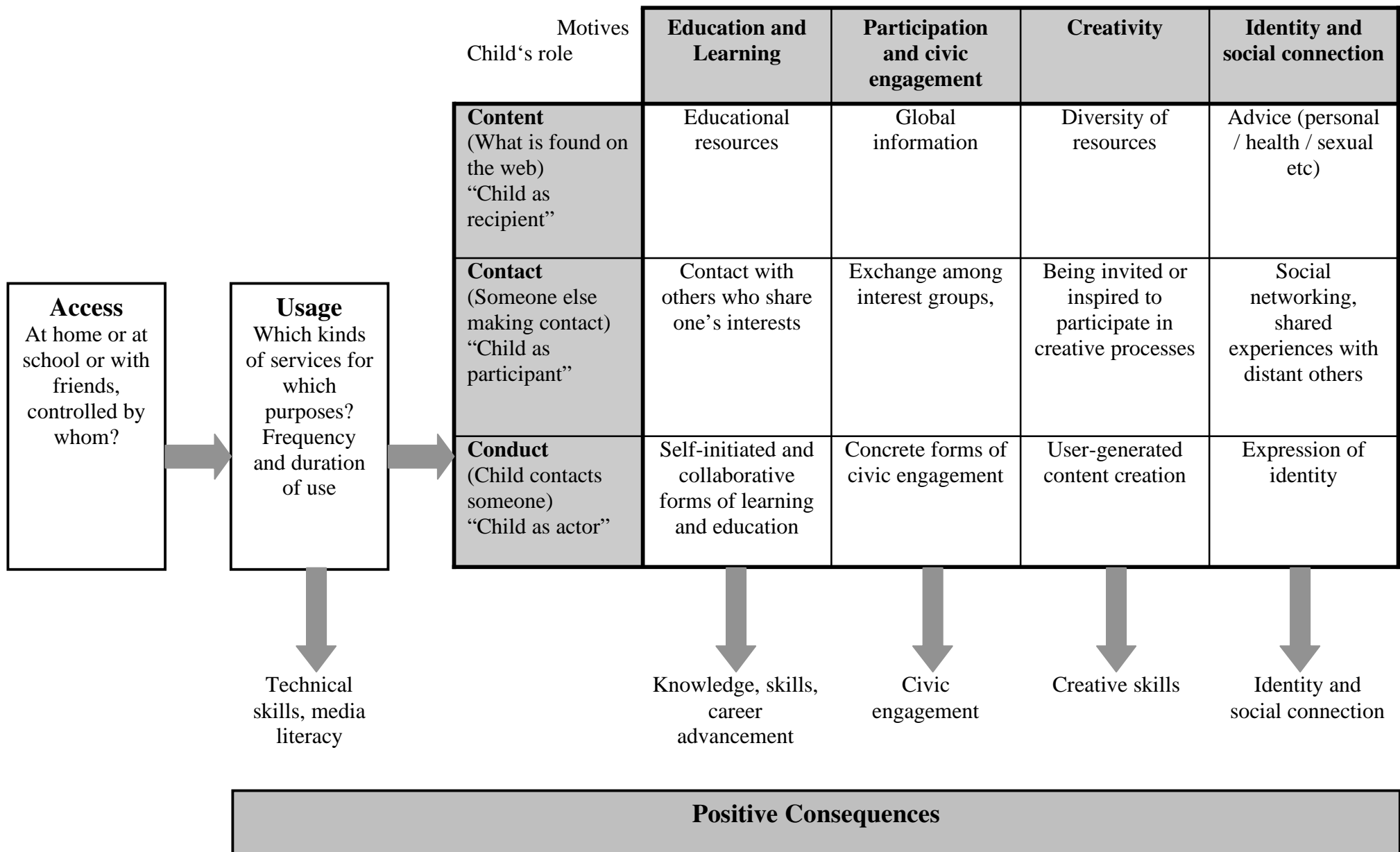


Figure 1.3: Opportunities as transactional results of access, usage, the child's role, and underlying communicative motives leading to positive consequences

1.7 Varieties of cross-national comparison

The core objective of the EU Kids Online network has been to systematically collect and compare findings regarding online risks and opportunities in Europe. To realize this objective, the network built on systematic considerations on comparative research elaborated by Kohn (Kohn, 1989) - see also Livingstone's work (Livingstone, 2003), who distinguished several types of comparative analysis.³

Type 1: Countries as objects in their own right

Treating countries as objects of analysis in their own right employs an idiographic lens. It aims to understand particular countries for their own sake, with comparison representing a useful strategy for 'seeing better' and so determining what is distinctive (or not) about a country (thus avoiding the above fallacies). Heuristically, this is generally achieved through the production of country reports, each of which presents empirical research findings regarding – in the present case – children, young people and online technologies.

As a first step of our analysis, EU Kids Online participating teams have contributed to the comparative analysis by producing country reports. To organise the work, and to aid judgements of similarity and difference, a template for national reports has been produced, which included concrete research questions and hypotheses, which were derived from the above model of the research field (see www.eukidsonline.net). The production of these country reports has drawn on the work completed for Work Package 1, in which national empirical research studies were identified, coded and entered into an online Data Repository available at the EU Kids Online website. The country reports are also available on the website.

Type 2: Countries as context for examining general hypotheses

This type of comparative analysis treats each country as a case study with which to test general theoretical models under different cultural conditions. It focuses on the assumption of similarities across countries, with cross-national differences thus challenging or limiting pan-national claims. As for type 1, this analysis may be modest in its attempt to capture the complexity of each country compared, but it is more ambitious insofar as it seeks to test the hypothesised universality of a particular phenomenon, pooling findings from many countries in order to establish whether and how an abstract theory applies in each one of those countries.

General hypotheses that were examined concern age trajectories (on the assumption that children develop into teenagers and adolescents similarly across Europe) or gender differences (again, shown to be fairly similar cross-nationally by a range of research) or, additionally, parental mediation of online use by children. Clearly, this type of analysis requires directly comparable data in each country, and the EU Kids Online network had to consider the extent to which such data are available in all participating countries.

As the second step of our approach, some network members focused on single research questions and compared the evidence provided by the country reports. In doing so they examined to what extent the results from different countries support the original hypotheses or provide similar answers to the open research questions. In the case of differences between countries they discussed possible classifications of countries, which systematically reflect these differences.

As the third step of our approach some members of the network were nominated to write a summary report on one of the main sections of the model of the research field (access and usage, risks and opportunities, attitudes and skills, mediation by parents, teachers and peers). In doing this the authors also checked whether there is – beyond the evidence from national research – some kind of evidence provided by international studies, particularly the Special Eurobarometer on Safer Internet issues of 2005/06 (EC, 2006). These summaries are documented as chapter 2 of this report.

Type 3: Countries as units in a multidimensional analysis

This type of analysis seeks to explain patterns of similarities and differences across countries. It thus prioritises the identification of measurable dimensions (for which there is available data) on which nations

³ Kohn also identifies a fourth level, the transnational, but this is not applied in the present case.

vary, and then examines whether these are related systematically to each other or to a particular measure of concern (e.g. incidence of online risk to children). Each participating nation thereby serves as one unit or data source, and must provide measures of both potentially explanatory variables (independent variables) and variables to be explained (dependent variables).

The strength of this approach is that it seeks to understand the diversity of different national contexts, achieving this by re-presenting the specificity of each country using a common conceptual language (i.e. in terms of the interrelations among the multiple dimensions on which each country is compared). It then develops an explanation for observed differences.⁴

In our approach we organised the comparative research by combining two steps:

- Firstly, on the basis of the above described analysis of indicators for children's and teenagers' online behaviour, classifications of countries were identified, which represent differences and similarities between the countries on the level aggregated individual behaviours, e.g. the incidence of online risk experienced by children and young people, or the incidence of online opportunities taken up by children and young people, or the nature and extent of parental activities that mediate children's online activities.
- Secondly, the EU Kids Online network identified European similarities and differences in macro-societal factors like a) the media environment, b) ICT regulation, c) the public discourse on children's Internet use and possible risks of the Internet, d) general values and attitudes regarding education, childhood, and technology and e) the educational system (see above, figure 1.1).

For example, it was asked whether certain political conditions or regulatory policies (e.g. pricing policy, regulation instruments) lead to more or less risk and opportunities in a country. Or, whether a greater degree of Internet diffusion results in less or more risk to children when they go online.

The procedure was similar to the comparative analysis on the individual level. Some members of the network were nominated to write a summary report on single contextual factors and to compare the evidence provided by the country reports. In doing this the authors also checked available international comparative statistics which allow a classification of the countries. These summaries are documented in chapter 3 of this report, together with an analysis of the extent to which the contextual factors allow for an explanation of the differences and similarities of children's online behaviours and risk experiences as described in chapter 2.

1.8 The organisation of this report

The structure of the report follows the above logic of our comparative approach. Chapter 2 contains the comparative analyses on research questions and hypotheses on the individual level.

It ends with conclusions a) with regard to theoretical assumptions on online risks and opportunities (ch. 2.5.1), and b) with regard to meaningful classifications of the European countries concerning children's online behaviour (ch. 2.5.2).

Chapter 3 describes relevant contextual factors for children's online activities and discusses to what extent they explain the aforementioned differences and commonalities in online behaviour.

Chapter 4 provides a short summary of the findings and conclusions.

The report mainly builds on the country reports from all the EU Kids Online partners. In many cases, references to concrete studies on the national level are not provided in detail here; however the respective country reports are available on the EU Kids Online website. Whenever there are substantial quotes or detailed findings from national studies, reference is made to the respective entry in the EU Kids Online Data Repository, the searchable online database of research on children's online use and related risks and opportunities. These references read as "DR #xyz" for the respective number of the study in the data repository.

⁴ 'The Children and Their Changing Media Environment; project (Livingstone & Bovill, 2001) exemplifies this approach, for it sought to understand how systematic differences in education, wealth, parenting, etc. were associated with differences across countries in children's media use, including adoption of new media. Thus it examined the correlations between national wealth (e.g. GDP), or degree of ICT diffusion, and the dependent variables of children's media use; this model expects to find neither similarities nor differences, simply, but rather to find a model that applies across all nations that explains differences observed among them.

2. Children and young people's internet use: Comparing across countries

This chapter compares countries with regard to differences and commonalities in children's and young people's internet use. The empirical basis comparison is provided by international and national studies of online use and online risks on the individual level. Results are presented in four sub-chapters: access and usage (2.1), risks and opportunities (2.2), attitudes and skills (2.3), and mediation by parents, teachers and peers (2.4). Each subchapter reviews the general descriptive evidence regarding the key variables across countries. We then analyse the extent to which these criteria vary according to age, gender, SES, etc.

Subchapter 2.5 will discuss the theoretical consequences of the comparative analysis: Which hypotheses have been confirmed, which hypotheses need further investigation, which ones have been falsified, and how can all this be integrated in one coherent model? Secondly this chapter will discuss the issue of classifying countries on the basis of how children use online media and which kinds of risks they experience. This classification will provide one part of the input for chapter 3.

2.1 Access and usage⁵

2.1.1 Parents' and children's internet use

Research question R2.1.1: What/how much access to the internet and online technologies do children have?

Access to the Internet and other online technologies is the necessary condition for any use and any risk and opportunity for children. During the diffusion process from its early stages through to market saturation, measures of access differentiate among households (and countries) in terms of digital inclusion or exclusion. As the diffusion process proceeds, concrete aspects of internet access (bandwidth, flat rates etc.) become more relevant than the simple fact of access. Some information on how many children are able to access the internet can be inferred on the aggregate level from national statistics on the percentage of households and schools connected to the internet (see chapters 3.1 and 3.5). Beyond this indirect evidence the search for comparable data for the countries regarding children's potential access led to an incomplete and fragmented picture composed of evidence from national surveys with different instruments, different time frames and different populations. Since this weak empirical basis does not provide substantial information regarding differences between the countries the following analysis will focus on the question how many children and young people actually use the internet and where they use it.

Since the Eurobarometer of 2005/2006 (EC, 2006) provides comparable data for most of the countries involved in the EU Kids Online project (except Norway and Iceland), these data will be taken as the point of reference; empirical evidence from national studies will be considered when they hint at shortcomings of the Eurobarometer data or promise to go beyond the respective comparative findings. The data provided by the Eurobarometer survey are based on parents' answers only; as has been discussed in more detail in another report of the EU Kids Online network (Lobe, Livingstone, & Haddon, 2007), the results of parents' and children's interviews can differ quite substantially, thus the Eurobarometer data have to be interpreted as one indicator for the respective phenomenon only.

Research question R2.1.2: How much use of the internet and online technologies do children make?

In late 2005 the number of children using the internet varied considerably across Europe (see table 2.1, 1st column). While in some countries between two thirds and three quarters of the children went online, the respective value for other countries was one third or even less. By and large, these differences are reflected by the empirical evidence provided by other studies on the national level. Thus we take this important indicator as a criterion to define three country groups⁶:

⁵ This chapter has been written by Uwe Hasebrink based on comparative analyses by Vaclav Stetka (R2.1.1, R2.1.2), Uwe Hasebrink (H2.1.1, H2.1.2, R2.1.4), Helen McQuillan (H2.1.3), and Cédric Fluckiger & Benoit Lelong (H2.1.4).

⁶ For this classification we only include the countries, which are involved in the EU Kids Online project.

- Group 1 includes those countries involved in the EU Kids Online project, in which more than 65 per cent of all children use the internet (BE, DK, EE, NL, SE, UK); on average 68 per cent of the children in these countries use the internet; as evidence from other studies shows, Iceland and Norway also belong to this group;
- Group 2: countries, in which more than 40 and less than 57 per cent use the internet (AT, CZ, DE, FR, IE, PL, SI); on average 50 per cent internet users;
- Group 3: countries, in which less than 39 per cent use the Internet (BL, CY, ES, GR, IT, PT); on average 33 per cent internet users.

Table 2.1: Internet use among adults, parents and children
(in order of children's internet use)

	Child's use (%) ¹⁾	Adults' use of the internet (%) ²⁾		Who uses the internet – parents and/or child? (%)			
		Only parents	All respondents	Neither parents nor child	Only parents	Only child	Parents as well as child
EU 25	50	65	47	23	27	12	38
Netherlands	72	97	85	2	26	2	71
Denmark	70	95	76	3	27	3	68
Estonia	68	83	54	6	26	11	57
Norway**	68	100	80	0	33	0	68
Iceland*	67	97	86	3	30	0	67
Finland	66	97	69	1	33	3	63
Sweden	66	98	85	1	33	1	65
Belgium	65	80	63	10	25	9	55
United Kingdom	65	67	58	17	19	16	49
Luxembourg	60	83	57	8	33	9	51
Czech Republic	57	66	50	21	22	13	44
Malta	57	39	31	34	9	27	30
Slovenia	57	71	53	17	26	13	44
France	54	68	53	17	29	15	39
Latvia	53	53	40	27	20	20	33
Lithuania	53	48	32	28	19	24	29
Austria	51	75	54	15	33	9	42
Germany	47	78	60	15	38	8	39
Poland	47	42	34	37	16	21	26
Slovak Republic	45	55	43	27	28	17	28
Hungary	43	40	29	39	17	21	23
Ireland	42	59	51	29	28	12	30
Portugal	38	32	23	49	13	20	19
Spain	37	50	41	37	26	14	23
Italy	36	55	49	37	27	8	28
Cyprus	33	37	30	43	25	21	12
Bulgaria	29	35	30	52	19	13	16
Romania	28	34	31	53	20	14	14
Greece	26	30	25	54	20	16	10

Source: Eurobarometer 64.4 – Special No. 250: Safer Internet, December 2005; basis: parents/guardians with children less than 18 years.

*Estimate for Iceland 2005, based on SAFT parent surveys in 2003 and 2007

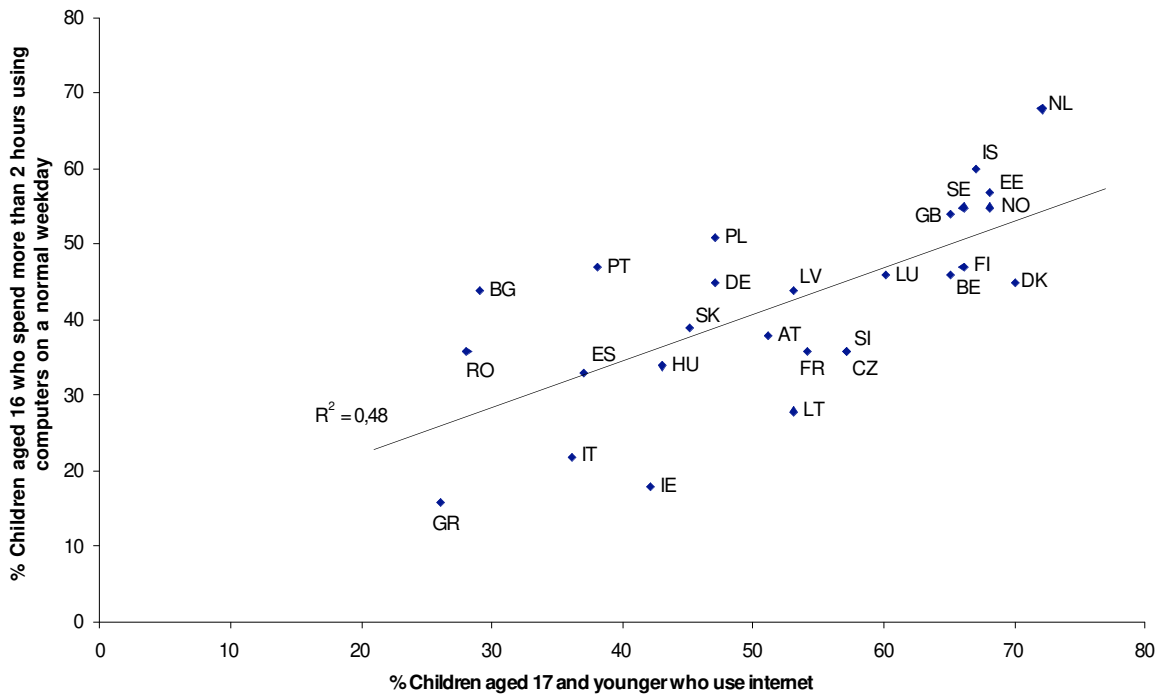
**Estimate for Norway 2005, based on SAFT parent survey in 2005

¹⁾ All children whose parents claim that their child uses the internet at any place (recoded variable based on QC4.1-6).

²⁾ All adults who rejected the statement „I do not use the internet“ (QC1.6).

The relative position of the countries regarding children's likelihood to use the internet is confirmed by another internationally comparative data base, which has been collected in the framework of a WHO study (see figure 2.1). Deviations between the two sources can be observed particularly for Portugal and Bulgaria (the WHO study provides higher percentages than Eurobarometer), and Ireland (the WHO study provides lower percentages).

Figure 2.1: Countries by children's internet use according to two data sources



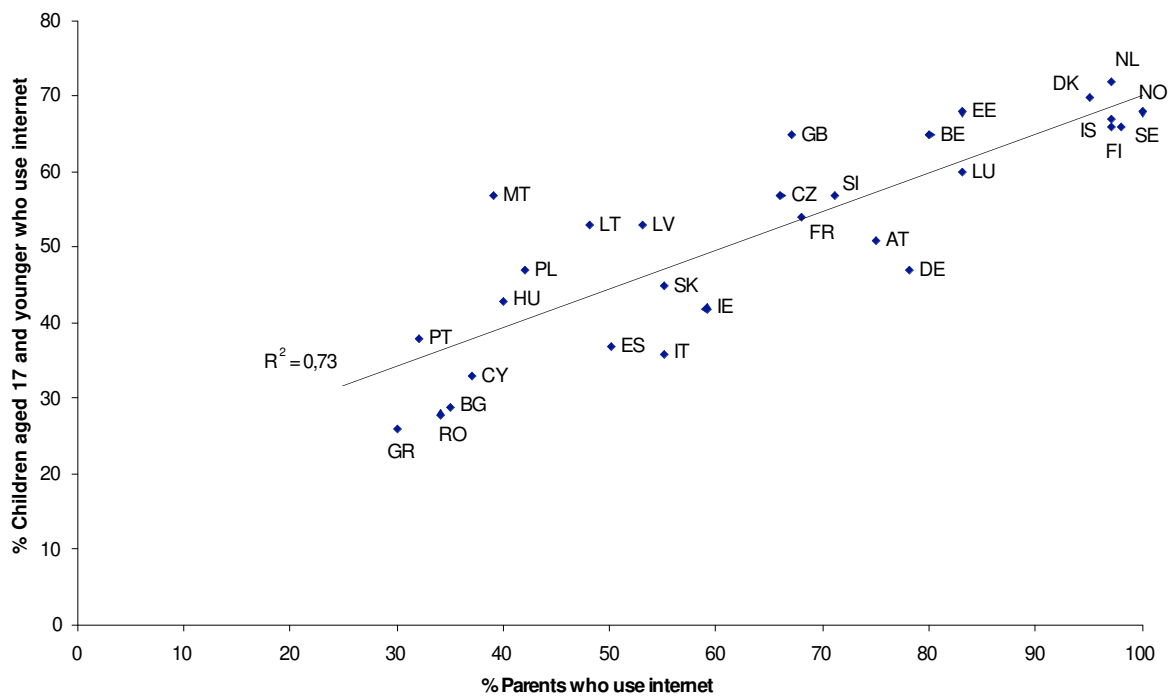
Sources: a) percentage of children aged 17 and younger using the internet: Eurobarometer 64.4; proportion of children who spend two hours or more using a computer (Currie et al., 2008).

Research question R2.1.3: What is the relation between parents' and children's internet use?

Table 2.1 reveals the relationship between children's and their parents' internet use. There is an obvious correlation between parents' and children's internet use across Europe (see figure 2.2).⁷ In most countries, the number of parents online is higher than the number of children; on the European level this difference is 15 per cent (parents: 65%, children: 50%). There are some exceptions: in Poland and Portugal (and in Lithuania, Latvia, and Malta) children are more likely to use the internet than their parents.

⁷ The Pearson correlation between columns 1 and 2 across the 27 countries is r=.84.

Figure 2.2: Countries by parents' and children's internet use



Source: Eurobarometer 64.4.

The overall result seems to contradict the expectation that children are more likely to be online users than their parents' generation. This contradiction can be solved by looking at the age of the children: The higher likelihood for parents to use the internet is only based on parents with younger children: For parents with children less than six years the values are 63% for parents and 9 % for children; for parents with children between 6 and 11 years the values are 64% and 51% respectively. However, for the oldest group the opposite relation can be observed: 87 per cent of young people between 12 and 17 years are online and only 65 per cent of their parents.

Hypothesis H2.1.1: Children whose parents use the internet are more likely to use the internet themselves.

On the European level children whose parents claim to use the Internet themselves are significantly more likely to use the Internet (58%) than those children whose parents do not use the Internet (34%). This finding can be confirmed for most of the countries involved in the Eurobarometer study. The only exceptions are Finland, Sweden, Estonia. In addition the findings from the Netherlands and Denmark are only marginally significant. This group includes exactly those countries, in which almost all parents use the internet, thus there is no relevant difference anymore: all children grow up with parents who use the internet anywhere. Beyond these five countries Cyprus remains a noticeable exception, where the internet use of parents makes no difference at all. At the other end of the spectrum we find the following countries with substantial differences in children's internet use depending on their parents' internet use: Italy (difference between the groups: 32%)⁸, Portugal (30%), Czech Republic (29%), Poland (26%), Bulgaria (25%). In these countries children's internet use depends heavily on their parents' support.. This might be interpreted as indicator of lower public support for internet access in these countries.

So far we have compared the general use of the internet, no matter whether parents and children use it at home or at another place. An even higher correlation can be observed between parents' and children's internet use *at home*: There are highly significant results for all countries indicating that children whose parents access the internet at home are more likely to use the internet at home than children whose parents do not use the internet. On the European level this difference is remarkable: whereas 61% of all children whose parents use the internet at home use it themselves, the figure for the other group is only 9%.

⁸ Explanation for the example of Italy: 50.6 per cent of the children whose parents use the internet use the internet themselves; 18.3 per cent of the children whose parents do not use the internet use the internet themselves.

These general findings support the assumption that parents' behaviour is an important determinant of children's internet use. However, the correlation might also reflect the fact that parents follow their children's needs and wishes and try to provide what they regard as optimal conditions for their children's development. Following the public discourse on the relevance of the internet in today's society many parents believe that their children should be familiar with the internet as early as possible. There is some evidence that the relationship between parents' and children's internet use can be interpreted from this perspective. As research has shown in many countries, households with children are better equipped with media devices; this is indirectly confirmed by the Eurobarometer data: Among those who have at least one child in their household, the percentage of internet users in the EU of 25 member states is almost 20 per cent higher (65%, 2nd column of table 2.1) than for the average population (47%, 3rd column). This kind of difference can be observed in all countries.

To get another indicator which can support the hypothesis that parents tend to get access to the internet in order to provide opportunities for their children, we analysed whether parents' internet use at home varies with the child's age. The rationale is as follows: if parents' internet use at home was completely determined by their individual needs there should be no difference between parents of younger and older children. However, if parents turned to the internet when they think their children should have access or their children ask to have access, parents of older children should be more likely to use the internet.

The latter thesis is confirmed on the European level: on average 49 per cent of the parents claim to use the internet at home. This figure is higher for parents with children between 12 and 17 years (52%) and lower for parents with children younger than six years (44%). Bearing in mind the fact that this analysis cannot consider the age of the other children in the household, this significant finding supports the assumption that there is no unidirectional influence from the parents to their children, but also an influence of children on their parents' behaviour. However there are also alternative explanations for this finding. Firstly, family income usually increases as the parents get older and therefore internet access could be an expense postponed by younger parents. Secondly, parents often have easy access to the internet at work and therefore might feel no need to connect the home until the child is old enough to want to go online.

To sum up these analyses, the four columns on the right hand side of table 2.1 show the four logical combinations of parents' and children's online use. On the European level the biggest group is made up by those cases where the parents as well as their children are online (38%). For more than a quarter of the cases we find the constellation of the parents being online and no internet use of the child. In another group of less than a quarter neither parents nor children are online. The remaining 12 per cent refers to children who use the internet whereas their parents do not. Across the countries the distribution of these four groups necessarily varies with the general percentages of internet users in columns 1 and 2.

What merits further consideration regarding online risks and how children and parents cope with them is the unequal distribution of the 3rd and 4th groups in different countries: In some countries, particularly in Sweden, the Netherlands, and Denmark (and also, as can be inferred from the SAFT survey, Iceland and Norway), almost all children who use the internet have parents who are also familiar with the online world and thus can advise or at least understand what their children are doing. At the other side of the spectrum the majority of children online in Greece, Cyprus and Portugal, i.e. three countries with only a few children online, cannot count on their parents' competences since they do not use it. For these countries, the impression is that there is dissociation between children's internet use and parental behaviour. This dimension does not simply reflect the likelihood of children and parents being online in the different countries, because there are some other countries with a low likelihood of children (and parents) being online, which do not have this high proportion of children who cannot learn from their parents (e.g. 22% in Italy).

2.1.2 Locations of children's internet use

These analyses raise the question of where children in Europe have access to and use the internet.

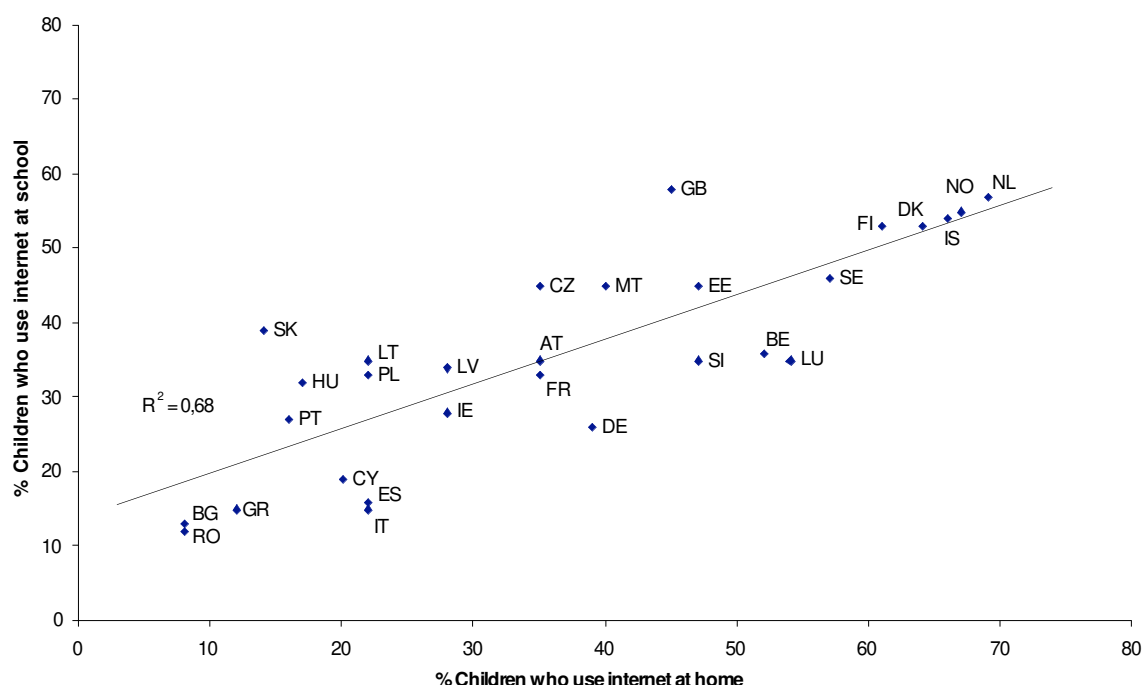
Research question R2.1.4: Where do children in Europe use the internet?

With respect to the question where children in Europe use the internet, the most important locations are their home (34%, see table 2.2) and school (33%). In addition quite a few children use the internet at a friend's home (16%). On the European level the other options are only marginally relevant: at somebody else's home (5%), in an internet café (3%), in a library or other public place (4%) or somewhere else (2%).

Based on the aforementioned locations for internet use an index has been calculated, which reflects the number of locations where children use the internet (see table 2.2, 1st column). On average young internet users in the EU go online at 1.9 locations. Again there are noticeable differences between the countries; the extremes are Sweden (2.8 locations) and Denmark (2.7) on the one side and Italy (1.3), Bulgaria, Greece and Spain (1.4 respectively) on the other side. Since this index has been calculated on the basis only of those children who use the internet, the results are not confounded with the general likelihood of internet use. The strong positive correlation across the 27 countries listed in table 2.1 between internet use and the number of locations where children go online ($r=.88$) reflects the general diffusion process of the internet. In those countries where the diffusion process started earlier, the higher number of children who are online goes along with a more diverse set of locations where children use the internet.

Looking at single countries we find interesting differences where children use the internet. One striking difference can be observed (see the shaded cells in table 2.2, 2nd and 3rd column, and figure 2.3) between countries where the internet is more often used at home (the Netherlands, Denmark, Sweden, Belgium, Slovenia, Germany, Spain and Italy) and others where the school is the most important place for children to go online (the UK, the Czech Republic, Poland, Portugal, Bulgaria, Romania, and Greece); in Estonia, France, Austria, and Ireland both places are equally important.

Figure 2.3: Countries by location of children's internet use



Source: Eurobarometer 64.4.

Further relevant differences are related to internet cafés on the one hand and libraries or other public places on the other hand. Internet cafés, i.e. the most commercialized option to go online, are most often used in countries with generally low percentages of internet users and particularly low figures for libraries and other public places (e.g. Bulgaria and Poland). On the other side, the Nordic countries obviously provide better online access at public places.

In order to provide a simple indicator for the comparison across the countries involved, we defined two groups of internet users: a) those who access the internet at home and, maybe, also at other places; b) those who access the internet at school and, maybe, at other places, but not at home. On the European level 68 per cent of all young internet users belong to the first group, they have access to the internet at home and at other places; 32 per cent do not use the internet at home but at school or any other place. Looking at the results on the country level leads to a classification of three groups:⁹

⁹ Again, this classification does only include the countries, which are involved in the EU Kids Online project.

- Group 1: Countries, in which more than 80 per cent of the young online users access the internet at home. In this respect the highest values are reached in Norway (100%), Iceland (99%), the Netherlands (96%), Sweden (93%), and Denmark (91%), other members of this group are Slovenia (83%), Germany (83%), and Belgium (81%).
- Group 2: Countries with more than 58 and less than 70 per cent using the internet at home. The countries in this group are the UK and Estonia with 60 per cent young internet users who are online at home, the following countries are Ireland, Austria, France, Cyprus, Czech Republic, Italy, and Spain (59%).
- Group 3: Countries with less than 50 per cent of young online users who use the internet at home. These are Poland (48%), Greece (44%), Portugal (42%), and Bulgaria (27%).

Table 2.2: Children's online use at different places
(in order of children's internet use at any place)

	Average number of locations	At home* (**)	At school (***)	At a friend's home	At somebody else's home	In an internet café	In a library or other public place	Somewhere else	Index "not at home"
EU 25	1.9	34	33	16	5	3	4	2	32
Netherlands	2.7	69	57	43	17	1	5	2	4
Denmark	2.7	64	53	36	16	3	11	5	9
Estonia	2.2	47	45	30	10	5	11	3	31
Norway**	nd	67	55	9	nd	nd	1	Nd	0
Iceland*	nd	66	54	11	nd	nd	4	Nd	1
Finland	2.4	57	46	30	9	1	14	2	13
Sweden	2.8	61	53	45	7	4	10	4	7
Belgium	2.1	52	36	26	10	3	6	1	19
United Kingdom	2.2	45	58	20	11	2	9	2	31
Luxembourg	2.0	54	35	20	3	3	4	1	9
Czech Republic	1.9	35	45	17	2	2	6	1	39
Malta	1.9	40	45	12	4	3	2	0	29
Slovenia	2.0	47	35	17	5	0	8	1	17
France	1.9	35	33	23	6	1	4	2	35
Latvia	1.8	28	34	19	4	5	8	1	48
Lithuania	1.7	22	35	18	3	8	5	2	59
Austria	2.0	35	35	22	4	4	2	0	33
Germany	1.9	39	26	16	1	2	1	2	19
Poland	1.6	22	33	9	2	8	3	1	53
Slovak Republic	1.8	14	39	12	2	8	4	1	70
Hungary	1.6	17	32	9	3	1	4	1	61
Ireland	1.7	28	28	9	2	0	3	2	33
Portugal	1.5	16	27	6	2	1	4	1	58
Spain	1.4	22	16	4	1	3	1	3	41
Italy	1.3	22	15	5	2	1	2	1	39
Cyprus	1.7	20	19	11	2	1	0	1	38
Bulgaria	1.4	8	12	4	2	15	0	0	73
Romania	1.6	8	13	6	5	11	1	2	71
Greece	1.4	12	15	4	1	4	0	0	56

Source: Eurobarometer 64.4 – Special No. 250: Safer Internet, December 2005; basis: parents/guardians with children less than 18 years.

* Estimate for Iceland 2005, based on SAFT parent surveys in 2003 and 2007

** Estimate for Norway 2005, based on SAFT parent survey in 2005

*** Shaded cells in column 2 and 3 indicate that the value is higher (at least 3%) than the value in the other column.

These groups are quite similar to the classification on the basis of general internet use,¹⁰ which indicates that there is a general diffusion process of the internet, with internet access at home becoming the normal

¹⁰ The Pearson correlation across the 27 countries between the percentage of children being online and the percentage of "not accessing the internet at home" is $r = -.76$.

condition for children and young people. However, there are some remarkable differences between the classifications. Within the group with the highest proportion of internet users, Estonia and the UK are less focused on home use than the other countries; this might be an indicator for a particularly ambitious public policy, which supports internet use at schools and other public places.

Within the second group, Slovenia is much more home oriented than the other countries with similar percentages of online users (Austria, France and the Czech Republic); and for the rest of this group there are completely heterogeneous results regarding the relevance of home and school use: Whereas in Germany only 19 per cent of the internet users are not online at home, this figure is much higher in Ireland (33%) and particularly in Poland (53%).

Finally, the third group is divided into Cyprus, Italy and Spain with a moderate relation between home and school use on the one hand, and Bulgaria, Portugal and Greece with very high percentages of young internet users who do not use the internet at home but at school or elsewhere. To what extent these differences between the countries can be explained by different political and cultural conditions will be examined in chapter 3.

In all, the European countries differ quite substantially regarding the place where children use the internet. Since it is likely that the places where children are online are connected with specific risks, the countries provide quite different conditions for potential harmful experiences and for political and pedagogical means to support a safer use of the internet; this will be discussed in more details in the next chapters.

2.1.3 Positional factors influencing children's internet use

The following analyses focus on the question of the extent to which basic positional variables shape access to online media and the frequency and duration of use. The factors to be analysed here are age, gender, and socio-economic status.

Hypothesis H2.1.2: As children get older their access to and use of the Internet and online technologies increases.

The evidence as provided by the national reports refers to different empirical levels:

- Children's access to the Internet,
- Time and frequency of use of the Internet in general,
- Time and frequency of use of specific online applications,
- Time and frequency of use of the Internet at different places.

In general all evidence provided for all countries (if available) supports the hypothesis that there is a steady increase of access to and use of the internet and online technologies with age. Beyond this general result, for some of the countries there are some contradicting or contextualizing findings:

- Findings from countries with higher internet penetration indicate that the increase of access to and frequency of use of online media stops around the age of 12/13 years; this is due to a ceiling effect, since from this age on almost all young people use online media.
- For those countries which report contradicting or ambivalent findings, there are specific reasons. In the Czech Republic the fact that survey respondents were 12+ years, might have resulted in the absence of no age differences (see the argument above). In Poland there is evidence that 13-15 years old young people use the Internet more often than those aged 16-18. A similar finding is provided for the UK: those aged 16/17 years old use the internet more often than the older age group.
- The French report hypothesizes that the difference between 9-10 and 12-14 old children regarding the amount of use (and not the frequency of use) is due to parental mediation: for the younger group the parents restrict the time their children spend with the Internet.
- The Greek report emphasizes that the range of services used clearly increases with age.
- According to a hypothesis from the Polish report, one reason for a decrease of online use between 13/14 and older is specifically the decreasing interest in (online) gaming.

The comparative analysis runs into problems in so far as the respective findings refer to different age bands and different indicators of use. Thus it is difficult to analyse the development on a more detailed level. For this reason, a secondary analysis of Eurobarometer data has been run, in order to have some indicators on the basis of comparable data and a large sample, which allows for the analysis of small age bands. The limitations of these data are twofold: they are based on statements of the parents only, and they refer to the simple fact, whether children have used the internet, whereas there is no indicator for the frequency and amount of use.

According to these data the proportion of children who use the internet increases significantly as they grow older (see table 2.3). It is interesting to note that the peak of the diffusion of the Internet is already reached at about 12 or 13 years, after that there is only a very small increase. The figures for boys and girls are quite similar. The small overall difference is based on children between 6 and 9 years: boys seem to start using the internet earlier, whereas there are no difference between 10 to 13 years old boys and girls.

Table 2.3: Internet use by age and gender
(EU 25, %)

	Total	Boys	Girls
< 6 years	9	9	9
6-7 years	34	37	30
8-9 years	51	55	47
10-11 years	68	67	69
12-13 years	85	85	84
14-15 years	87	90	84
16-17 years	88	88	88

Source: Eurobarometer 64.4 – Special No. 250:

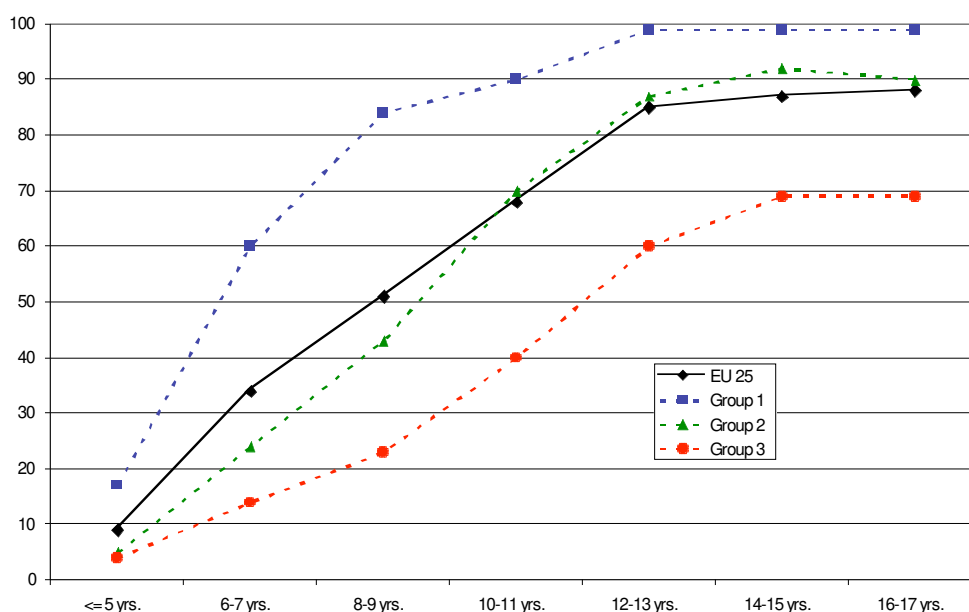
Safer Internet, December 2005;

basis: parents/guardians with children less than 18 years.

Since these aggregate figures might hide specific developments dependent on the general internet diffusion in the countries, the respective figures have been calculated for the three groups of countries, which have been defined above on the basis of the percentage of children who are online.

Figure 2.4 shows that all three groups show similar figures in two respects. Firstly, the use of the Internet steadily increases with age. Secondly, after the age of 12-13 years this increase is only very small – if at all.

Figure 2.4: Children who have used the Internet by age and country groups
(in per cent of all children)



Source: Eurobarometer 64.4 – Special No. 250: Safer Internet, December 2005; basis: parents/guardians with children less than 18 years.

Beyond these similarities, there is a significant difference between the three country groups: in the countries with a higher internet use children are much younger when they start to use the internet. As a consequence one can say that online users in countries with a high level of internet use are younger (for group 1 the average age is 11.5 years) than online users in countries with a lower level of internet use (for group 4 the average age is 12.7 years).

As these data show, the general hypothesis is widely supported. On the European level, there is a steady increase in the proportion of children who use the Internet; the older the children the more likely they are to use the internet. Beyond that there is evidence that the increase with age reaches a plateau quite early: the differences between the group of 12-/13 years old children and the older groups are rather small – if at all.

However, when looking at country groups, which differ regarding their general internet penetration, quite specific patterns of age related developments can be observed. The difference between countries with a high versus a low amount of internet use is mainly based on the younger age groups. In countries with a lower level of internet use, children start to get access to and to use the internet later. As a consequence, online users in these countries are older than online users in countries with a high level of online use.

Regarding the promotion of safer internet use, the fact that the internet is already a normal tool for children at the age of ten years and increasingly becoming an attractive tool for those between 6 and 10 years emphasizes the need to develop measures supporting Safer Internet for all age groups – according to the respective functions, for which children go online. Until now, only few younger children have used online media in those countries with lower internet penetration; in these countries the target group is older. Dependent on further findings on how age differences affect which risks children encounter (see chapter 2.2), this difference in age must be considered when promoting Safer Internet in different countries.

Hypothesis H2.1.3: There are no gender differences in children's access to or amount of use of online technologies.

The hypothesis that there are (no longer) gender differences regarding children's access to and use of the internet is fully supported in only one country: Denmark. Evidence in 11 countries contradicts the hypothesis: Poland, Norway, Austria, Belgium, Bulgaria, Czech Republic, Sweden, France, Portugal, Slovenia, and the Netherlands. Contradictory results come from 6 countries, with evidence that both supports and challenges the hypothesis: Estonia, Germany, Iceland, Ireland, Italy and the UK. No evidence is available for three countries: Greece, Spain and Cyprus.

According to the reports gender gaps in access to the internet are small and are closing in nearly all countries, particularly for younger children. In the UK, this pattern is more evident among older children. However, in almost every country, boys are more likely than girls to spend greater amounts of time online, have more places to access the internet from, have their own computer and internet access and have access to a PC and internet in their bedrooms.

Several patterns are emerging:

- Gender gaps in access are diminishing as home and school internet access becomes more commonplace.
- There is a growing bedroom culture for teenagers and solitary use of the internet is increasing, particularly for boys.
- The amount of time spent by boys and girls online is increasing in all countries.

Age seems to be crucial. Consideration needs to be given to the examination of different age groups.

Further evidence on this issue can be drawn from the Eurobarometer survey. Table 2.4 shows how many girls and boys in different age groups use the internet at which location. There is a slightly higher percentage of boys (52%) who use the internet at any place (compared to 49% girls). This difference comes out to be significant for internet use at home and at a friend's place. As seen above the small difference is mainly due to clear differences in the age group of 6 to 9 years, when boys are more likely to use the internet.

Regarding the age groups the table shows some age specific patterns. Due to the very rare internet use of children younger than six years, there are no gender differences in this age group. For those between six and eleven years significantly higher percentages are found for boys being online at home and at school. In the oldest group boys are yet more likely to be online at home; in addition more of them use the internet at a friend's place. However girls are more likely to use the internet at libraries or other public places.

Table 2.4: Internet use of girls vs. boys at different places by age
(in %, basis: EU 25; shaded cells indicate significant differences ($p < .05$)¹¹)

Age	At any place	At home	At school	At a friend's place	At an internet café	At a library
0-5 years	9 : 9	7 : 7	3 : 3	1 : 1	0 : 0	0 : 0
6-11 years	48 : 53	30 : 34	31 : 34	12 : 13	1 : 1	3 : 2
12-17 years	85 : 88	59 : 63	62 : 61	31 : 35	6 : 8	9 : 7
All children	49 : 52	33 : 36	32 : 34	15 : 17	2 : 3	4 : 3

Source: Eurobarometer 64.4 – Special No. 250: Safer Internet, December 2005; basis: parents/guardians with children less than 18 years.

Looking at the results for the single countries leads to the conclusion that in most of the countries the percentage of boys being online is slightly higher than the percentage of girls. However, in most cases these differences are not statistically significant; the only exceptions here are Austria (boys: 62%, girls: 45%), Italy (boys: 41%, girls: 30), and Germany (boys: 52%, girls: 43%). As evidence from national studies, e.g. from Germany, shows, these differences are likely to decrease with the ongoing diffusion process.

The only countries where, according to the Eurobarometer survey, internet use is slightly (not statistically significant) more common for girls than for boys are Ireland, Netherlands, Portugal and the United Kingdom.

To test the hypothesis that gender differences are greater in the early stages of internet diffusion, the percentages of boys and girls using the internet were calculated for the three groups of countries (defined above on the basis of the percentage of internet users; table 2.5). The results indicate that the overall difference between boys and girls disappears in the later stages of the diffusion process, since a gender gap can be observed only in groups 2 and 3 where the diffusion is less advanced than in group 1.

Table 2.5: Gender differences in internet use in countries with high, medium and low internet use

	Boys	Girls
Group 1 ("High internet use")	68.6	68.0
Group 2 ("Medium internet use")	52.0	48.2
Group 3 ("Low internet use")	35.0	31.3
Total EU 25	52.0	49.0

Source: Eurobarometer 64.4 – Special No. 250: Safer Internet, December 2005; basis: parents/guardians with children less than 18 years.

Another indicator to assess gender differences is the variety of locations where children have access to the internet (see above). The analysis was run on the basis of only those children who actually use the internet, thus the following results do not repeat country differences in the number of children who are online, but just reflect the number of different locations of access. On the European level we find exactly the same values for girls and boys: On average they are online at 1.9 different places. In a multivariate analysis with gender and age as independent variables and the variety of locations as dependent variable there is no main effect of gender and no interaction between gender and age.

Hypothesis H2.1.4: There are inequalities in access as a consequence of inequalities in SES (socioeconomic status e.g. household income, parental education, social class).

Since access issues are addressed by many quantitative surveys in many countries, there is quite a lot of empirical evidence regarding SES and inequalities in children's access to the internet. In almost all countries, there is evidence to support the hypothesis of a correlation between access and SES. The inequalities in

¹¹ It has to be noted that – due to the high number of respondents (n=7,560) – even quite small differences between the groups qualify as statistically significant.

SES can be measured by or assumed on the basis of the household income, the parents' educational level, or the type of school where children go. The exact figures vary between the countries, however, in most countries there is a significant difference between higher and lower class children. In countries where the internet and computers are widespread, the ownership of a computer can reach 80 to 90% for higher class children, compared to 50 to 60% for working class children.

Only two countries report evidence that contradicts the hypothesis. This is the case for Iceland, due to the fact that "the Icelandic society does not seem to follow the same patterns of differentiation as most European countries", and Sweden, where no difference in internet access between social groups could be found, though "more research is needed", as it is not clear who the 10% of children without a computer are.

As the country reports regarding social inequalities show, future research should more systematically differentiate the various dimensions of SES: household income, level of education and profession of parents, etc. Migrants and ethnic minorities should be included in the survey samples, in the data analysis as well as in the final reports. Each family has different resources (social capital, economic capital, cultural capital) whose specific role could thus be more easily analyzed.

As exemplified in the UK report, research could provide a more accurate view on the access issue, e.g. not only whether children access the Internet or not, or the frequency of access, but also whether it is at home (vs. at school or in other places such as neighbours' or friends' home), in the child's bedroom, in a room shared (or not) with other family members. Research should also distinguish broadband and dial-up access, since this difference has proven to have a great impact in terms of shaping uses and the learning process. Such an improved definition of access might explain the apparent absence of evidence in Sweden. In countries with a high diffusion rate, the role of SES may be more fruitfully searched in the quality (rather than the mere existence) of internet access.

Access to online services from a mobile phone is seldom taken into account in the data provided. More research should be done on that topic, because the diffusion of mobile access has already started. New risks and opportunities will probably appear with these individual (and easy to carry) devices.

For some national reports (Italy for example), the actual use of internet is a part of the access issue. This illustrates the partial overlap between hypotheses H2.1.4 and H2.1.5. The issue of children living in a home with Internet access but not using it should indeed be addressed.

Hypothesis H2.1.5: There are inequalities in online use as a consequence of inequalities in SES.

Though evidence could not be found in a few countries, it seems that there is a general agreement throughout European countries that there is a correlation between SES and the frequency and amount of online use. In some countries (Estonia, France, Sweden), there is no significant difference in the frequency of use. On the other hand, Iceland, Norway and the UK report that children of parents with a higher education and/or belonging to a higher class do use the computer more often than the other children.

Some of the often contradictory findings regarding the influence of SES on children's frequency of internet use may arise from the fact that no difference is made between different places of use and between different types of use; this will be discussed in more detail in chapter 2.2.

2.2. Risks and opportunities¹²

The many hopes and fears regarding the opportunities that the internet can offer to children and young people, along with its attendant risks, have attracted considerable attention across Europe and elsewhere. The result is a series of pressing questions for policy makers, regulators, industry and the public about whether, in practice, young people are taking up these opportunities, whether some are benefiting more than others, and which factors might facilitate the beneficial uses of the internet in an equitable manner. These opportunities are widely judged to include entertainment, information, education, communication, networking,

¹² This chapter has been written by Sonia Livingstone based on comparative analyses done by Pille Pruulmann-Vengerfeldt (R2.2.1), Yiannis Laouris (H2.2.1), Bojana Lobe (H2.2.2), Helen McQuillan (H2.2.3, H2.2.4), Cédric Fluckiger & Benoit Lelong (H2.2.3, H2.2.5), Uwe Hasebrink (H2.2.6), and Sonia Livingstone (R2.2.2, R2.2.4, R2.2.5).

creativity, play and civic participation – a heterogeneous set of activities for which there is considerable optimism and public/private sector provision.

Equally pressing, however, are the questions regarding whether young people are encountering risks online, whether some are particularly at risk, and which factors might mitigate against the risks of internet use. These risks, also encompassing a heterogeneous set of intended and unintended experiences, include encountering pornographic, self-harm, violent, racist or hateful contents online, inappropriate or potentially harmful contact via grooming or harassment, and, attracting recent attention, problematic conduct among peers such as bullying, 'happy slapping' or privacy invasions of one kind or another.

Widely understood as mutual opposites, there is nonetheless considerable scope for interpretation and contestation – both conceptually and between adults and children – regarding the classification of specific activities as either opportunities or risks.

Public policy regarding children and the internet is framed by the coincidence of three factors: first, the extraordinary rapidity of the internet's diffusion and development, faster than any previous media and so outpacing society's ability to adjust; second, an endemic cultural fear of the new, encouraged by media panics framing the internet as impossible to regulate as a source of threats to children's safety; and third, the novelty of a reverse generation gap whereby parental (and teachers') expertise is exceeded by children's ability both to use the technology and evade adult management.

This chapter undertakes the following:

- An examination of evidence from across Europe relevant to two main research questions – what are the main opportunities, and the main risks, experienced by children online?
- To organise these findings, it puts forward a classification of varieties of online opportunities and varieties of online risks.
- Based on the risk findings, the chapter then proposes a classification of countries according to the incidence of online risk experienced by children.
- Following up on the findings for risks, these are examined by children's age, gender and socio-demographic background, according to hypotheses generated from the published literature.
- Available research on how children respond to risk is then examined, including the effect of internet literacy or skills, and different strategies of coping with risk.
- Finally, we consider the relationship between online opportunities and risks.

2.2.1 Opportunities experienced by children online

Research question R2.2.1: What are the main opportunities experienced by children online?

Among the 21 countries included in EU Kids Online, evidence was available from almost all about the main opportunities experienced by children; however, little evidence was available from Slovenia, Bulgaria and Greece. In some countries only, evidence was available regarding both adults and children's perception of online opportunities – Sweden, Poland, Ireland, Denmark, Greece, Italy, UK and Norway.

In general, adults and children agreed that children use the internet as an educational resource, for entertainment, games and fun, for searching for global information and for social networking, sharing experiences with distant others. Other opportunities, such as user-generated content creation or concrete forms of civic participation, are less common.

- In the majority of countries (the UK, Sweden, Spain, Poland, Norway, Italy, Ireland, Iceland, Germany, Estonia, Denmark, Czech Republic, Cyprus and Austria) children perceive entertainment, games and fun as major opportunities of the internet. In most countries too, children use the internet as an educational resource (UK, Portugal, Poland, Norway, Italy, Ireland, Iceland, Germany, Estonia, Denmark, Belgium, Austria,).
- There is evidence that social networking and sharing experiences with distant others is common among children from the UK, the Netherlands, Sweden, Spain, Poland, Norway, Italy, Ireland, Iceland, Germany, France, Estonia, Denmark, Czech Republic, Belgium and Austria.

- The opportunity to search for global information is mentioned by the youth of the UK, Sweden, Spain, Ireland, France, Germany, Cyprus, Belgium and to a lesser extent also in Estonia. Furthermore, user-generated content creation is more common in Ireland, Iceland, France and in Belgium and less so among children in Estonia and the Czech Republic.
- Parents are more likely to stress online opportunities to access global information (Sweden, Poland, Italy, Greece) and the use of the Internet as an educational resource (Denmark, Greece, Ireland, Sweden, Norway, Italy). They tend to underestimate the value to their children of the Internet for social relationships and entertainment.

Little clear or cross-nationally comparable information was available regarding the incidence and take-up of these various opportunities, however. Focusing on particular activities or applications more than the opportunities these may afford, the Mediapro project (Mediapro, 2006) produced the only directly comparable data available on children's uses. This survey of 7393 12-18 year olds regarding their appropriation of new media in nine European countries found some, not easily interpretable, cross-national variation in online activities (see table 2.6).

Table 2.6: Children's online activities

	Activities on the Internet (% sometimes/often/very often)				
	Search engines	Email	Instant Messenger	Chat rooms	Downloading
Belgium	95	74	81	28	58
Denmark	92	66	87	26	50
Estonia	90	69	88	33	73
France	94	97	69	32	49
Greece	81	46	39	41	65
Italy	86	59	49	33	59
Poland	91	62	75	34	67
Portugal	95	69	77	38	60
UK	98	81	78	20	60
Average	91	66	71	32	60

Source: Mediapro (Mediapro, 2006) p.12, see www.mediapro.org.

Overall, these figures suggest a fairly constant and familiar picture, with children mixing educational, entertaining, informational and networking activities in substantial numbers, while tailoring internet use to suit their interests.

Generally, once they gain access (and skills), it can be concluded that children in all countries prioritise online communication, various forms of entertainment and play, and information provision, while for parents the benefits of educational resources are higher on their agenda. There is insufficient evidence, however, to justify a classification of countries in terms of online opportunities engaged in by children.

If online opportunities are to be increased across Europe, much depends on, first, the child's role (their motivation and resources) and the online provision available to them (and, thus, the providers' motives or social goals).

Hence we propose a classification of online opportunities for children and young people as follows. In the table below, the cells shaded grey are those for which a fair body of empirical evidence is already available. For many other opportunities discussed in public and policy circles, too little is known regarding either provision or take-up by children as yet.

Figure 2.5: Classification of online opportunities

Online opportunities	<i>Providers' motives</i>			
Child's role	Education and learning	Participation and civic engagement	Creativity	Identity and social connection
Content Child as recipient	Use of educational resources (incl. edutainment)	Use of global information	Use of diversity of resources for creativity and play	Advice (personal / health / sexual etc)
Contact Child as participant	Contact with others who share one's interests	Exchange among interest groups,	Being invited or inspired to participate in creative processes	Social networking, sharing experiences with distant others
Conduct Child as actor	Self-initiated or collaborative forms of learning	Concrete forms of civic engagement	User-generated content creation	Expression of identity

Livingstone and Helsper propose a graduated sequence of activities towards digital inclusion (Livingstone & Helsper, 2007). Based on findings for UK 9-19 year olds, differences among users fell into four orderly steps, suggesting a ladder of online opportunities as follows.

- Step 1 centres on information-seeking. This is the first step for everyone, and characterises internet use among those who just take up a few online opportunities. They may be termed basic users.
- Step 2 adds in games and email. Thus, those who take up a few more opportunities are likely to use the internet for information, entertainment and communication. These may be termed moderate users.
- Step 3 adds in instant messaging and downloading music. Those who take up a fair range of opportunities continue to seek information but they expand their peer-to-peer engagement. They may be termed broad users.
- Step 4 adds in a wide range of interactive and creative uses, while continuing the foregoing uses, making for a diversity of uses among those who take up the most opportunities online. These are termed all-rounders.

To some degree, children progress 'up the ladder' as they get older – most activities online become more common with age. However, the active promotion of further online opportunities in Europe should, one may conclude, encourage these steps in turn. For example, providing positive information resources of interest to children is the best way to encourage beginners. Contrary to the views of many adults, following this up with the provision of fun games is a good next step. Looking at these steps the other way around, one may suggest that children not yet comfortable with peer-to-peer communication are unlikely to engage in civic participation.

In terms of future research priorities, it seems that a systematic approach to data collection is needed if the take up of opportunities (as judged by children and parents) is to be encouraged in a comparable manner across Europe. While research has provided a portrait of the activities especially enjoyed by children, it is less clear about parental views, which matter – and should be further researched – because parents' beliefs regarding the benefits of internet use for their children will motivate their provision of hardware and software resources, their social and technical infrastructural support, their efforts to overcome digital inequalities and their perception of the likely costs if safety concerns lead them to restrict children's access.

2.2.2 Risks experienced by children online

Research question R2.2.2: What are the main risks experienced by children online?

Developing the three C's approach, EU Kids Online has classified the array of risks to children as shown in the table below.

- The vertical dimension recognises that risks to children derive from the three modes of communication afforded by the internet: one-to-many (child as recipient of mass distributed content); adult-to child (child as participant in an interactive situation predominantly driven by adults); and peer-to-peer (child as actor in an interaction in which s/he may be initiator or perpetrator).
- The horizontal dimension acknowledges four main forms of risk to children's development and well-being - commercial, aggressive, sexual and value threats.
- Note that while the specific risks that fall into each cell may change over time, the categories are more enduring.

Figure 2.6: Classification of online risks

Online risks	<i>Providers' motives</i>			
<i>Child's role</i>	Commercial	Aggressive	Sexual	Values
Content Child as recipient	Advertising, spam, sponsorship	Violent/ hateful content	Pornographic or unwelcome sexual content	Racism, biased or misleading info/ advice (e.g. drugs)
Contact Child as participant	Tracking/ harvesting personal information	Being bullied, harassed or stalked	Received unwanted sexual comments, being groomed, meeting strangers	Self-harm, unwelcome persuasion
Conduct Child as actor	Illegal downloads, hacking, gambling	Bullying or harassing another	Sending or posting porn, sexual harassment	Providing advice e.g. suicide/pro-anorexic chat

Many potential online risks have been discussed in public, policy and academic circles, but not all have been researched as yet. Evidence of the incidence, distribution and possible consequences of these types of risk, on a reliable cross-national basis, is sparse. Risks are particularly difficult to define in culturally-consensual ways, and they are difficult to research in methodologically-rigorous and ethically-responsible ways. Few studies are conducted comparatively, and exact samples, methods and measures vary considerably (Livingstone & Haddon, 2008; Lobe et al., 2007).

Noting strong caveats regarding difficulties with and differences in definitions and methods, the following portrait of available evidence is offered. It is based on risks as reported by children – generally teenagers who use the internet (unless other age groups are specified). In high internet access countries, the figures therefore apply to most of the population. In low internet access countries, however, figures obtained from online teenagers apply to a smaller, often more urban and/or wealthier, segment of the population.

For the five cells shaded above, sufficient data exists to scope the incidence of online risk – see Table 2.7.

Table 2.7: Summary of national reports on evidence for forms of risk

Form of risk encountered by children and median response across countries researched	Incidence by country Note: Percentages refer to online teenagers unless otherwise stated
<p><i>Aggressive content (child as recipient):</i> Seen violent or hateful content The approximately median response is 32% of online teenagers who have encountered this risk in Europe</p>	<ul style="list-style-type: none"> • 90% in Ireland (10-20 yrs – SNS users) • 51% in Poland (12-17 yrs) • Up to 40% in Belgium (9-12 yrs) • 39% in The Netherlands (13-18 yrs) • 35% in Denmark (9-16) • Up to 33% in France (12-17 yrs) • 31% in UK (9-19 yrs) • 35% in Iceland (9-16 yrs) • 29% in Norway (9-16 yrs) • 29% in Germany (on mobile) (12-19 yrs) • 26% in Sweden (9-16 yrs) • Up to 25% in Italy (7-11 yrs) • 15% in Austria (10-15 yrs)
<p><i>Aggressive contact (child as participant):</i> Been bullied/ harassed/ stalked The approximately median response is 15-20% of online teenagers who have encountered this risk in Europe</p>	<ul style="list-style-type: none"> • 52% in Poland • 31% in Estonia (6-14 yrs) • 21% (7-11 yrs) and 18% (12-19 yrs) in Italy • 20% in UK (11-19 yrs) • 19% in Ireland (of chatters 9-16 yrs) • 16% in Norway • 15% in Iceland (9-16 yrs) • 16% in Sweden (9-16 yrs) • 10% in Belgium
<p><i>Aggressive conduct (child as actor):</i> ... Sent bullying/ harassing messages The approximately median response is 12% of online teenagers who have encountered this risk in Europe</p>	<ul style="list-style-type: none"> • 18% in Belgium • 14% in Norway • 10% in Denmark • 8% in Ireland
<p><i>Sexual content (child as recipient):</i> ... Seen pornographic or unwelcome sexual content The approximately median response is 40% of online teenagers who have encountered this risk in Europe</p>	<ul style="list-style-type: none"> • 80% in Poland • 57% in UK (9-19 yrs) • 54% in Iceland (9-16 yrs) • 50% in Austria (10-15 yrs – 60% of 11-18 yrs) • 47% in Norway (9-16 yrs) • 46% in Netherlands (13-18 yrs) • Up to 40% in Belgium (9-12 yrs) • 37% in Ireland (9-16 yrs) • 37% in Sweden (13-16 yrs) • Up to 33% in France (12-17 yrs) • 29% in Denmark (9-16 yrs) • Up to 25% in Italy (7-11 yrs)
<p><i>Sexual contact (child as participant):</i> (1) Received unwanted sexual comments The approximately median response is 25% of online teenagers who have encountered this risk in Europe</p>	<ul style="list-style-type: none"> • 56% (of 12-17 yrs meeting strangers online) in Poland • 32% in Sweden (9-16 yrs) have received unwanted sexual comments, and 15% (13-16 yrs) were subject to unwanted talk about sex • 31% in UK (9-19) • 25% in Iceland • 24% in Norway • 9% in Germany (6-13 yrs) • 9% in Ireland • 6% in Portugal (8-18 yrs)
<p>(2) Met online contact (stranger) offline</p>	<ul style="list-style-type: none"> • 20% in Czech Republic (12-17 yrs) • 20% in Sweden (9-19 yrs)

<p>The approximately median response is 9% of online teenagers who have encountered this risk in Europe</p>	<ul style="list-style-type: none"> • 19% (of 12-17 yrs) in Poland • 16% in Spain • 14% in Norway • 9% in Denmark (18% of online chatters, where 48% of those online are chatters) • 8% in UK (9-19 yrs) • 8% in Belgium • 7% in Ireland (9-16 yrs) • 6% in Estonia (6-14 yrs)
<p><i>Additionally, a risk associated with most contact risks:</i> ... Has given out personal information The approximately median response is 50% of online teenagers who have encountered this risk in Europe</p>	<ul style="list-style-type: none"> • 91% in Czech Republic • 79% in Ireland (10-20 yrs) • 64% in Poland • 16% in Spain • 22% in Iceland (9-16 yrs) • 14% in Norway • 9% in Denmark (18% of online chatters, where 48% of those online are chatters) • 46% in UK (9-19 yrs) • 44% in France (12-17 yrs) • 13% in Belgium (9-12 yrs)

Finally, a miscellany of further risks are noted by the national reports, as follows:

- Viruses/scams/spam – seen as problem by many children
- 17% in Belgium (9-12 yrs) felt threatened online, and 40% felt shocked by online content
- 19% in Estonia (6-14 yrs) disturbed by stranger online
- 40% in Austria (10-15 yrs) visited gambling sites and 11% 11-18 yrs visited suicide forum
- 44% girls/30% boys in Germany (12-19 yrs) had unpleasant experiences in chat rooms, and 29% had seen a filmed beating
- 19% in Denmark have been harassed/bothered/upset, and 77% of chatters have been insulted
- 15% in Iceland asked for a picture of self naked online
- 16% in Iceland received emails/messages which made them worried or frightened
- 7% in Ireland (10-14 yrs) made uncomfortable by material
- 16% in Italy (13-17 yrs) had unpleasant or bad experiences, 8.1% (12-19 yrs) received threatening content and 21.7% (12-19 yrs) received fake information about themselves.
- 46% in The Netherlands (13-18 yrs) disturbed by annoying comments when chatting/using IM
- 30-40% of young people in Slovenia are bothered by spam/viruses/slowness of the websites loading; 44% express their concern about Internet safety.
- 11% in Spain have felt afraid online (and 36% tend to disconnect because they are concerned about other people online)
- 16% in UK seen something frightening/worrying

It seems that online risk attracts public concern and policy attention with justification. In most countries, significant minorities and, in some cases, a majority of children, especially teenagers, are encountering a range of aggressive and sexual risks. These include content, contact and conduct risks.

Yet, many pressing questions remain, with little data available in some countries and, as noted earlier, many difficulties of measurement and comparability impeding a clear picture

Unlike for online opportunities, however, the above table does provide the basis for an approximate classification of countries in terms of incidence of online risk experienced by children and young people.

Although stronger data would be greatly preferable before advancing such a classification, we attempt one here nonetheless in order to gain some benefit from the available research findings.

To construct this classification, for those countries where several quantitative estimates of risk are available, the following 'rough and ready' calculation was applied. A rank of 1 was given if the national percentage is below the median for the risk category, a rank of 2 is given if the percentage is close to the median, and a rank of 3 is given if the percentage is above the median.

- High risk countries include those new to the internet (Poland, Czech Republic) or experienced with the internet (Netherlands).
- Next riskiest are Estonia, Norway, UK.
- Around the European average for online risk to children – Austria, Belgium, Denmark, Ireland, Sweden, all fairly small countries, mainly in Northern Europe.
- Lower risk countries – France, Germany, Italy – large countries (but with little data on risk).
- Other countries cannot be classified, for lack of evidence.

In conclusion, we suggest that this country classification is best regarded as a hypothesis – the basis for further research to test the classification and amend as appropriate. Usefully, however, it suggests that, for some countries, being new to the internet means gaining new risks while for others, having gained high internet penetration carries with it high risks. The anomalies are also interesting – Sweden has high internet penetration but only average risk, suggesting perhaps an effective level of safety awareness.

Comparing now across risks instead of across countries, the same findings reveal that some risks are more prevalent than others, though variation across European countries is considerable. Setting aside sending bullying/harassing messages (where there are data for too few countries), the order of risks is roughly:

1. Giving out personal information: the most common risk – estimates around half of online teens, with considerable cross-national variation (13% to 91%).
2. Seeing pornography: second most common risk at around 4 in 10 across Europe, but there is considerable cross-national variation (25% to 80%).
3. Seeing violent or hateful content: third most common risk at approx one third of teens and, apart from a figure of 90% in Ireland (and 51% in Poland), a fair degree of consistency across countries.
4. Being bullied/harassed/stalked – generally around 1 in 5 or 6 teens online, though there is also a group of high risk countries here (Poland, perhaps Estonia) and one low risk country – Belgium.
5. Receiving unwanted sexual comments - only around 1 in 10 teens in one group of countries (Germany, Ireland, Portugal) but closer to 1 in 3 or 4 teens in Iceland, Norway, UK and Sweden, rising 1 in 2 in Poland.
6. Meeting an online contact offline – the least common but arguably most dangerous risk, there is considerable consistency in the figures across Europe at around 9% (1 in 11) online teens going to such meetings, rising to 1 in 5 in Poland, Sweden and the Czech Republic.
7. The miscellaneous category of findings also listed above indicates the range of possible risks still to be researched in comparative perspective – self-harm, race hate, commercial exploitation, and many more.

From this survey of findings, several conclusions may be tentatively drawn.

- First, there are considerable cross-national variations in the incidence of risk, although it is hard to discern systematic cross-national patterns across all risk types.
- There seems to be more cross-national variation in the more common risks, and more homogeneity for the less common risks.
- In several countries, some measure of distress or feeling uncomfortable or threatened was reported by 15%-20% of online teens, this suggesting, perhaps, the numbers for whom risk poses a degree of harm.

- Poland is a striking outlier – reporting high levels of risk across several categories, and being highest for seeing porn, being bullied, receiving unwanted sexual comments, second highest for stranger danger, and third highest for giving out personal information.
- Further, in some countries it is particular risks that stand out, but they are not high risks across all risks e.g. Ireland for seeing violent and hateful content and giving out personal information, Czech Republic for giving out personal information, Estonia for being bullied.
- The only country that is somewhat (comparatively) a low risk outlier on a few items is Italy – on porn, seeing hateful content, although the actual figures are not so striking as the high risk outliers, and this is partly because the samples surveyed were younger (7-11 year olds).

The research gaps are considerable, for there is little or no research evidence across Europe regarding some forms of risk to children online. Specifically, there is little on commercial risks (either those which direct commercial/advertising content to children or those which track their online activities or collect personal data). There is also little research on risks associated with exposure to certain values. Although there are scattered studies of the incidence of exposure to racist content, though these are too few to compare cross-nationally, and thus they have been combined with hateful content. We have found few or no studies on self-harm (e.g. cutting, suicide, pro-anorexia) or on inappropriate forms of persuasion or misleading advice. Only recently have there been some studies of children not as victims but as perpetrators, focusing on bullying and sending unwanted sexual messages.

Undoubtedly, there are some difficulties in researching these topics – both practical and ethical, but nonetheless, the attempt should be made. The measures asking not about specific risks but about children’s possible distress or fear associated with these experiences provide a helpful indication of possible harm, and require further investigation to understand the duration and severity of such responses.

Some of the high reports of risk – in Estonia, Poland, Czech Republic – require urgent awareness-raising. Similarly, the advent of new forms of online activity – e.g. social networking – points to the need for urgent new advice to children and young people. As estimates for now-familiar risks continue to be substantial, these too require continued attention to keep them in children’s minds.

2.2.3 Positional factors influencing children’s online opportunities and risks

We now turn to the hypotheses that link the demographic factors of age, gender and socioeconomic status to findings for children’s experience of online risks.

Hypothesis H2.2.1: As children get older they are exposed to a greater amount and range of online risks.

It is commonly supposed that as children get older they are exposed to a greater amount and range of online risks (although, as is also supposed, this may matter less than for younger children as older children are also more mature and capable).

Of the 21 participating countries, only eight had evidence to support this hypothesis (Belgium, Estonia, Iceland, Norway, Poland, Portugal, Spain and the UK) and three had contradictory evidence (France, Germany and the Netherlands). The remaining countries (Austria, Bulgaria, Cyprus, Czech Republic, Denmark, Greece, Ireland, Italy, Slovenia and Sweden) had no data to present.

- As the Austrian report noted, this is because they, like many countries, lack direct evidence of risk for children younger than teenagers – in other words, lack of evidence does not mean the hypothesis can be rejected. On the other hand, as they also point out, across the age range from 11 to 18, they – again like many countries - have evidence of risks encountered across the teenage years.
- Also in support of the hypothesis, research on Estonia shows that “Cyber-bullying, stalking, harassment” has been experienced by 42% of 13 to 14 year old children, 34% of 11 to 12 year olds, 37% of 9 to 10 year olds and only 11% of 6 to 8 year olds. Also, older children communicate more with strangers on the Internet: 49% of 13 to 14 year olds have communicated with strangers (8% with adult strangers) while only 7% of 6 to 8 year olds have done so (2% with adult strangers; (Turu-uuringute AS, 2006).
- Similarly in Iceland, as children grow older they are more likely to have met a stranger on the internet who asked for personal information about themselves (12% of 9 year olds compared to 30% of the 15

year olds). They are also more likely to have received unwanted sexually explicit messages (16% of 11 year olds compared to 26% of 15 year olds). Moreover they are more likely to have stumbled into websites with pictures of naked people or porn sites (44% of 11 year olds compared to 63% of 15 year olds). And in Spain, a range of content risks (promoting violence, war, terrorism, pornography, etc) are more commonly experienced by 15-17 year olds than by 12-14 year olds, as is the likelihood of meeting in person someone first met online - 15.1% of adolescents between 15 and 17 years of age do this, as do 8.2% of younger children, ages 12 to 14 (Tezanos, 2006).

On the other hand, some research finds contradictory results.

- In France, research shows that as children get older they are less likely to participate in chat rooms (comparing 15-17 year olds with those aged 18+), resulting in a decreased chance of facing some risks.
- In Germany, there was no evidence directly addressing the relation between age and risk exposure, but findings on problematic films on mobile phones suggest that children aged 12-17 own more of these films on their mobile phones compared with those aged 18 and above.
- Findings from the Netherlands suggest that children aged 12-14 encounter greater risks when using online technologies because they're experimenting with their identities and are more prone to receive negative feedback of their profiles, thus endangering their well being.

On balance, however, it is concluded that older teenagers do encounter more online risks. To qualify this, it may be that for some risks, the oldest teens have learned how to avoid such risks, while younger teens are the most likely to be sensation-seeking or deliberately risk-taking. Also, the phenomenon of very young children using the internet is too recent for a strong evidence base, raising new and pressing questions.

Part of the explanation for the generally positive association found between age and risk is offered by the UK Children Go Online study (Livingstone & Bober, 2004). This conducted a path analysis showing that the positive correlation between age and risk among 12-17 yr old internet users ($r=0.26$, $p<0.01$) may be because older children engage in more online opportunities and this, indirectly, leads them to experience more risks. In short, older teens do more online of a beneficial nature, and this indirectly leads them into more risky experiences.

H2.2.2: As younger children gain online access they are increasingly exposed to online risk.

It is possible that as ever younger children gain access to online technologies, they may be particularly vulnerable to risk – gaining access before developing the requisite skills or maturity to cope with what they encounter. The above analysis also suggests that as younger children gain online access, they will encounter more online risk precisely because they will take up more opportunities than at present.

But direct research is yet to be conducted to explore the specific risks faced by younger children. And unfortunately, even where survey findings across the age range are available, they are rarely analysed so as to address this issue. Across Europe, most countries had no findings examining the interrelations among children's age, online access and risk exposure. Some had findings to suggest that, as younger children are more closely monitored by their parents, risks are less problematic when encountered among young children (e.g. Iceland), but this point relates more to the consequences of this hypothesis, if supported, than to the merits of the hypothesis itself.

H2.2.3: There are gender differences in the range/types of uses/opportunities

Data from thirteen countries support the hypothesis that there are gender differences in the range and type of children's online activities: Bulgaria, Estonia, France, Germany, Iceland, Ireland, Italy, the Netherlands, Norway, Poland, Portugal, Spain, Sweden.

The hypothesis is challenged in only two countries which provided mixed evidence – i.e. research results which challenge as well as support the hypothesis (Greece, UK). Limited evidence was available in Czech Republic. No evidence was available from four countries: Austria, Denmark; Slovenia, Belgium.

The 2005/6 Norwegian SAFT survey of 888 9-16 year olds shows a fairly typical pattern of online activities in terms of gender (see table 2.8).

Table 2.8: Online activities of Norwegian children between 9 and 16 years

What kind of things do you do on the internet?	Boys (%)	Girls (%)
Play games on the internet	84	59
Do homework	52	64
Download music	57	54
Chat in chat rooms	47	48
Send and receive email	44	50
Search for information (other than schoolwork)	38	40
Surf for fun	41	29
Instant messaging	32	30
Visit news sites	32	27
Make personal website/blogging	22	24
Visit fan sites	21	23
Publish pictures or information	15	20
Download software	23	8
Visit sites for hobbies	13	14
Shop or make a purchase	16	8
Watch pornography	15	3

Source: SAFT Children's Survey (2006). Findings presented at the Stakeholder Event for the German launch of EU Kids Online, University of Hamburg, December 2006. See also <http://www.saftonline.no> and <http://www.saftonline.org>

Overall, findings from across Europe suggest that while boys and girls enjoy many similar activities, there are some common gender differences as follows:

- In general, boys are involved in a wider range of online activities and have different preferences than girls, particularly in types of downloads and gaming activities.
- Boys prefer sport-oriented and action games. Girls favour adventure, party and mind-challenging games and self-expression.
- There is also a difference in internet surfing in most countries. Girls are more likely to search for information for educational purposes, boys for entertainment purposes.
- Differences are apparent also in the use of the internet for communication, with more girls than boys being regular users of email, MSN and blogs.
- Girls are more likely than boys to publish photos of themselves. They access a wider range of user-generated content than boys.

There is little cross national variation in findings. Following the above finding that gender gaps in internet use disappear in countries with a high level of use (see table 2.5), it may be hypothesised that gender differences are greatest in the early days of internet diffusion in a country, where social expectations and access provision are highly gendered, and that with familiarity and embedding in daily life, these gender differences diminish. However, too little evidence is available to examine this hypothesis for the use of specific services.

Only in Poland is email more widely used by boys than girls. All other countries report girls' higher use of the internet for communication purposes than boys. Things are changing fast, also: for example, although computer games have traditionally been targeted at boys, recent years have seen a greater number of games appealing to girls and this is increasing girls' game-playing.

Thus it is concluded that while boys and girls enjoy a range of online opportunities, there is clear evidence of gender differences in online activities and preferences. Girls prefer activities that involve communication, content creation and collaboration. Boys prefer competition, consumption and action. As yet, too little is known regarding the relatively new phenomena of social networking, online and multi-user gaming and other web 2.0 activities.

The relationship between gender, age and internet activity needs to be investigated more fully.

- For example, in Germany, it appears that gender differences increase with age: while there are minimal gender differences in children's (6 to 13 years) internet surfing (KIM, 2006), there are very significant differences between teenage boys and girls' internet activities; for most internet activities the percentages of the boys are higher than that of girls; and only e-mail and information seeking for the school and job are used more frequently by girls than by boys (JIM, 2007).
- A similar gender gap appears in findings for UK teenagers compared with younger children: among younger children, there is little if any gender difference in opportunities taken, but by the early to mid-teens, by which time the number of opportunities taken up is expanding, a gender difference has opened up, with the girls reaching a plateau at around 6 or 7 opportunities (from a list of 31) while boys continue to expand their online opportunities until they too reach a plateau by the age of 16-17 years.

We need to build on this research base. There is limited data in some countries and rich data in others, particularly those that have used a mix of qualitative and quantitative methods. We also need to examine children's motivations for using the internet for various activities and the influence of friends and peers on internet activities/opportunities. We do not know, further, whether how people learn to use the internet influences (either constrains or expands) their online activities.

H2.2.4: There are gender differences in the range/types of risks

Even more than opportunities from online activities, it is popularly supposed that there are gender differences in the extent and nature of children's exposure to online risk (indeed, to risks of all kinds). As the findings showed, there are indeed gender differences in exposure to risks. Fourteen countries provided research results supporting the hypothesis. There is limited evidence available in Belgium but what is available supports the hypothesis. There was no evidence available in six countries: Austria; Bulgaria; Czech Republic; Denmark; Slovenia; Sweden.

Overall, it may be concluded that:

- Boys are more likely
 - to seek out offensive or violent content,
 - to access pornographic content or be sent links to pornographic websites,
 - to meet somebody offline that they have met online,
 - to give out personal information.
- Girls are more likely
 - to be upset by offensive, violent and pornographic material,
 - to chat online with strangers,
 - to receive unwanted sexual comments,
 - to be asked for personal information but to be wary of providing it to strangers,
- Both boys and girls are at risk of online harassment and bullying.

National findings for gender differences in types of risk are summarized in table 2.9.

Table 2.9: Summaries of national reports on types of risks

Form of risk/ role of child online	
<i>Aggressive content (child as recipient):</i> Seen violent or hateful content	<ul style="list-style-type: none"> • France: Boys more likely to download harmful content • Germany: More boys than girls have seen a fight filmed on mobile phone. More boys have violent videos on their mobile • Ireland: Boys are three times more likely than girls to have visited hate sites. • Norway: Mainly boys visit websites with offensive content. • Poland: From age 10 a higher percentage of boys than girls is at risk of exposure to illegal and offensive material • UK: Boys more likely to seek out violent or gruesome content.
<i>Aggressive contact (child as recipient):</i> Been bullied/harassed/stalked	<ul style="list-style-type: none"> • Belgium: Girls have felt more threatened than boys • Germany: More girls than boys (12-19 years) have met unpleasant people in a chatroom • UK: Girls are more likely to have been bullied online. • Estonia: Cyber-bullying, stalking, harassment is a bigger risk for boys than girls • Ireland: More boys than girls (9-16 years) have experienced online harassment • Italy: The risk of harassment is higher for boys than for girls
<i>Aggressive conduct (child as actor):</i> ... Sent bullying/harassing messages	<ul style="list-style-type: none"> • Italy: More boys (7-11 years) than girls have sent harmful content through the internet or mobile phone
<i>Sexual content (child as recipient):</i> ... Seen pornographic content	<ul style="list-style-type: none"> • Cyprus: All girls have seen nudity on the internet • Iceland: Girls are much more likely than boys to say that they experienced discomfort when looking at pornography. • Poland: Girls are more likely to be exposed to erotic material in emails and chatrooms. Girls find sexual and erotic content more shocking than boys. • The Netherlands: More girls than boys are upset by sexual images on the Internet • Germany: More boys than girls have viewed pornographic material online • Poland: Boys are more likely than girls to insert key words in search engines related to sex and erotica. • Iceland: Boys are much more likely than girls to have visited pornographic websites. • Spain: Boys are more likely than girls to receive Internet links to pornographic web pages • UK: Boys are more likely to encounter online pornography, both accidentally and on purpose
<i>Sexual contact (child as participant):</i> Received unwanted sexual comments	<ul style="list-style-type: none"> • France: Many girls visiting chat rooms say they had contacts with older boys or men, explicitly talking about sexuality • Iceland: Girls more likely to have received unwanted sexually explicit messages than boys. They are also more likely than boys to have been asked to send naked picture of themselves • Norway: Mostly boys who receive unwanted sexual comments.
<i>Sexual contact (child as actor):</i>	<ul style="list-style-type: none"> • France: Young teenage girls may hide their identity in chat rooms and pretend they are boys or older girls, in order to learn more about sexuality or online flirting.
Chat online with strangers	<ul style="list-style-type: none"> • Portugal: More girls than boys chat online with strangers • France: More girls than boys chat online to strangers
Met online contact (stranger) offline	<ul style="list-style-type: none"> • Norway: Boys are more likely to have face to face meetings with people they have met on the net. • Iceland: Boys are more likely to have face to face meetings with people they have met on the net. • Portugal: A higher percentage of boys than girls have contacted people off-line they have met on-line • Spain: More boys than girls meet people offline
Given out	<ul style="list-style-type: none"> • Estonia: strangers in online forums are more interested in getting to know the real

personal information	<p>names of girls.</p> <ul style="list-style-type: none"> Germany: More girls than boys (12-19 years) have been asked in a chatroom by strangers for their address, telephone number and name. Fewer girls than boys provided the information. Greece: Fewer girls than boys would share personal details with a stranger Ireland: Girls (9-16 years) more conscious than boys of being contacted by strangers when submitting personal information. Italy: More boys than of girls reported giving out false information about another person UK: Boys more likely to give out personal information online
Miscellaneous other risks	<ul style="list-style-type: none"> Poland: More boys than girls receive links to websites, e-mail, mail addresses telephone numbers providing informing on how to access illegal or inappropriate contents

Although this table suggests a considerable diversity of gender differences in exposure to risk, it does not provide the basis for a clear classification of countries on the basis of gender differences or otherwise.

More comprehensive investigation of exposure to and perceptions of risk is needed, particularly boys' tendency to seek out violent and pornographic material. Links between boys' games content and playing (which often have violent or sexual content) and exposure to offensive and sexual online content would be worth exploring. It would be important also to examine awareness of risks and coping strategies among girls and boys.

Hypothesis H2.2.5: There are inequalities in use/opportunities as a consequence of inequalities in SES

The well-established debate over the digital divide justifies the hypotheses that there are inequalities in children's use of and opportunities gained through the internet as a consequence of differences in socioeconomic status (SES).

Though evidence was lacking in several countries (Austria, Cyprus, Czech Republic, Denmark, Greece, Iceland, Ireland, Italy, Poland, Portugal, Slovenia), there is general agreement throughout many European countries that SES and the type of use or opportunities are correlated. Different variables are examined in several countries, here categorised in terms of measures of frequency of use or type of use.

Frequency of internet use:

- In some countries (Estonia, France, Sweden), there is little difference for children of different socioeconomic status.
- The different ways of measuring use complicates these simple conclusions, however. For example, in Estonia, among 15 to 19 year olds, a positive correlation exists between household income (per family member) and variety of computer use (the number of different activities youngsters engage in). On the other hand, there is no significant correlations between household income and the frequency of computer/Internet use, or between household income and the amount of time spent on computer use at home (MMM Project, 2005).
- By contrast, a positive association is found in Norway and the UK. Children whose parents have more education or who are of a higher class use the internet more.
- Belgium and the UK also report that upper class children started to use the computer younger.
- Qualitative research in France (Fluckiger, 2007) shows that inequalities in use could result from the transmission of cultural capital, as parents with a higher education encourage their children to use the internet more and more widely.
- Surveys in both France (Pasquier, 2005) and the UK (Livingstone & Helsper, 2007) show that although there are inequalities in possession of a computer or access to Internet as a consequence of inequalities in SES, among teenagers who have access to the Internet, there is little significant difference in the frequency of use.

Type of use:

- Several countries report that upper class children use internet more often for school (Netherlands), to get information about important questions or to do their homework (Spain), or to contribute to message boards, vote or sign a petition online or visit civic sites (UK); children from “theoretical” schools are more likely to make use of scientific and political information on the Internet (Sweden).
- On the other hand, downloading music is more frequent among children from lower class households (France, Netherlands, UK).
- Even in a country considered relatively egalitarian, like Norway, the differences are notable. Children in families where parents have higher education use the computer more than others. The difference is largest concerning homework, e-mail and gathering information, but also significant when it comes to image processing and music. Concerning chat, programming and computer games, the difference is small or insignificant. Children with parents of lower education use TV-console games more than do others. There is a positive correlation between how much time the children spend on the computer and how good grades they have, and their parents’ educational level. (30)
- Overall, all countries agree that lower class children use Internet for leisure information, downloading content, and fun. Upper class children tend also to have uses related to school, civic or political information.
- For example, in Spain, 75% of the young people interviewed from the higher social status group said they generally browsed the Internet to obtain information when doing school work or homework; only 43% of the lower social status group do this (Tezanos, 2006).
- Apart from UK and France (where working class children are more likely to use chat rooms), the reports do not suggest any association between SES and the use of communication tools.

Does the frequency of use and type of use depend on SES? The answer is positive for some national reports, negative for some others. A possible explanation is that frequency of use is sometimes asked *whatever the place* – thus use at school is included, which may lower or even cancel the effect of SES.

Hypothesis H2.2.6: Since most children make the broadest and more flexible use of the Internet at home, they will also encounter more risk from home than school use.

This hypothesis is particularly important in terms of directing safety awareness initiatives – whether to parents or to teachers – and in framing advice to children directly (whether phrased in terms of school uses or home uses, positioning either or both of parents and teachers as advisors). However, it is not straightforward to investigate, since it combines several statements that have to be investigated:

1. How many children use the Internet at home and at school?
2. How often and for how long do they use the Internet at home and at school?
3. How broad is the range of Internet services, which are used at home and at school?
4. How likely is it to encounter risks when using the Internet at home and at school?

The Eurobarometer (2005/06) survey (EC, 2006) allows the investigation of the questions 1 and 4, although only by relying on parents’ answers (problematic since parents cannot know about their children’s Internet use at other places, including school).

For question 1, Table 2.2 (see above, chapter 2.1) has shown how many children use the Internet at home and at school. On the EU level this first indicator for potential risks shows no difference for Internet use at home (34%) and at school (33%). However there are countries with substantially higher figures for use at home (Belgium, Denmark, Germany, Italy, Slovenia, Spain, Sweden, and The Netherlands) on the one hand, and countries with higher figures for use at school (Bulgaria, Czech Republic, Greece, Poland, Portugal, and the United Kingdom) on the other hand. The latter group includes Central and Eastern European countries as well as Southern countries with a generally low Internet use; the only exception here is the United Kingdom.

The second step of the analysis asks whether the children’s parents report that their child has encountered any harmful or illegal content when using the Internet at different places. Table 2.10 shows that the parents

observe more risks at home than at school; this is true for the European Union as a whole as well as for all countries involved in the EU Kids Online project. These findings clearly support Hypothesis 2.2.6 (although as noted above, parents' knowledge of their children's internet use at school is limited).

A more specific approach to this question is based only on those children who – according to their parents – use the Internet at home AND at school. On this basis, the hypothesis is clearly supported: on the European Union level, the figure for risks at home is much higher (23%) than for risks at school (7%).

Table 2.10: Encounters with harmful or illegal content when using the Internet at home and at school
(in per cent of children who have used the Internet)

	At home	At school
Austria	7	5
Belgium	20	3
Bulgaria	3	4
Cyprus	5	3
Czech Republic	11	7
Denmark	22	14
Estonia	17	4
France	11	0
Germany	7	3
Greece	10	3
Iceland	nd	Nd
Ireland	6	1
Italy	8	8
Netherlands	31	9
Norway	nd	Nd
Poland	11	6
Portugal	8	2
Slovenia	20	9
Spain	14	2
Sweden	34	16
The UK	12	4
EU 25	12	5

Source: Eurobarometer 64.4 – Special No. 250: Safer Internet, December 2005;
basis: parents/guardians with children less than 18 years.

As a final step of the analysis, all places where children use the Internet can be qualified regarding the likelihood to encounter harmful or illegal content. The following analyses are based only on those children who actually use the Internet at the respective place. Table 2.11 shows the figures on the European level. Because of the fact that most children use the Internet at home, this place clearly seems to be the least secure: 12 per cent of the parents say that their children have encountered harmful or illegal content when using the Internet at home; this is by far more than for the other places.

However, if one takes into account the number of children who actually use the Internet at the different places, the picture changes: Still the highest figure can be observed for Internet use at home; 18 per cent of the children who use the Internet at home have encountered illegal or harmful content at this place. A similarly insecure place (17%) is the Internet café. Internet use at a friend's house is in third place (12%), whereas somebody else's house (8%) as well as schools (7%) and particularly libraries and other public places (3%) are regarded as more secure.

These findings cannot be calculated on the country level, because for most of the countries the number of cases is too small. Looking at the figures does not provide any indication for substantial differences between the countries in this respect.

Table 2.11: Likelihood to encounter harmful or illegal content at different places (EU 25; in per cent of children, a) who use the Internet at any place or b) who use the Internet at the respective place)

	At home	At school	At a friend's home	At someone else's home	At Internet cafés	At libraries or other public places
a) all children who use the Internet	12 <i>N=3791</i>	5 <i>n=3791</i>	4 <i>n=3791</i>	1 <i>N=3791</i>	1 <i>n=3791</i>	0 <i>n=3791</i>
b) children who use the Internet at the respective place	18 <i>N=2590</i>	7 <i>n=2514</i>	12 <i>n=1218</i>	8 <i>N=348</i>	17 <i>n=199</i>	3 <i>n=285</i>

Source: Eurobarometer 64.4 – Special No. 250: Safer Internet, December 2005; basis: parents/guardians with children less than 18 years.

Taken together, the Eurobarometer data – as far as they include the relevant variables – clearly support Hypothesis 2.2.6. From the parents' perspective the likelihood of encountering harmful or illegal content is substantially higher when children use the Internet at home than at school. In addition, Internet use at a friend's home and at Internet cafés is regarded as more dangerous than at school. This provides a reasonable basis for targeting safety awareness information to parents and to children accessing the internet at home.

Beyond this overall picture, there is little available research that maps children's reported uses and risks online across multiple locations of use, on a country by country basis. Further work is therefore needed that surveys children directly, using sufficient sample sizes and asking about uses and risks across the various locations where children access the internet. A few national findings are worth noting, however, to gain a picture of the degree of variation likely across Europe.

For example, in Bulgaria, the Eurobarometer survey finds that more children use the Internet at school (12%) than at home (8%), this explaining why the likelihood of encountering risks is 4% for use at schools and 3% for use at home. As the national report comments, risks at home arise because of parental ignorance of or inexperience with the internet, and their belief that what children are doing at home is what they have learned at school. The results of the national study performed in 2006 show that parents think their kids are safer in cyber clubs than in the street and therefore they encourage children to attend. Parents usually are not aware of what their kids are doing in the Internet and rarely could prevent the risks (with few exceptions).

Qualitative research in France (Fluckiger, 2007) shows that at school, computers and the Internet are underused. Moreover, uses at school are very restrictive, so that pupils can not surf the Web freely, chat or visit blogs. Therefore, risks encountered at school appear very limited. Similarly in Ireland, children use the internet more frequently from home and are less likely to be supervised, whereas the Schools Broadband Programme has filters, social networking sites are banned at school, schools employ secure email systems, and less time is available for internet use as activities tend to be structured around the curriculum.

While further national data are largely lacking, those that are available further support the conclusion that, in general, online risk is greater at home than in school.

Overall, it seems that, in general, both frequency of use and type of use are influenced by SES – parental resources (economic, cultural, educational, social) resulting in some children benefiting more from the internet than others. But there are several exceptions, and gaps in the available evidence. Too few studies discriminate use at school (relatively more equal) and home (more unequal).

Research question R2.2.3: Are there SES differences in children's exposure to risk?

The relation between the digital divide (i.e. the risk associated with not accessing the internet, of being excluded) and online risk exposure (the risk associated with accessing the internet) has been little examined but is nonetheless important, hence this research question.

If it is supposed, as seems plausible, that parents are differentially resourced to manage online risk exposure, and that children are already – in their offline lives – differently at risk (or 'vulnerable'), this lack of attention to questions of SES is a concern in the research field. It is strongly recommended that all future research examines the differential consequences of internet access and use and, indeed, safety awareness and risk responses, for households of different socioeconomic status.

In most countries where research was collated, there was little information available regarding socioeconomic status (SES) – including Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Greece, Italy, Norway, Poland, Portugal, Slovenia, Sweden, The Netherlands. Insofar as findings are available, the evidence in each country points to a correlation between SES and exposure to risks, with the exception of Iceland. Most of these findings concern content and contact risks. In the main, it seems that lower class children are more exposed to risk online.

- For example, in Spain, Germany and France, there is evidence that working class children are more likely to encounter, receive or view pornographic or violent material, either on their email, Web browser or mobile phone.
- Spanish research shows that only 2.7% of young people from the highest social group state that they have received violent contents through the Internet, as opposed to the 60.3% of young people with a middle social status; similarly, 3.9% of young people from the very highest social group accidentally access pornographic pages, while 26.2% of those with a high social status and 61.2% of those with a middle social status do so. Similar data correspond to young people who receive pornographic pages through the Internet or messages: 5.5% belong to the highest social status, 26.6% are from the high social status group and 5.8% have a middle status. Pornographic pages received from someone known: 8.2% from the highest status, 28.6% from the high social status and 57.1% from the middle social status. Surprisingly, when asked whether or not they know someone who visits pornographic pages habitually, the highest social status gave an affirmative response in 61.5% of cases, those with a high social status 24%, the middle social status group 28.7% and those of the lowest social status, in 14.3% of cases (Tezanos, 2006).
- In Germany, a study of mobile phones and risks indicates that less educated teenagers own violent video films on the mobile phone to a larger extent than better educated teenagers:

General-education secondary school	11.9%
Secondary modern school	6.4%
Grammar school	2.1%

Source: (Grimm & Rhein, 2007). Base: teenagers with mobile phones (12-19 years, n=752).

- In France also, the findings suggest that working class children are more likely to talk to strangers on the Internet, or meet strangers they have met online. Thus Pasquier’s qualitative and quantitative research between 2001 and 2005 (Pasquier, 2005) found in France that 49% of working class high school pupils talk to people they never met before, compared to 41% of middle class and 26% of upper class teenagers. She argues that working class teenagers, more than others, say they are interested into chatting because chatting is seen as an occasion to demonstrate one’s ability to master the specific language in chat rooms, and that is particularly valued among under-privileged teenagers.

It can be concluded that those who belong to higher SES groups are generally exposed to fewest risks. Further, middle SES groups experience more risk and lower SES groups experience the most. It seems likely that several factors are at work here, with the relatively lesser access of the lowest status groups resulting in less exposure to risk, thus complicating the correlation between SES and risk. It is noteworthy too that the Irish report finds that only 41% of lower SES parents monitor their children’s internet use, compared with 81% of other groups, and that children from lower SES groups are more likely to have access to computers and the internet in their bedroom than higher SES groups (Downey, Hayes, & O’Neill, 2007). Lower parental monitoring may, it seems, be associated with – possibly result in – greater exposure to risk among children.

Some results are surprising. The UK reports only a small difference, and Iceland claims there is no SES effect. Internet is widely spread in Iceland, and, according to the report, very little socially differentiated, which could explain this result. However, UK is a highly stratified country, and the existing but small difference in the exposure to risks requires a different explanation. It should be noted that the relatively small difference in use in the UK exists only after controlling for access. In other words, access to the internet is highly stratified in the UK but, once access is achieved, SES makes little measurable difference to the frequency or nature of risks.

For future research, it will be important to systematically differentiate the various dimensions of SES: household income, level of education and profession of parents, so that the specific resources of households - social capital, economic capital, cultural capital – can be distinguished as factors exacerbating or ameliorating risk. SES differences in parenting style are yet to be well understood. Last, other forms of social inequality – e.g. the case of migrants and ethnic minorities – should be included in research designs.

In terms of safety awareness, these findings suggest the value of targeting interventions at working class children especially.

2.2.4 Consequences of online risks and coping

Research question R2.2.4: Is there evidence showing the consequences of online risks or evidence showing how children cope with online risks?

The Safer Internet *plus* programme's public consultation (Safer Internet plus programme, 2007), summarised and discussed at the 2007 Safer Internet Forum, highlighted several key conclusions, of which the first – that risk and safety should be addressed in the context of the 'overwhelmingly positive potential of the internet' has been addressed in the section on online opportunities. The second was that since 'a risk free internet for children and young people is an illusion', the focus should be on risk avoidance, coping with risk and media literacy.

We have begun to address this above, when examining whether increased online skills reduced risk exposure. But beyond the question of exposure is the important matter of coping. Once exposed to risk, how do children respond? In psychological research, this question is being framed in terms of adolescents' development of 'resilience'.

Thus far, however, little is known of children's abilities to cope with, or their resilience towards, online risk. Some findings do exist, however, and these are often promising, for they tend to suggest that such risks as children do encounter may be brushed off, or disregarded, by the majority of young people.

This leaves two crucial questions.

- First, methodologically speaking, can children be asked to self-report on harm with reliable results (in other words, might they be harmed in ways they cannot or choose not to describe when asked by a researcher)?
- Second, are some children particularly vulnerable to online risk, even though the majority appear to be relatively unaffected?

These two questions must remain for future research.

In what follows, we note the available evidence for children's responses to online risk. The Eurobarometer survey 2005/06 (EC, 2006) includes two questions directly related to risks, and combining these provides some indication of coping. Firstly, parents were asked whether their child has ever encountered harmful content on the internet (see table 2.12 1st column). Secondly, they were asked whether they think their children know what to do if a situation in the internet makes them feel uncomfortable (see table 2.12, 2nd column). This item can be interpreted as an indicator for parents' trust in their children's ability to cope with online risks.

On the European level, 31 per cent of the parents say that their child has encountered harmful content on the internet, and 66% of parents say their child knows what to do in such situations.

Table 2.12: Children's encounters with harmful content and their ability to cope with internet related risks

(parents' answers; per cent of children who use the internet)

	1) Child has encountered harmful content (%)	2) Child knows what to do in situations, which make them feel uncomfortable (%)	Correlation between encounters with harmful content and coping (within countries) (r)*
EU 25	30,8	66,0	-,02
Bulgaria	58,2	48,4	,12
Estonia	57,5	44,1	-,15
Sweden	55,5	65,9	-,25
Slovenia	55,4	61,1	-,02
Poland	48,8	55,6	,02
Czech Republic	48,4	58,0	,02
Netherlands	43,2	72,8	-,25
Austria	40,8	70,1	,19
Denmark	39,6	67,6	-,15
Spain	36,7	50,0	,13
Portugal	33,7	46,7	,16
Greece	30,5	50,8	,07
Belgium	26,3	67,0	-,20
Ireland	25,5	64,8	,13
Germany	23,3	71,0	,03
Italy	22,1	69,2	-,10
United Kingdom	21,9	75,3	-,09
Cyprus	20,7	72,4	,32
France	19,2	69,5	,00

Source: Eurobarometer 64.4 – Special No. 250: Safer Internet, December 2005; basis: parents/guardians with children less than 18 years.

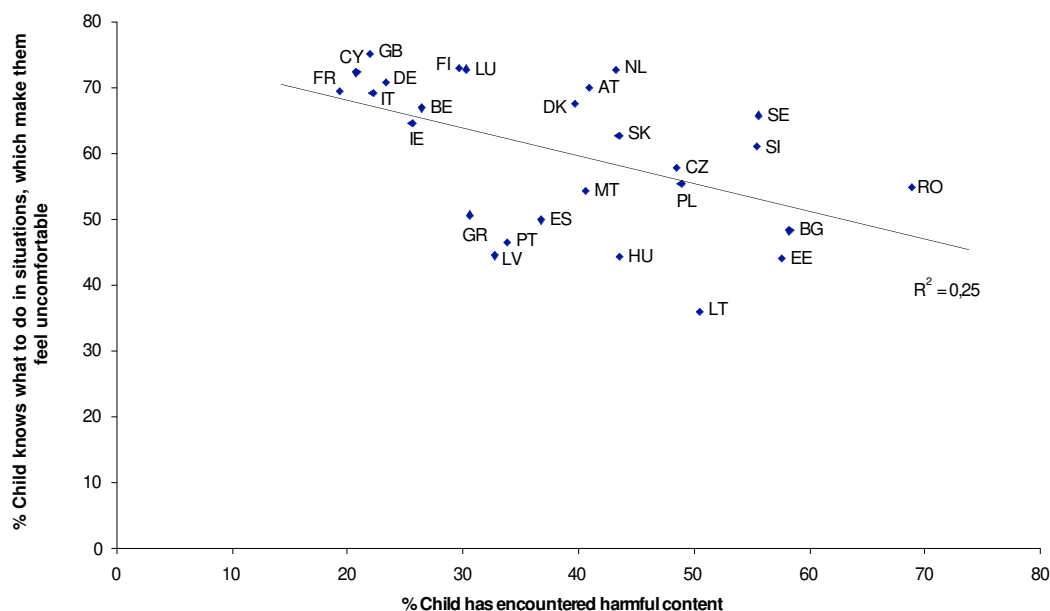
*) Shaded cells indicate significant ($p < .05$) correlations.

Figure 2.5 shows the aggregate results for the EU member states. Evidently, there is a negative correlation between the two indicators across countries¹³: the higher the percentage of parents who claim their children have encountered harmful content, the lower the estimated ability of children to cope with these potentially harmful encounters.

¹³ The Pearson correlation across the 19 countries is $r = -.52$, $p < .05$.

Figure 2.5: Countries by encounters with harmful content and children's ability to cope with situations, which make them feel uncomfortable

(based on parents'/guardians' answers, in per cent of children who use the internet)



Source: Eurobarometer 64.4 – Special No. 250: Safer Internet, December 2005; basis: parents/guardians with children less than 18 years.

Some caution is needed in interpreting this correlation. It may be that in low risk countries, children have indeed learned to cope; but it may also be that in low risk countries, parents are unaware of the need to cope and so overestimate their children's abilities. Similarly in high risk countries, children may really be less able to cope or, possibly, in high risk countries parents are more aware of their children's need to cope.

These figures suggest that the highest risk/lowest coping countries are Estonia and Bulgaria, followed by Poland and the Czech Republic – clearly a priority focus for future safety awareness initiatives. On the other side of the spectrum, a group of seven countries (Belgium, Cyprus, France, Germany, Ireland, Italy, and the UK) combine low risk and a high ability to cope.

Note that this classification of countries in terms of risk is somewhat at variance with that offered earlier, based on far more national research with children. The above findings are, here, interpreted less in terms of actual risk and more in terms of perceived risk by parents, especially as this reveals a gap between parental perception of risk and parental assessment of child's coping abilities.

Further evidence of the pattern of parents' perceptions of online risks and their children's ability to cope with them can be derived from the within countries correlations between these two indicators as shown in the above table 2.12 (3rd column). On the European level the correlation across individuals is almost zero;¹⁴ however on the country level we find several countries with a significantly positive correlation (Austria and Cyprus) as well as other countries with significantly negative correlations (Belgium, Denmark, Estonia, Netherlands, Sweden). This means, in the first group parents, who think their child has encountered harmful content, are more likely to believe in their child's ability to cope with this than parents, who do not think their child has encountered harmful content. To the opposite, parents in the second group, who think their child has encountered harmful content, are less trustful regarding their children's ability to cope with risks. This pattern is not easy to interpret; it emphasizes the relevance of thorough analyses within countries, because relevant relations between core variables seem to be substantially different.

How do children cope with online risk? In Table 2.13 below, we cull findings on children's responses to risky experiences from the national reports that form the basis for this comparative analysis.

¹⁴ Here we find an impressive example that correlations on the between-countries-level must not be mixed with correlations on the individual level. Whereas on the between-countries-level there is a clear negative correlation (see above), this cannot be found when calculating correlations on the level of all individual respondents.

Table 2.13: Summaries of national reports on children's abilities to cope with risks

Belgium	<ul style="list-style-type: none"> • Pupils fairly confident they can manage the risks of online contact with strangers.
Denmark	<ul style="list-style-type: none"> • When visit hateful websites, 24% don't think much about it; 23% get upset; 7% thinks it's funny; 6% agree with the content; 5% thinks it's cool • 39% of children ignore it when they come across violent content. 19% of children have visited harassment sites. Most of them don't give it much thought or they might think that it's fun or cool to agree, with the content on the site. A third of the children passed the link on to friends.
France	<ul style="list-style-type: none"> • Qualitative research reveals children's strategies for caution online e.g. revealing personal info gradually when trust; meeting stranger in open places/with friends; motivations for risk-taking also explored – learning to flirt, testing identity and relationships, exploring adult world
Greece	<ul style="list-style-type: none"> • Qualitative Eurobarometer – children (9-10 and 12-14) generally conscious of online risks and take measures to reduce them, following parental advice; children inform friends more than parents and discuss how to cope.
Iceland	<ul style="list-style-type: none"> • Of those children who had seen a website with pornographic content 41% told a friend 17% told an adult and 53% told no one about it. • Of those children who had seen a website with pornographic content 42% never visited that site again and another 43% ignored the site. • Of those who had seen websites with pornography or violent content 47% said they did not think about it, 33% said they found it unpleasant, 18% said they wished they had not seen it, 13% said they found it odd and 10% said they thought it was cool. • Of those children who received spam with pornographic content 18% told their parents about it; younger children were more likely to do so than the older ones. • Of those who had received e-mail which they found unpleasant or which frightened them, 65% deleted the messages instantly, 29% told a friend, 26% told an adult and 24% tried to prevent further e-mails from the person who had sent the e-mail. • Of those children who had met someone offline that they first met online almost all said that nothing unpleasant had happened.
Ireland	<ul style="list-style-type: none"> • Evidence that children accept and respond to parental advice – younger children talk to parents, older talk to peers • 12-14 yrs accept offensive material is part of online experience – they 'think before they click', and practice range of cautious practices • Common strategies among 9-16 yrs – give false info when asked for personal info or ignore request, ask to be left alone, block unknown senders, report to their parents • But also an increase in children who use internet when forbidden by parents or get around parental rules
Italy	<ul style="list-style-type: none"> • Among 7-11 yrs, 21% ask the harasser to leave them alone, 10% stop talking to strangers, 10% avoid those sites • 29% teenagers leave problematic sites/forums, 23% ask harasser to stop, 18% ignore disturbing messages, 1% are curious and continue the conversation.
Norway	<ul style="list-style-type: none"> • 1 in 5 of those frightened or hassled online told an adult • Fewer trust info on the internet than in 2003 (down from 49% to 37%) • Fewer willing to publish post info online for safety reasons than in 2003 • 85% of those who meet online contacts offline would not tell a parent after an unpleasant meeting • 16% stated having received an e-mail that bothered or frightened them (13% in 2003); over half of them deleted it at once, and 1/3 told a friend about it. • 1/3 of those (9-16 yrs) who visited a pornographic site say that they didn't give it much thought, while more than in 2003 thought it was funny. Those who had seen such a site generally did nothing about it or did not visit it again. A higher number than in 2003 stated that they did not tell anyone about having visited such a site. • 22% of children who use the Internet have received pornographic junk mail, but very few have told their parents. • After the visit to a website with violent or gruesome pictures, there is an increase in the number that said they wished they had never seen it, while somewhat fewer thought it was cool. [Source: SAFT, 2006]

Poland	<ul style="list-style-type: none"> • Most follow safety rules for stranger danger (refuse disclosure of personal info, etc); yet most also have ignored these rules in last year – 64% gave online contact their phone number, 42% gave address, 44% gave their photo, and many accept invitation to meet. • More than 30% of the 12-17 yr olds who had been induced to sexual conversations felt frightened/ scared about this situation (Wojtasik, 2003). • Many victims of cyber-bullying responded to this cyber-bullying with neutral emotional reaction: 35% of victims of humiliation/poking, 43% of victims of threats/blackmailing, more than 80% of those who received unwanted photo or video and 54% of filmed respondents responded with neutral emotional reaction. • Nearly half (49%) of the participants who have received links to pornographic websites have used them (29% have done this repeatedly) • Cyberbullying - most tell no-one – very few tell an adult
Spain	<ul style="list-style-type: none"> • Most teens do not falsify personal info online or ask online contacts for help; if feel risky online, they disconnect.
Sweden	<ul style="list-style-type: none"> • 1 in 4 of those who see online porn are disgusted by it
The Netherlands	<ul style="list-style-type: none"> • Online porn associated with recreational attitudes to sex and negative views of women as sex objects
The UK	<ul style="list-style-type: none"> • 54% of those who saw online porn – not bothered, while 20% were disgusted • Though some go to offline meetings, 66% took a friend and most told a parent or friend • 31% of 12-15 yrs check reliability of websites and 67% trust most of what they find online

Source: Findings reported in National Reports (see www.eukidsonline.net)

The above findings are surely suggestive, though they are insufficient to draw strong conclusions regarding children's ability to cope, or otherwise, with the consequences of online risks.

Qualitative research points to a series of strategies that children are developing to cope with online risks. How these are applied, and whether they are effective, remains unknown, but the manner of reporting suggests that children feel in control and confident in using these strategies.

Some countries report fairly high awareness of risks, yet this may not reduce risky encounters; in other words risk awareness does not necessarily translate into risk avoidance. Especially perhaps in countries new to the internet (e.g. Poland), there is a disconnect between safety awareness and children's behaviour – although the gap between safety awareness and safe practices is familiar also in all countries.

Research is sorely needed that follows children from exposure to risk online through to their coping strategies and, then, the consequences if any. This should include an account of strategies tried, outcomes and reasons for responding in particular ways, plus associated emotions - immediate or longer-lasting.

These findings suggest that awareness-raising should be continued for all types of risk encountered by children online, with more attention to how children do and should cope when they encounter such risks. Many studies report that only a small minority tells an adult, though it appears that children are developing their own strategies to respond to online risk. Whether these are effective or not remains unknown.

2.2.5 Relation between online opportunities and risks

Research question R2.2.5: What is the relation between online opportunities and risks?

The UK Children Go Online found that there is a positive and high correlation (0.55**) between number of online opportunities and number of online risks for 12-17 year old internet users. This led the EU Kids Online researchers to seek similar findings in other countries. Although the Estonian report noted that daily users of chatrooms and social networking sites are more likely to meet online contacts/strangers offline, no other countries could produce similar findings. It seems that individual projects examine either opportunities or risks but rarely both. When they do include both, they tend to analyse the data for each separately, resulting in a missed opportunity to understand the relation between online benefits and risks.

Theoretically, the possibility of a positive correlation – thus far found only in the UK – is important because it contradicts the notion that as children do more online (becoming more confident or expert or even, older) they learn to take up more opportunities and avoid more risks. Instead, like learning to ride a bicycle or read a book, those who take up benefits are often also those who encounter risks, and vice versa – limited experiences are safe but limited.

Significantly, if the positive association between online opportunities and risks were found elsewhere, this would strengthen the dilemma posed to policy makers by the UK Children Goes Online project, namely that increasing opportunities tends to increase risks, while decreasing risks tends to decrease opportunities. No way has yet been found, it seems, to increase opportunities while decreasing risks.

2.3. Attitudes and skills¹⁵

This chapter explores children’s internet skills and attitudes. It examines the relationship between skills and risks using three variables – age, SES and gender to test four hypotheses:

H2.3.1: As children get older they gain greater online skills, including self-protection skills

H2.3.2: Children who use the internet longer and for more activities develop more skills

H2.3.3: There are inequalities in skills and literacies as a consequence of inequalities in SES

H2.3.4: There are gender differences in the levels of skills (higher for boys)

Hypothesis H2.3.1: As children get older, they gain greater online skills (or Internet literacy, including skills enabling self-protection from online risk).

Are children’s online skills influenced by age? It is hypothesized that as children get older, they gain greater online skills (or Internet literacy) and so gain more opportunities and also, presumably, gain the skills enabling self-protection from online risks.

Several countries had research available that examined this hypothesis, and in each case, it supported the hypothesis, showing that skills increase with age.

- For example, in Austria, research suggests that younger children (under 10 years) often have few skills in dealing with the Internet and consequently they estimate their skills as limited. [102] Older children and adolescents are more experienced and therefore their use is far more skilled and safe. For the age group of 12-16 years it seems that safety and competence in dealing with the Internet primarily depends on the frequency of use; boys are a bit more competent and confident in using the internet. [72].
- In Portugal, an on-line survey (Cardoso, Espanha, & Lapa, 2007) showed a positive correlation between age and skills. When asked about who the Internet expert at home is, 81.5% of 16-18 years old consider themselves to be the ones to have more skills, against 41.7% of 9-12 years that declare the same. Self-perception of expertise is not the same as having actual skills, but gives us an idea of its differentiation by age and corroborates other indicators.
- A French survey (N=468, aged 10-21 years) shows clearly how skills develop with age (Martin, 2004).

Table 2.14: French children’s internet skills by age

Skills (%) by age	11-13 yrs	14-15 yrs	16-17 yrs	18-20 yrs
Can use a printer	92	98	99	99
Can install a software	74	81	83	85
Can surf	73	88	99	97
Can use a scanner	56	64	75	79
Can delete web site history	26	49	57	47
Can maintain the computer	26	40	50	62
Manage files and directories	39	50	65	70

¹⁵ This chapter has been written by Helen McQuillan based on comparative analyses done by Yiannis Laouris (H2.3.1, H2.3.2), Helen McQuillan (H2.3.3), Cédric Fluckiger & Benoit Lelong (H2.3.4).

- In the UK Children Go Online project (Livingstone & Bober, 2004), most 9-19 year olds (56%) who use the internet at least weekly consider themselves 'average' in terms of their online skills, though one third (32%) consider themselves 'advanced'. Specifically, 9-11 year olds describe themselves as 18% beginners, 55% average 20% advanced and 7% expert. Among 12-15 year olds, the figures are 4%, 58%, 33% and 4% respectively. Among 16-17 year olds, they are 2%, 52%, 40% and 6%. Overall, age (for 12-17 yr old internet users) is positively correlated with online skills, $r=0.27^{**}$ and self-efficacy, $r=0.12^{**}$ (NB the online skills measure covered a range of skills but did not specifically measure self-protection skills).

For the most part, it is unclear if increasing skills results in an increasing ability to cope with or avoid online risk. However, in Cyprus (EC, 2007), developing online skills could be seen to aid safety awareness.

- Among Cypriot boys aged 9-10 years, when respondents were asked as to whether encountering 'virus' problems changed the way they use the Internet it was evident that boys do not realize the seriousness of such a problem. But among boys aged 12-14 years, they had become very cautious in giving away their personal information on the Internet. They also mentioned that one should be very careful in the way they spell words on the Internet as misspelling a word might redirect to other irrelevant sites, and that with antivirus programs installed on their computers, they feel more protected although they mentioned the downside of these antivirus systems is that they have a license that expires very often/too soon.
- In Estonia too, older children (9 to 14 year olds compared with 6 to 8 year olds) tend to be more aware of online risks (Turu-uuringute AS, 2006) and they also do "more advanced things" (e.g. using MSN, sending and reading emails, downloading music, movies, software and video games) on the Internet (Mediappro, 2006).
- Similarly in Iceland (Capacent Gallup, 2007), as children grow older they seem to be more cautious towards the internet. For example, 20% of children aged 9 say they try to verify information obtained from the internet, compared to 53% of children aged 15. Although it seems to contradict this that the younger children are less likely to believe that information on the internet is accurate and trustworthy (some 13% of 9 year olds say that information obtained through the internet can be trusted, compared to 43% of 15 year olds), research is growing to suggest that increased skills brings trust (as the user gains the ability to discern valuable from misleading information) while novice users are often the most distrustful.

In conclusion, where evidence is available, it does seem that increasing skill may increase self-protection. But one should not be complacent about these growing skills. The Norwegian report observes that although many young people have good skills and knowledge about Internet and chat, and what precautions the need to take when chatting, still, some adolescents "forget" to take the necessary precautions and have unpleasant experiences on the Net and when meeting new "friends" face to face. After all, the link from safety knowledge to behaviour change is one of the most uncertain. Encouragingly, the SAFT projects showed that, from 2003 to 2006, the overall tendency to reveal personal information online fell, as the population gained in safety awareness).

Although there was no evidence available for this hypothesis in Belgium, Bulgaria, Czech Republic, Denmark, Germany, Greece, Ireland, Poland, Slovenia, Spain and The Netherlands, there is no reason to suppose that gaining such evidence would contradict the hypothesis. It seems that, as children grow older their level of skill increases, and this is likely to include their abilities to protect themselves from online risks.

Hypothesis H2.3.2: Children who use the internet longer and for more activities develop more skills.

Although it would seem obvious that children who use the internet for longer and for more activities would develop more internet-related skills and literacies, only three countries provided data for this hypothesis. In Austria, Norway and UK, findings showed a positive correlation between frequency of use and online competence and safety. However, with such few data, generalisations are unsafe.

Hypothesis H2.3.3: There are gender differences in the levels of skills (higher for boys).

In studies where children/young people self-report and self-evaluate their internet skills boys tend to rate themselves higher than girls. There is little evidence of tested or demonstrated skills levels. Comparable

research in Italy and Poland (EC, 2007; Eurydice, 2004) reports higher skills levels for boys in four ICT activities: downloading files, using PowerPoint, creating web pages and sending email attachments.

Conversely, in the UK and Portugal fewer boys than girls rate their internet skills poorly. Girls are more confident than boys in their information-searching skills. In the UK girls aged 12-15 who use the internet at home are significantly more confident about using the internet than the same age boys (97% vs. 91%). Also, more boys than girls report that they cannot find what they are looking for on the internet. It is unclear whether this confidence leads to greater safety awareness or practice. Possibly too, girls' preferences for communication and information searching are seen as lower-level skills, though technical skills have long been attributed to boys.

In Italy, two studies report higher level digital skills for boys. Accorsi and Gui's (Accorsi & Gui, 2006) study reported that a significantly higher percentage of boys than girls (56% vs 35%) demonstrated high level digital skills. Similarly in France, more than twice as many boys (57%) than girls (26%) consider themselves as the most skilled member of their household. In the UK, more boys (35%) than girls (28%) consider themselves as 'advanced' internet users. They are also significantly more likely than girls to be aware that there are illegal as well as legal ways to access films, music and software on the internet (80% compared to 72% of girls).

Boys tend to describe themselves as more expert and claim to have more technical and advanced skills. Research from Norway reports that boys are more technically-focused than girls in their online activities. Research from the Netherlands also examines mastery of skills. While there are no gender differences reported in information sharing and word processing skills a lot more teenage boys than girls say they are skilled in activities such as installing anti-virus programmes, upgrading software or replacing a hard drive. Austrian research links boys' higher skills levels with their more frequent use of the internet. In Sweden boys' greater technical skills are considered to result from their use of a wider range of applications including downloading, skype and web development. A similar level of skill is not apparent in their self-protection or safety skills.

Different internet activities result in different ranges of skills. Evidence suggests that boys and girls may be developing different skill sets based on their different activities, but it is inappropriate to nominate more technical/machine focused skills as higher level than communication and information literacy skills.

Research from Bulgaria reports that boys boast of being more knowledgeable, more skilled and more daring than girls. Kirwil's Polish study shows how this can have consequences for boy's greater exposure to potential risks. Young teenage boys (13-15) report knowing how to deal with internet filters blocking access to pornographic websites and also how to set them up again after disabling them (Kirwil, 2002).

Caution needs to be expressed in drawing conclusions for several reasons. Boys and girls are no homogeneous groups and there are many differences in skills among genders as between them. Where evidence is available it is difficult to compare, there are inconsistencies in skills measurements, and much data refers to self-perceptions of skills levels rather than tested or demonstrated skills.

The different interests of boys and girls, as well as social norms influence their choices of internet activities, resulting in different skills sets and exposure to risks. This should be considered in awareness and safety campaigns

Hypothesis H2.3.4: There are inequalities in skills and literacies as a consequence of inequalities in SES.

This hypothesis sought to examine the relationship between inequalities in skills and literacies and inequalities in socioeconomic status (household income, parental education and social class). This has not been examined in depth in any study. Limited evidence is provided by four countries: France; Italy; the Netherlands; UK. In each case, the research had a slightly different focus. In higher SES households in France parents are more familiar with computers and therefore able to help their children. In lower SES households friends play a greater role. There is no indication of the impact of this help on either skills or safety awareness or strategies.

In Italy there is a close connection between parents' professional status and the level of children's digital skills. In the Netherlands the important variable is the young people's education level. Teenagers with higher education levels have more ICT skills.

Home ownership of computers appears to be an important variable for skills development. UK research with regular internet users aged 12-17 shows a correlation between SES, online skills and self-efficacy. However, this was not the case across SES in children who have similar levels of home internet access. The Ofcom Media Literacy Audit (Ofcom, 2006) found that children aged 12-15 years from minority ethnic groups are less aware of film, music and software illegal downloads (65% compared to 76% across the UK).

Conclusion

The relationship between online skills and risks cannot be conclusively addressed based on the comparative research examined here. Even establishing the links between age, gender, SES and online skills is tentative without considering some other variables.

Examining internet skills is problematic for a variety of reasons. Research on internet skills is sparse and data exploring links between skills and risks even more so. Skills are poorly conceptualised and measured in internet research, with little definition of task-based, technical, internet literacy or self-protection skills. Research tends to focus on skills in using internet applications, with very little examination of content creation or more creative and collaborative use of the internet.

The context of skills acquisition has a bearing on attitudes, self-confidence, risk-taking behaviours, self-protection strategies as well as skills. The Eurobarometer study (EC, 2007) notes the importance of informal learning for skills development. Learning to use the internet is described as a process that is easy and quick. Taught the basics at home by parents they develop their skills through self-learning and peer observation and support. Comments such as 'there is nothing to learn' when it comes to the internet suggest that attitudes to learning and skills need to be considered more carefully in future research and internet awareness and safety campaigns.

2.4. Mediation by parents, teachers and peers¹⁶

This sub-chapter will summarize empirical evidence from the European countries on how parents, teachers and peers mediate children's internet use. Unfortunately, very little is known about the actual influence of teachers and peers, although it might be assumed that they play a crucial role. Therefore, the following findings mainly refer to parents' behaviours.

<i>Research question R2.4.1: To what extent do parents set rules for different media?</i>

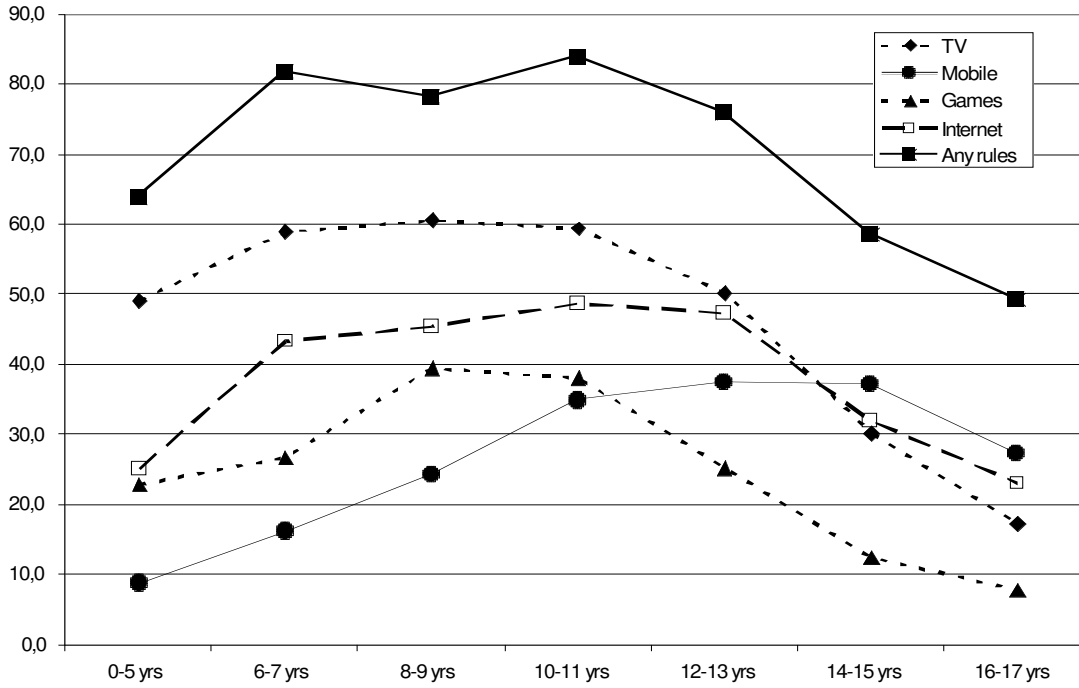
In the Eurobarometer survey parents were asked whether they have set rules about using television, mobile phones, games consoles and the internet. The results shown in figure 2.4.1 are based only on children who use the internet.

- It was expected that more rules would be set for younger children. However, the general pattern of results is an inverted U-curve. Until the age of 10 years old, there is an increase in setting rules; after that there is a strong decrease.
- The shape of the curves differs substantially across media. Until the age of 12-13 years old, television is the most regulated medium.
- Since the results in figure 2.6 are based on internet users only, this suggests that parents of children who use the internet are more likely to set rules for television than for the internet. After the age of 12/13 years more rules are set for internet than for television.
- Other media are less regulated than either television or the internet. The results reflect the strong position of games among younger children, whereas rules for mobile phones are becoming more and more important for teenagers. Parents of children aged 14 years and older are most likely to set rules for mobile phones.

¹⁶ This chapter has been written by Thomas Wold based on comparative analyses done by Uwe Hasebrink (R2.4.1), Thomas Wold (R2.4.1, H2.4.1), Helen McQuillan (R2.4.3), Cédric Fluckiger & Benoit Lelong (R2.4.2), and Lucyna Kirwil (R2.4.4, H2.4.2).

- There are almost no gender differences with regard to setting rules about using television and the internet; the curves for boys and girls are very similar. The only exception is that parents set substantially more rules about playing games for boys of all age groups. In the face of boys' particular interest in games, this finding is highly plausible.

Figure 2.6: Parents who have set rules for using different media
(in % of parents, whose children use the internet; EU 25)



Source: Eurobarometer 64.4 – Special No. 250: Safer Internet, December 2005; basis: parents/guardians with children less than 18 years.

If we look at different countries, noticeable differences can be observed. Parents in the different countries differ with respect to their tendency to set rules about their children's media use (see table 2.15, column 1).

Whereas almost 80 per cent of the Irish parents have set rules, this is the case for only around 50 per cent of parents in Slovenia. Although the calculations are based only on children who use the Internet, parents are still more likely to set rules about television viewing than about using the internet.

Again, there are clear differences between the countries with regard to the medium, which is more or less regulated: column 4 of table 2.4.1 shows the difference between the percentage of rules for television and rules for the internet.

The emerging pattern is quite clear: parents in Sweden, Denmark, the Netherlands and Estonia are more likely to set rules for the internet, whereas Portugal and Poland pay more attention to regulating their children's television behaviour.

The ongoing diffusion of the internet seems to raise parents' internet literacy and awareness of risks; thus they increase their efforts to regulate their children's internet use.

Table 2.15: Parental mediation (I): Rules set about children's media use
(in per cent of parents, whose children use the internet)

	Rules set for ...			
	1) at least one	2) TV	3) Internet	4) Difference

	medium			column 2)-3)
EU 25	67.9	42.3	37.6	4.7
Ireland	79.7	60.5	61.8	-1.31
Netherlands	74.9	44.8	53.4	-8.55
Spain	74.5	49.7	40.1	9.64
France	74.2	52.4	41.9	10.46
Sweden	72.8	34.8	58.2	-23.41
Austria	70.1	42.6	35.1	7.53
United Kingdom	68.7	45.3	41.8	3.51
Belgium	68.1	45.9	44.6	1.32
Germany	65.6	45.3	42.4	2.89
Poland	64.8	36.0	24.2	11.78
Italy	64.2	31.9	23.5	8.36
Estonia	62.6	23.9	32.2	-8.36
Czech Republic	60.3	23.3	24.2	-0.95
Portugal	57.0	39.0	22.3	16.66
Greece	56.9	35.5	31.2	4.29
Denmark	55.9	23.8	35.5	-11.72
Cyprus	54.8	37.3	34.8	2.54
Slovenia	50.6	30.3	25.3	5.01

Source: Eurobarometer 64.4 – Special No. 250: Safer Internet, December 2005; basis: parents/guardians with children less than 18 years.

Research question R2.4.2: To what extent do parents make use of filtering or blocking tools?

One option for parents to regulate their children's internet use is the use of filtering or blocking systems, which can help to avoid the child coming into contact with potentially harmful content. On the European level, 28 per cent of parents say that they use these filters at home (see table 2.16); even more (31%) say so for schools.

Again, there is considerable variation across countries, with UK parents and UK schools (as perceived by parents) being the most frequent users of these technical tools; particularly the result for the UK schools is notable. At the other end of the spectrum are Portugal, Estonia, Bulgaria and Slovenia, where filtering tools are rarely used.

It is also important to consider the extent to which parents are aware of filtering programs and how they can be used. Surprisingly enough, on the European level the percentage of parents who do not know about filtering tools is less than 10 per cent. Awareness is lowest in the Czech Republic and Poland – note that these countries were classified as being within the highest risk category (see chapter 2.2).

Table 2.16: Parental mediation (II): Use of filtering/blocking tools
(in per cent of parents, whose children use the internet)

	Filtering/blocking tools ...		
	at home (%)	at school (%)	unknown (%)
EU 25	27,6	30,8	8,0
United Kingdom	46,2	71,0	4,2
Ireland	35,2	43,4	2,8
Germany	29,8	21,5	5,0
Netherlands	28,0	31,6	0,8
Spain	25,6	14,4	4,4
France	25,4	26,6	10,2
Austria	21,8	17,7	9,5
Cyprus	20,7	20,7	0,0
Belgium	20,6	9,8	6,7
Italy	20,2	10,6	6,7
Sweden	19,9	26,5	0,9
Poland	18,8	30,0	21,3
Denmark	18,4	20,3	1,9
Greece	11,9	22,0	13,6
Czech Republic	10,1	20,7	21,8
Portugal	8,7	20,7	10,9
Estonia	7,0	11,3	10,2
Bulgaria	6,6	8,8	7,7
Slovenia	5,1	1,9	17,2

Source: Eurobarometer 64.4 – Special No. 250: Safer Internet, December 2005; basis: parents/guardians with children less than 18 years.

Research question R2.4.3: What are the main strategies of parental mediation practised?

Evidence on this question is available from 17 countries, though there is great variation in the evidence available from the different countries. There seems to be a clear research gap here.

The different strategies of parental mediation are, in order of importance:

1. Time restriction; mentioned by 11 of 17 countries.
2. Supervise/control; mentioned by 8 countries.
3. Talk to/teach children about safe usage; mentioned by 8 countries.
4. Filtering software; mentioned by 7 countries.
5. Rules against revealing personal information; mentioned by 6 countries.
6. Not to visit certain sites; mentioned by 6 countries.
7. Monitor visited web pages/check history file; mentioned by 5 countries.
8. Rules against meeting someone they have only met online; 4 countries.
9. Not talking to strangers in chat rooms; mentioned by 4 countries.
10. Rules against downloading files; mentioned by 3 countries
11. Not allowed to buy things, mentioned by 2 countries.
12. Rules against foul language/bad behaviour; mentioned by 1 country.

The material seems to be somewhat inconclusive; it does not give us sufficient evidence to claim that the various strategies for parental mediation do not exist in the countries that have not mentioned them, but it does point to gaps in the available research material.

1. Time restrictions

Imposing time restriction is the most common strategy for parental mediation. Eleven of 17 countries have material confirming this. In nine of these countries it is also cited as the most important means of mediation. There might be different reasons why time restrictions are so widespread. To divide internet access between family members and to make sure school is given priority are two considerations that are clearly linked to time restrictions.

Economic motives might also affect this depending on how the Internet use is charged; if they pay a fixed sum every month, as is usual with broadband, there is no economic motivation for time restrictions. But if they pay for every minute online and if they have access via a modem that blocks the telephone line, then there are economic and infrastructural reasons for time restrictions.

Time restriction is also an easy strategy for parental mediation. It is easy to decide fixed rules for time spent with computers or games, and to use it as a reward or punishment. Time restrictions on internet use are also in harmony with a general attitude that Internet should not take up too much time and that the children need variation in their activities. For further research it would be interesting to ask parents why they have time restrictions, how they organize them and how they handle them, and to ask children what they think about the rules and if they have strategies for bending these rules.

2. Supervision/control

This form of parental mediation is mentioned by eight countries, and cited as an important strategy in seven of them. It is done either by sitting next to the children while they are online, or by watching the screen/checking up on them from time to time, preferably with the computer in a shared room. Will this strategy lessen in importance or become more difficult with the development of the bedroom culture, where more children and young people have a computer in their bedroom?

3. Talk to/teach children about safe usage

8 countries have findings suggesting that parents talk to their children about Internet usage and try to teach them about safe usage. A large majority of the parents in the 8 countries do this often or from time to time. However, the numbers from the Czech Republic indicate a possible source of error: 82 % of the parents state that they talk to their children about safe internet usage, but only 39 % of the children state the same. The discrepancy is quite large. Are the parents over-reporting as part of being "the good parent", or are the children under-reporting as part of becoming autonomous? Or do they understand the question and interpret the conversations differently? These are possible questions for further investigation.

4. Filtering software

In 7 of the countries, the parents state that they have installed filtering software, although it is usually a minority of the parents: 43 % of the parents in Germany, 33 % of the parents in the UK, 32 % of the parents in France, 21 % of the parents in the Netherlands, 11 % in Poland.

The Spanish report displays strongly divergent numbers. According to one study, 44 % of the Spanish parents have installed filtering software, but a different study claims the number to be 11 %. A possible reason for the divergence can be that some parents might confuse filtering software with firewalls, anti-virus and anti-spamming software, and this might not be reflected in the study. On the other hand, it is also possible that filtering software come as a part of a package without the parents being aware of it.

Further research on this question ought to examine whether the parents know what a filter is, how they use it and what purpose they want the filters to fulfil. Information about this is sparse, but in the Spanish report the filters are mostly related to pornography, terrorism or violence rather than the use of chat-room, instant messaging and e-mail.

5. Rules against revealing personal information

6 countries have mentioned this, and it is common in five of them (Iceland 63 %, Italy 69 %, the Netherlands 57 %, also common in Ireland and Spain). In Poland, only 4 % of the parents state that they have such rules. Why is this not more common? Will we see a change here as themes like identity theft are hitting the agenda, or will the urge to (and the right to) publicise oneself remain a priority?

6. Rules not to visit certain sites

This is mentioned by 6 countries, but only in Spain (69 %) and Italy (72 %) do we have high numbers. It also seems to be common in Ireland and Belgium, but no percentage is stated. In Poland (9 %) and Austria only a minority have such rules. The material does not say much about what kind of web sites are prohibited, but Belgium and Italy state that parents have explicit rules against sex or "dirty" content. Why do so few have such rules? Is it because they trust that their children will not visit such pages anyhow, do they trust that a filter makes such rules unnecessary, or do they feel that they cannot control this aspect of their children's media use anyway?

7. Monitoring visited web pages/checking the history file

This is mentioned by only five countries, and only a minority of the parents state they have checked their children's Internet history. The Netherlands (38%) and the UK (30%) have the highest numbers in this category. The other three countries are Spain, Ireland and Austria.

There is an important distinction between supervising and monitoring the children's Internet use. Supervising means open observation and discussion or being in the same room while the child is online, and is quite common, while monitoring means that the parents are secretly checking which pages the child has visited. Very few parents perform this technical equivalent of going through their children's drawers; is it out of consideration to the children's right to privacy, or is it simply because the parents lack the technical competence to do this?

8 and 9: Rules against meeting someone they have only met online, and not talking to strangers in chat rooms

These related mediation strategies are given high priority in four countries (Iceland, Ireland, Norway and the Netherlands have rules against meeting someone, while Iceland, Ireland, Norway and Italy have rules against talking to strangers in chat rooms). Unfortunately, evidence is lacking (though rules may not be) in several countries. It is also a possibility that parents have general rules concerning who their children are allowed to talk to and socialize with, hence eliminating the need for special rules concerning chat rooms. "Don't talk to strangers" is a quite general rule, applicable both for the playground and the Internet.

10., 11., and 12: Downloading files, buying things, use of foul language

The existence of rules against downloading files is mentioned by three countries; Belgium (more common for girls than boys), Estonia (less than 10%) and the UK (17%). In other words this is not a very widespread rule. Rules against buying things on the Internet is only mentioned by a small percentage in two countries, and only Norway has mentioned rules against foul language and bad behaviour, although in Norway it is quite common. The considerations for this might be the same as for rules against meeting strangers: It can be more relevant in some countries than others, depending on the diffusion of Internet and the way it is being used, and it can be that more general rules concerning language, behaviour and money eliminate the need for special Internet rules.

Wish for guidance

It is quite clear that the parents wish more guidance concerning their children's use of online media. The parents have suggested different ways of doing this. In Austria the parents suggested arranging special web-portals for children with a child safety lock offered by internet providers that would preclude complicated filter software. French parents thought an information guide would be useful, while parents in Norway and Spain said they needed more information on safe use of electronic media. The Spanish parents particularly wanted more information about how to protect their children from illegal or harmful contents, and 38% of them did not know where to report illegal Internet content. They said that the principal means of receiving this information should be from school (55%) and from the media (32%).

In future research, several kinds of country classification would be possible:

- Preference for restrictive versus flexible or active regulation (e.g. forbidding or talking)
- Preference for time restriction versus content supervision (as both are familiar to parents as regards television regulation)
- Human interaction versus delegation to technical systems (e.g. filtering and monitoring software)

At present, however, the measures are too variable across countries to permit reliable and comparable analysis or country classifications.

Research question R2.4.4: Are there SES differences in parental mediation?

Parental mediation has been very little studied throughout Europe. However, evidence could be found in several countries, that all show differences in parental mediation related to SES differences. Generally, it seems clear that there is more parental mediation in higher SES families, as reported by parents.

This parental mediation may be described differently from one country to another, but in every country, upper class or highly educated parents claim to implement more parental mediation than other families.

However, with the exception of Ireland, results are not very accurate (c.f. National Reports). French upper class parents are more likely to set up time restrictions and inculcate self-limitation (Pasquier, 2005). Icelandic children whose parents have a higher level of education are more likely to say that their parents check which websites they visit and check on them while they are browsing the Internet. Spanish parents with high social status are more likely to supervise their children than parents in the middle social status group (Tezanos, 2006), while in UK higher SES parents implement more rules and practices (Livingstone & Helsper, in press). German working class parents are said to be less interested in the media consumption of their children. In the Irish report there is evidence that the mother is more likely than the father to supervise the children's media use, and in Ireland children are more likely to talk to mothers than fathers about their online activities (Webwise, 2006) but apart from that we have little information on the differences between maternal and paternal mediation.

Future research should use clear, comparable measures to study parental mediation, including the use of parental control tools. Most importantly, research is needed that seeks to evaluate the effectiveness of these different forms of parental mediation on the risks and opportunities experienced by children. There are some unexpected results that are still to be explained, e.g. on higher SES in Spain and minority ethnic groups in UK.

Future research should also try to explain SES differences, rather than simply describing them. Firstly, control of the child's relationships appears to be stronger among higher SES families than it is among the working classes. Sociological research has shown these parental behaviours depend on different ways to secure social capital and socially homogeneous relation networks for the children. This could explain why "chatting" with strangers on the Internet is less accepted by higher SES families, and disappears more frequently and earlier as the child grows older compared to lower SES families. Secondly, parents with higher qualifications tend to supervise access to media content more strictly. Their educational strategies are based on hierarchies that put classical culture (books and "serious" newspapers) above the TV, entertainment-based magazines and information available on the Internet. Here again, family strategies for the transmission of cultural resources depend on social and economic status: more research should be undertaken on the effects of these strategies on parental control of internet use.

Research question R2.4.5: Are there gender differences in parental mediation?

Comparative analysis of this research question is difficult. Gender differences are reported in three countries: Iceland, Ireland and Spain. Two countries reported no gender difference in parental mediation: Belgium and the UK. Limited evidence is available from seven countries: Estonia, France, Germany, Greece, Poland and Portugal. There is no evidence available in the remaining 10 countries.

Estonian findings (Metsoja, 2006) suggest that girls tend to talk more about the internet with their parents than boys do, but the difference is not very large; 12 % vs. 7 %. In Greece, slightly more girls (67%) than boys (64 %) are expected to phone home during the day, but at the same time, fewer girls (27%) than boys (29%) feel that they are under parents' surveillance, and more boys (54%) than girls (41%) report that their mobile phone use is regulated. In Iceland there is a significant tendency that girls are more subject to parental control; they have more rules regarding Internet use than do boys (94 % vs. 89 %) and 33 % of the girls and 23 % of the boys have parents sitting with them while they use the internet. In Ireland there are also different rules for girls and boys. Details are missing here, but it is clear that mothers are more protective of girls, and that the rules predominantly relate to "stranger danger". In Spain there are also more rules for girls than for boys, although the differences are rather small except for one rule: 63 % of the girls are not allowed to give out personal information online compared to 42 % of the boys.

It is not possible to determine systematic cross-national patterns or variations from the limited data. Girls seem to be subject to more parental supervision than boys, but from the available material we cannot decide if this results in less risk taking behaviour. It seems that parents think that girls are more vulnerable and in need of protection than boys, but Norwegian findings clearly indicate that more teenage boys than girls have experienced unwanted sexual attention online (SAFT, 2006).

More attention should be given to parental perceptions of risk, exposure to risk and risk-taking behaviour among boys and girls. Parents tend to talk more to girls about internet dangers and safety than boys. Safer

internet campaigns could highlight the need for better communication with boys. As solitary and bedroom use of the internet grows, and supervision and knowledge of children's internet use diminish, it is likely that these will be used as opportunities for more risk-taking behaviour.

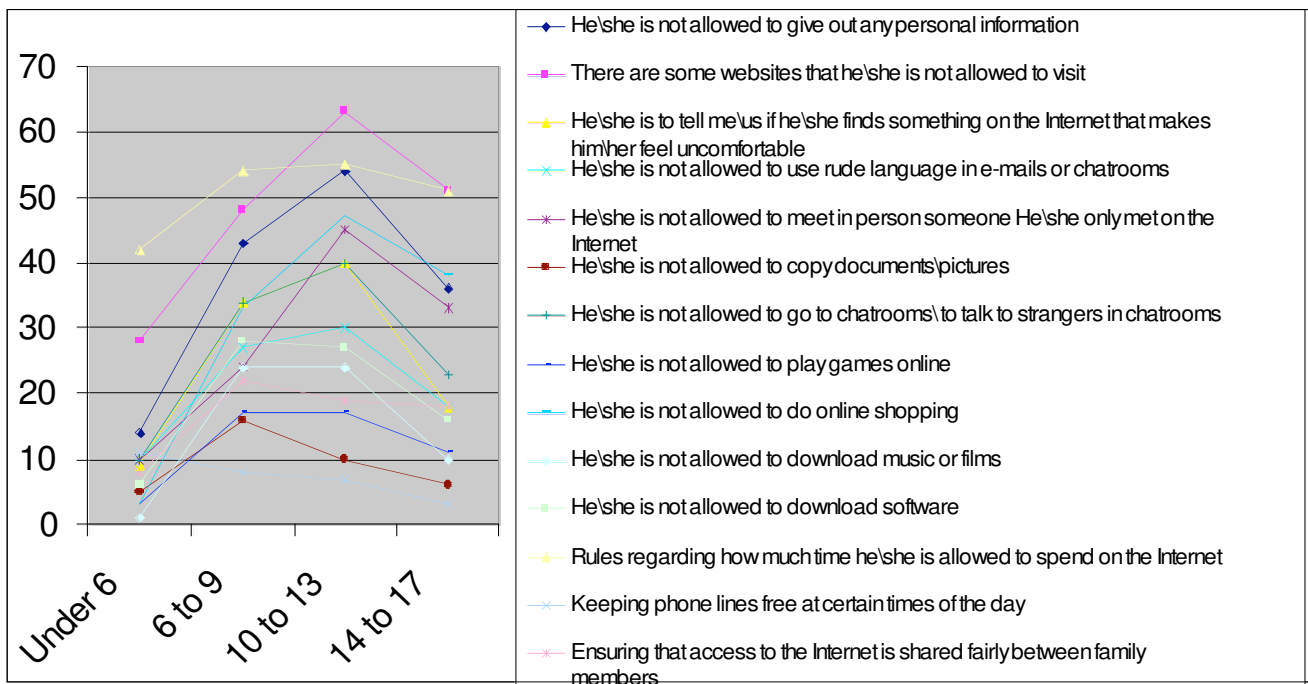
More research should also be done on gendered forms of parental control as a whole (i.e. not only control of internet uses, but also control of clothes, school performances, practices of going out, etc.) For example, the presence of girls in public spaces (such as streets or bars) is generally more controlled than boys'? These attitudes depend on family strategies which differ from one cultural area to the other: this approach could thus be fruitful for cross-national comparisons.

Hypotheses H2.4.1: As children grow into teenagers they are subject to reduced parental mediation in their use of the internet.

We found evidence to support this hypothesis in 11 countries: Austria, Estonia, France, Greece, Iceland, Ireland, Italy, Norway, Spain, Sweden and the UK. We found evidence to contradict in 2 countries: Poland and Portugal.

The answer to the hypothesis would be: it depends on the age. The Eurobarometer dataset provides some results on how parental mediation evolves while children are growing into teenagers (see above). As already seen above for the general rules about using different media, answers provided by parents from EU 25 are quite clear. From 6 to 12, while children are growing into pre-teenagers, European parents tend to make more rules. After 12, the use of rule decreases.

Figure 2.7: Rules set for the use of the internet by age
(% of children who use the internet)



Parental rules reflect the phases of the child's growing independence. For younger users, parental constraints are rather low. An explanation would be that younger children tend to follow parental expectations, making explicit rules unnecessary. As children grow older, they tend to experiment beyond what parents allow them to do. They want to explore the world, to learn about youth culture, to meet peers outside their familial environment. Parents feel the need for specific rules and parental control tools.

When teenagers are growing older, their growing independence is expressed through increased freedom, and parental control tends to loosen. Almost all national reports reflect this tendency. Countries providing results focused on younger children show that parental mediation is growing with the age, while countries dealing with teenagers agree that parental mediation is decreasing with age.

Evidence to support

Where national reports are mainly focused on teenagers (for reasons of research availability), the general picture is very clear: Parents impose fewer and less strict rules concerning media usage as their children grow into teenagers. Actually, the development starts earlier than that, and there is a time continuum where rules decrease with age, although there are often small, but significant, differences between the age groups. For instance, in Estonia 12 % of children aged 12-13 say that their parents have forbid them to visit certain web sites, while 9 % of 14-16 year-olds claim the same, and 1 % of 17-18 year olds. The same goes for downloading music or movies (14 %, 8 % and 4 % respectively) and time restrictions (18%, 19% and 8 %) (Turu-uuringute AS, 2006).

Time restrictions: In Italy 45% of parents limit the total amount of time spent online by their children aged 7-11, against the 26% of parents of teenagers aged 12-19 (Eurispes/Telefono Azzurro, 2007). The Estonian report also states that time restrictions on Internet use decrease with age. This goes for online games and other computer games as well, although here time restrictions are still quite common (Mediappro, 2006).

Monitoring visited sites: Austrian findings indicate that parents stop monitoring visited websites as their children grow older, and in Iceland 78% of the 9 year olds say that their parents check which web sites they have visited compared to 22% of the 15 year olds (www.eukidsonline.net). The French report states that the proportion of teenagers saying their parents let them do what they want on the Internet increases with age: 63% of 11-12 year-olds, 70% of 13-14 and 78% of 15-16 year olds (Metton, 2006).

Filtering software: There is less use of blocking software as the children grow older. In France, 31 % of 12-14 year olds say they have filters on their computer, while 25 % of 15-17 years old say the same (Martin, 2008). In Iceland 33% of the 9 year olds say that their parents use devices of some kind to prevent them from looking at particular websites compared to 9% of the 15 year olds.

Supervise Internet use: In the Icelandic report, 41% of children aged 9 say that their parents sometimes sit together with them while they surf the internet compared to 13% of 15 year olds (www.eukidsonline.net). In Ireland it is common that parents of 9-10 year olds sit with their children or are nearby when they are using the internet, but they rarely sit with older children (EC, 2007).

Evidence to contradict

Poland and Portugal gave evidence to contradict the hypothesis, although the findings are ambiguous. Part of this can be explained by the age group targeted by the studies (i.e. including younger children). In Poland, parents with teenagers more often set rules for internet use (27%) than parents having a child at lower school age (11 %). The older the child, the more rules the parents set parents on the internet use. At the same time, when it comes to computer use the numbers indicate the opposite: 27 % of parents with children aged 6-11 set rules for computer use, while 17 % of parents with children aged 12-17 do the same (www.eukidsonline.net). The reasons for this might be by more intensive usage of the internet by older children and the growing costs of this activity. Many households in Poland only have access to a very slow and expensive internet, while offline computer use is free of charge and not prompting restrictions out of economical considerations.

In Portugal parents tend to have more concern with older children than with younger ones. 43 % of 16-18 year olds claim to have had discussions with their parents about the amount of time spent online, against 36% of 9-12 years olds (Cardoso et al., 2007). This probably has to do with the fact that, according to the same study, older children use the internet more frequently. Parents seem to be more concerned with the period of the day that younger children use the internet than with the amount of time: 20% of 8-12 years old declare to had discussions with their parents about the period of the day they use the internet, while this figure is slightly lower (17%) in what concerns teenagers (16-18 years old).

It seems to be evident that as teenagers grow older, there are fewer rules and less parental control on all their activities. It is not surprising that this goes for media use as well. For instance, in Greece, 75 % of 11-15 years olds are expected to call a parent during the day compared to 60% of the older teenagers (Tsaliki, 2008). The Greek report also states that parental economic supervision drops to lower levels as their children grow up (28% of those aged between 16-19 say that their parents check their bills, 43 % for those with younger children).

Another interesting finding from the Swedish report is that when looking at the parent's answers, parental mediation is very little reduced between the age groups 9-12 and 13-16, but when looking at the children's

answers, the differences are bigger (Medieradet, 2006). This confirms other results showing that parents seem to overestimate parental control, while teenagers seem to underestimate it (see UK Children Go Online project). Teenagers, more than children, may want to be seen as more mature and emancipated than they really are, so that the differences are bigger with teenagers than with 9-12 year olds.

Bedroom culture

In the Norwegian report there is a clear tendency that when children grow older, they get more freedom to use the internet on their own, and a growing number of children also have internet access in their bedrooms. The emergence of bedroom culture can make parental mediation more difficult, especially when it comes to supervising the children's internet use by sitting down with them or checking up on them from time to time. The autonomy of teenagers must also be taken into consideration here. The report from Ireland states that teenagers tend to keep their use of the internet private from their parents. Virtual environments are relatively free of parental control. Teenagers' increased use of the internet in their social lives results in a reluctance to alert parents to its negative aspects for fear of having access blocked by protective parents (Webwise, 2006).

Does increased skill make the Internet safer or more dangerous?

As children grow older, they usually become more competent in their use of the internet. On the one hand, this competence can be seen as making internet use safer. On the other hand, competence opens up new opportunities and new risks. Do the parents perceive their children's competence as opening new risks or new opportunities?

In the French report, a survey shows that children's skills grow (logically) with age, and that children with higher technical skills are subject to a reduced parental mediation (Martin, 2004). Fluckiger's qualitative study between 2004-2006 (Fluckiger, 2007) points out how greater skills are needed throughout the independence and emancipation process, in order for the children (12-16) to build a personal digital territory, i.e. protecting their instant messaging account with passwords, deleting information about visited web pages, etc. Greater skills may also allow children to hide some of their uses from their parents (such as deleting visited websites in the browser's history). On the other hand, the IFOP study (IFOP, 2006) shows that parents of older teenagers think their child is exposed to a greater amount of online unsuitable content: 41% of high school pupils parents think their child has already been exposed to sexual material on the internet (only 12% in primary school), and 37% think the child has been exposed to violent content (only 8% in primary school).

Hypothesis H2.4.2: More parental mediation results in reduced exposure of children to online risks.

There is a very little evidence to support or contradict Hypothesis H2-4-1 because 17 countries out of 21 reported that there is no pertinent evidence available. The remaining countries reported conflicting findings. Ireland found evidence to support the hypothesis that more parental mediation results in reduced exposure of children to online risks, while Poland found evidence to contradict it. The United Kingdom found evidence both to support and contradict the hypothesis. Two countries commented on a general basis: Cyprus' comment supports the hypothesis while Spain's comments contradict it.

Research question R2.4.6: Is there evidence that particular parental strategies or styles of mediation effectively reduce the risk that their children experience online?

Four countries replied to this research question. Three countries cited empirical findings suggesting that some techniques mediating the internet for children might be efficient in reducing child's online risks.

Belgium:

- Parental control
- Instructive mediation better than restrictive mediation

Ireland:

- Parental supervision
- Talking
- Rules setting

Poland:

- Blocking/filtering websites in public sphere, not at home

UK:

- Restrictive mediation indirectly through decreasing child's activities online

Two findings seem to be interesting and demand further studies:

The UK's findings (Livingstone & Bober, 2004) on restrictive mediation shows that this kind of mediation may reduce the child's risks online indirectly through a reduction in child's online activities, which should result in a decrease in the probability of being exposed to a risky situation. A question arises here, as to whether restrictive mediation might block access to informative and useful information, and might even be in conflict with children's right to seek information. In Poland blocking/filtering the websites appeared efficient with regard to computers located in public areas (Internet or cyber cafés and schools).

Conclusions

Some kinds of mediation are effective and some are not. Findings from Poland that mediation through blocking/filtering the websites is not efficient at home but efficient in public sphere (i.e. in the Internet café and school) suggest that social factors may moderate efficiency of at least some kinds of parental mediation.

The selection of specific kinds of parental mediation of the Internet should result from parents' aspirations for the child. Do they want mainly protect a child against frustration, "socially bad things", social conflicts or do they want their child to develop self-directedness, need for freedom and skills useful for his/her future career? Parents' aspirations could determine the type of parental mediation. And parents' aspirations are themselves determined by individualistic-collectivistic values orientation to a great extent.

For instance, on the basis of theory of individualism-collectivism (Basabe, 2005; Lee, 2005; Inglehart & Baker, 2000) people's attitudes to the internet vary significantly. In individualistic cultures people behave self-centrally and engage in open interpersonal emotional expression in order to attain their personal well-being. They have a need for autonomy, independence and individuality. On the other hand, in collective cultures, group membership occupies a central place and the importance of oneself is only peripheral. People in collectivist cultures restrain their personal emotions, maintaining their positive relationships through obedience and unselfishness. This distinction allows one to predict that parents from collectivistic countries will mediate the internet to their children in more interactive ways than parents in individualistic countries (Kirwill, 2008). Thus it might be assumed that:

- Hypothesis 1: Parents from individualistic countries as compared to parents from collectivistic countries prefer to use mediation allowing a child more autonomy and self-directedness online, for instance, setting instructive rules, and not banning some activities.
- Hypothesis 2: Parents from collectivistic countries as compared to parents from individualistic countries prefer to use mediation assuming obedience and respect for parents' values and rules, for instance, using restrictive mediation, blocking, imposing time restrictions and banning activities, not using instructive rules.

Conclusions regarding future research

There is need for research on the types of parental mediation of children's use of the internet. It can be instructive or assisting, it can be a kind of flexible monitoring or rigid control, it can be fun or a duty for the parent. Monitoring children's activity online is psychologically different from co-viewing TV. New specific research on the mediation of the internet is needed to investigate the efficiency of various types of parental mediation and the factors that make specific kinds of parental mediation efficient or inefficient, for instance: gender, age, parental literacy (on the computer and the Internet), parental attitudes to new technologies or parental values.

This kind of research should include not only survey studies. Qualitative in-depth studies are also needed to investigate how parents and children understand and evaluate the different types of mediation.

Promotion of a Safer Internet

Parental techniques for socializing children vary across Europe. Parental techniques of mediation will also vary across European countries, and it is also possible that the efficiency of the different mediation strategies

will differ from country to country. Parents may be more efficient in assisting children in how to avoid online risk and use online opportunities using a certain kind of mediation of the internet that is consistent with the values of the culture to which their country belongs.

The European Values Survey¹⁷ showed that in 2000 there were four groups of countries in Europe as described in terms of the values orientation characteristic of their culture: Protestant Europe, Catholic Europe, English speaking Europe and Ex-communist Europe.

It might be assumed that the way that parents (or the state, or the school, or the child himself/herself take responsibility for the children's safer Internet and parental techniques mediating the Internet may vary across the countries belonging to different groups defined by individualistic-collectivistic value orientations. In addition, finding the cases of efficient parental mediation of the internet at the country level may allow us to describe the conditions under which the technique is efficient and to disseminate knowledge concerning how it should be put into practice in other countries.

A suggestion is that research on a country level is needed to establish the conditions under which some kinds of parental mediation are more efficient than others. And then at the level of groups of countries we need research on the efficiency of different ways of implementing the recommended techniques.

2.5 Conclusions

2.5.1 Conclusions regarding the general theoretical model

The general theoretical model

Researchers have worked hard in recent years to keep pace with developments in online technologies and with children and young people's online activities - activities which have earned them the title of 'digital natives' by contrast with their 'digital immigrant' parents and teachers (Prensky, 2001). A few years ago, there was little published research on children and the internet (Livingstone, 2003). Today, a dramatic expansion in research is generating a growing consensus regarding key conceptual claims.

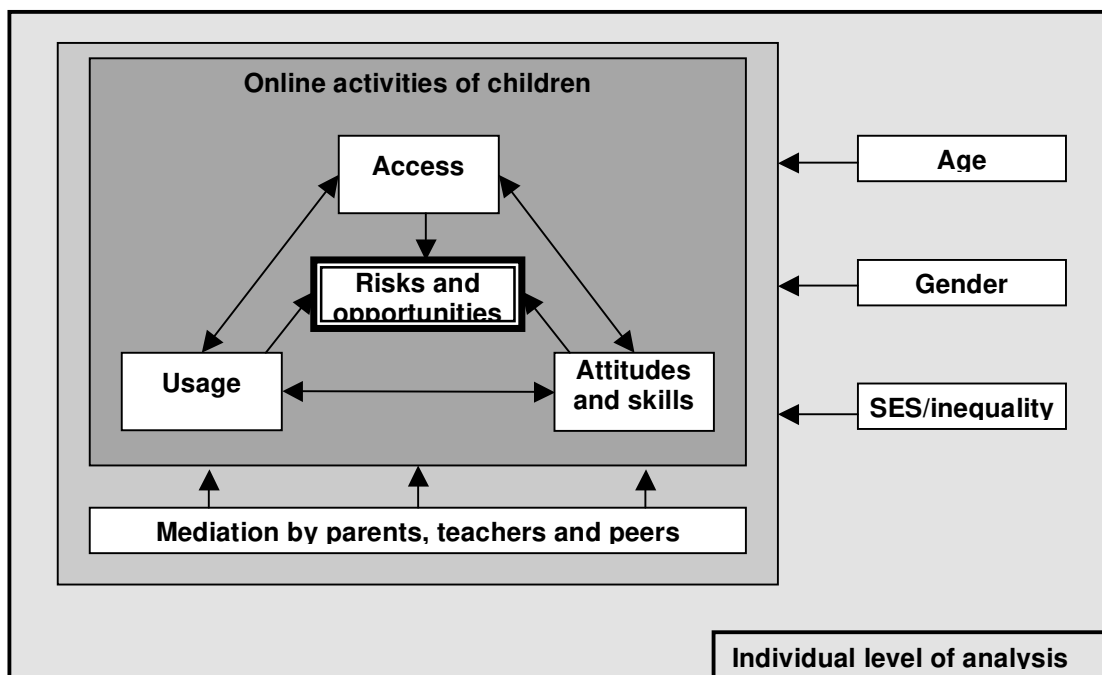
- First, researchers concur that access is a prerequisite for, but underdetermines, use. A child-centred account locates new technologies in the context of children's everyday life to understand what they complement, displace or remediate (Bolter & Grusin, 1999), how they fit meaningfully in established social, spatial and temporal routines (Bakardjieva, 2005), and how far they afford new opportunities or risks (Hutchby, 2001).
- Second, research should avoid a technologically determinist, impact-centred approach, and instead seek to understand how the internet is socially shaped, in terms of institution, design and political economy, and also meaningfully appropriated in diverse contexts by its users (Berker, Hartmann, Punie, & Ward, 2006). This is not necessarily to assert a social determinism, but rather to ask careful questions about the dynamic and contingent relations between users and technologies, and between practices of social shaping and technology use.
- Third, research should sidestep the simple polarisation of 'real' and 'virtual' or 'offline' and 'online' so as to pinpoint their intersections and mutual influences. Similarly, it should avoid the moral panics that characterise media coverage and, to some degree, public understanding (Oswell, 1999).
- Fourth, it is vital to recognise that it is part of childhood and adolescence to experiment, take risks, push adult-imposed boundaries, and so forth. Thus it is important that online risks are addressed not by restricting access (for this may produce evasion of adult regulation) but by enhancing critical literacy skills, and by understanding what makes children resilient or able to cope with risk (Coleman & Hagell, 2007; Frydenberg, 2003)
- Fifth, the solid tradition of research on parental strategies for regulating their children's television use is being extended to the internet, but here the task is more complex (Valkenburg, 2004). Given the notable gap in parental and child accounts of both risk and regulation (Staksrud, 2005), and given the growing challenge posed by not only fixed but mobile and convergent online technologies, it is crucial to seek the means of improving the effectiveness of parental regulation strategies.

¹⁷ Project website and access to EVS data from <http://www.europeanvalues.nl/>.

Within this broad framework, this report has examined in detail the body of European evidence on children and young people's online opportunities and risks. To do so, and to respect the above theoretical principles, a general model was proposed at the outset in order to clarify the hypothesised relationships among key variables (see chapter 1).

As shown in Figure 2.8, at the heart of the model are the intersecting variables: access, usage, attitudes and skills and, central to our focus, risks and opportunities. This nexus of factors is social in character, shaped by a range of contextual factors (such as use of the Internet at home or school) and mediated by the actions and beliefs of parents, teachers and peers.

Figure 2.8: The general model of the research field



Each of these variables may, in turn, be influenced by or dependent on the child's age, gender and socioeconomic background. Based on both academic literature and policy assumptions, a series of research questions and hypotheses were specified at the outset of this report, in order to examine the findings in a systematic way.

Identifying cross-national commonalities

Focusing here on the individual (rather than the country) level of analysis, this report has examined the extent to which this general model holds across Europe, and the results are here summarised and discussed.

The same analysis has also revealed ways in which the findings vary by country. These are summarised in section 2.5.2, in order to propose country classifications according to key variables and these, in turn, are explained at the country level of analysis in chapter 3.

Reiterating once more that although a considerable body of empirical findings has been identified across Europe, this remains patchy, inconsistent and often not strictly comparable, a series of cross-national commonalities have been cautiously identified. These are summarised and discussed below in terms of the numbered research questions and hypotheses that structure this overall report.

We begin with the central portion of Figure 2.8 (shaded dark), examining the relationships between access and use, attitudes and skills, opportunities and risks.

Overall conclusions regarding children's online access and use

Research question R2.1.1: What/how much access to the internet and online technologies do children have?

- Most reliable figures on internet access in Europe concern the adult rather than child population. These reveal, nonetheless, both a general rise in access across all countries and persistent differences in access (cf. the digital divide) across and within countries (for more details see chapter 3).
- However, access under-determines use (Livingstone, 2002), for a child may have access to the internet without using it, both at home and at school. Hence this report has focused on usage figures for children.

Research question R2.1.2: How much use of the internet and online technologies do children make?

- In terms of frequency of use, the evidence is consistent with Rogers' diffusion curve for technological innovations (Rogers, 1995), namely that as access diffuses across countries, usage follows, with first the early adopters taking up the internet, then the mass market and finally the laggards catching up. Countries vary in the stage of this process reached, marking a continuing digital divide across Europe.
- As research on the domestic appropriation of technologies shows (Silverstone et al., 1992; Haddon, 2004), underlying this process is a considerable effort by parents and children. They must make sense of the technology and its various hardware and software components, they must rearrange their homes and daily timetables to fit internet use into busy lives, and they must work out in symbolic terms the benefits or risks for their lives and their social relationships within and beyond the home. In these ways, they render the internet meaningful and therefore 'useful' in social and cultural terms.
- Across Europe, the differences in amount of use remain more striking than the similarities (inviting a classification of countries by children's use of the internet - see 2.5.2). However, in all countries, certain common features are also evident, reflecting this general process of diffusion and appropriation.
- Most notably, the evidence across Europe shows that the more parents use the internet, the more children do so also. Given the widespread assumption that children are the digital natives and parents the digital immigrants, this is a counter-intuitive and important finding.
- To be specific, across Europe, children (under 18 years old) are, according to the Eurobarometer survey of 2005/6 (EC, 2006), marginally more likely (50%) than adults in general (47%) to use the internet. But they are less likely to use the internet than are parents/carers in particular (65%).
- The findings qualify this general conclusion in two ways, permitting a more refined picture than has previously been possible. First, across most countries, the child's age matters. For younger children (up to 11 years old), parents are the greater users and, presumably, more skilled therefore, than children – challenging simple assumptions regarding 'children' as 'digital natives'.
- For teenagers, however, the picture reverses: teenagers across Europe are more likely (87% of 12-17 year olds) to use the internet than are parents of teenagers (65%). Teenagers are, indeed, the digital natives, therefore. The role of parental responsibility for children's internet safety should be approached differently for children and for teenagers, for this reason.
- Second, there are some significant cross-national differences here, with children overall more likely to use the internet than their parents in certain countries (Poland and Portugal; see 2.5.2).
- In these countries, therefore, policy expectations that parents can, in practice, take responsibility for their children's internet safety, should be especially carefully qualified.

Hypothesis H2.1.1: Children whose parents use the internet are more likely to use the internet themselves.

- The above discussion applies on a generational level: child users in Europe vs. parent users in Europe.
- Further analysis of the Eurobarometer findings showed that a child is more likely to use the internet if their own parent(s) are users (58% of their children use the internet) compared with if their parents are not users (34% of children use the internet). This holds across all countries, though the comparison between parent users and parent non-users necessarily cannot be made in those countries where nearly all parents are users (Estonia, Finland, Sweden). In some countries, the difference between children, whose parents are online, and those, whose parents are not, is particularly high; for example in Italy the difference between these groups is more than 30 per cent.

- Across Europe, the findings also show that if parents use the internet at home, the influence on their children is even stronger: 61% of children whose parents use the internet at home also use the internet; only 9% of children whose parents do not use the internet at home do themselves use it.
- Since parents are more likely to use the internet at home than adults in general, and that parents of teenagers are more likely to use the internet at home than parents of younger children, it may be concluded both that parents use the internet in order to encourage their children and that parents use the internet because they have been encouraged to do so by their children.
- Whichever the direction of causality, it appears that parental use has a positive association with children's use. Assuming the causal direction is, at least partly, from parent to child, to encourage internet use among children it would be worth encouraging parents also to use the internet themselves.

Research question R.2.1.4: Where do children in Europe use the internet?

- Across Europe, children are equally likely to use the internet at home (34%) and at school (33%), with other places of much lesser importance (friend's house – 16%, someone else's house – 5%, library – 4%, internet café – 3%, or elsewhere – 2%).
- There is a positive correlation between use at home and school – the more children use the internet at home in a country, the more they are likely to use it also at school. The reverse is also the case, meaning that children in some countries are doubly disadvantaged.
- Further analysis of the evidence regarding home and school use provides the basis for a country classification based on location of use – see 2.5.2.
- Also cross-nationally, there is some evidence that in countries with low public or domestic access, children are relatively more likely to go to internet cafés (e.g. Bulgaria, Poland). As these tend to be unsupervised, from a child protection point of view, this may raise concerns.

<i>Overall conclusions regarding children's online opportunities and risks</i>
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Research question R2.2.1: What are the main opportunities experienced by children online?

- Across Europe, a fair body of research evidence suggests that adults and children agree that children use the internet as an educational resource, for entertainment, games and fun, for searching for global information and for social networking, sharing experiences with distant others. Other opportunities, such as user-generated content creation or concrete forms of civic participation, are less common.
- There is little cross-nationally comparable evidence regarding the incidence and take-up of these various opportunities. Thus it seems that, once they gain access (and skills), children in all countries prioritise online communication, various forms of entertainment and play, and information provision; meanwhile for parents, the benefits of educational resources come higher on their agenda.
- If online opportunities are to be increased across Europe, much depends on the child's role (their motivation and resources) and the online provision available to them (and, thus, the providers' motives or social goals). Thus conceptually, EU Kids Online offers a framework by which to classify online opportunities in Figure 2.5, according to providers' motives (education and learning, participation and civic engagement, creativity, identity and social connection) and the child's role (as recipient, as participant, as actor). The resulting 12 cells are unevenly studied at present, with some key gaps in terms of creativity, civic opportunities, online sources of help and advice, and so forth.
- It is further proposed that each child climbs a 'ladder of online opportunities', beginning with information-seeking, progressing through games and communication, taking on more interactive forms of communication and culminating in creative and civic activities. Though many variants are possible, one implication challenges the popular assumption that communication and games playing are 'time-wasting' for, instead, they may provide a motivational step on the way to 'approved' activities. This proposal merits further research.

Research question R2.2.2: What are the main risks experienced by children online?

- In a parallel framework for online risks, EU Kids Online classifies these according to the three modes of communication afforded by the internet: one-to-many (child as recipient of mass distributed content); adult-to child (child as participant in an interactive situation predominantly driven by adults); and peer-to-peer (child as actor in an interaction in which s/he may be initiator or perpetrator); a second dimension acknowledges four main forms of risk to children's development and well-being - commercial, aggressive, sexual and value threats – in terms of provider's motives. It is noted that while the specific risks that fall into each cell may change over time, the categories are more enduring.
- A portrait of online risks across countries can be derived from the available evidence, but it is important to note, first, that not all risks discussed in public and policy have yet been researched; also, evidence of their incidence, distribution and possible consequences on a reliable cross-national basis, is sparse; last, risks are particularly difficult to define in culturally-consensual ways, and they are difficult to research in methodologically-rigorous and ethically-responsible ways.
- Overall, the findings suggest that online risk attracts public concern and policy attention with justification. In most countries, significant minorities and, in some cases, a majority of children, especially teenagers, are encountering a range of aggressive and sexual risks. These include content, contact and conduct risks.
- These findings do provide the basis for a tentative classification of countries according to likelihood of encountering online risks (see 2.5.2).
- Looking across European countries, there are grounds for proposing a rank order of risks in terms of overall incidence, as follows.
 1. Giving out personal information: the most common risk – estimates around half of online teens, with considerable cross-national variation (13% to 91%).
 2. Seeing pornography: second most common risk at around 4 in 10 across Europe, but there is considerable cross-national variation (25% - 80%).
 3. Seeing violent or hateful content: third most common risk at approx one third of teens and a fair degree of consistency across countries.
 4. Being bullied/harassed/stalked – generally around 1 in 5 or 6 teens online, though there this is higher in some countries.
 5. Receiving unwanted sexual comments - only around 1 in 10 teens in one group of countries (Germany, Ireland, Portugal) but closer to 1 in 3 or 4 teens in Iceland, Norway, UK and Sweden, rising 1 in 2 in Poland.
 6. Meeting a online contact offline – the least common but arguably most dangerous risk, there is considerable consistency in the figures across Europe at around 9% (1 in 11) online teens going to such meetings, rising to 1 in 5 in Poland, Sweden and the Czech Republic.
- Several risks are still to be researched in comparative perspective – self harm, race hate, commercial exploitation, and so forth.
- In several countries, some measure of distress or feeling uncomfortable or threatened was reported by 15%-20% of online teens, this suggesting, perhaps, the numbers for whom risk crosses over into a degree of harm.
- Some of the high reports of risk – in Estonia, Poland, the Czech Republic – require urgent awareness-raising. Similarly, the advent of new forms of online activity – e.g. social networking – points to the need for urgent new advice to children and young people. As estimates for now-familiar risks continue to be substantial, these too require continued attention to keep them in children's minds.

Hypothesis H2.2.6: Since most children make the broadest and more flexible use of the Internet at home, they will also encounter more risk from home than school use (i.e. a question of the relation between access, use and risk).

- This hypothesis is particularly important in terms of directing safety awareness initiatives, whether targeted towards parents or teachers, or whether framed in terms of home or school use.

- Findings from the pan-European Eurobarometer survey suggest that, according to their parents, children encounter more online risk through home than school use (though this may be because parents know little of their children's use at school).
- However, among those children who use the internet in an internet café or at a friend's house, these are also risky locations, according to parents (especially compared with school use).

Research question R2.2.5: What is the relation between online opportunities and risks?

- UK evidence showed a high positive correlation between number of online opportunities and number of online risks for 12-17 year old internet users. This led the EU Kids Online researchers to seek similar findings in other countries.
- However, little further European research was found that examined the association between online opportunities and risks. We can only suggest that European policy makers face the dilemma that increasing opportunities tends to increase risks, while decreasing risks tends to decrease opportunities.
- Future research must identify ways of increasing online opportunities for children while decreasing risks.

Overall conclusions regarding children's online attitudes and skills

This report has examined four hypotheses regarding children's online skills and attitudes. However, as each examines the relations with age, gender and SES, these are addressed below, where findings for the following hypotheses are presented.

- H2.3.1: As children get older they gain greater online skills, including self-protection skills
- H2.3.2: Children who use the internet longer and for more activities develop more skills
- H2.3.3: There are inequalities in skills and literacies as a consequence of inequalities in SES
- H2.3.4: There are gender differences in the levels of skills (higher for boys)

Also relevant here is one of our main research questions.

Research question R2.2.4: Is there evidence showing the consequences of online risks or evidence showing how children cope with online risks?

- Once exposed to risk, how do children respond? In psychological research, this question is being framed in terms of adolescents' development of 'resilience'. Thus far, however, little is known of children's abilities to cope with, or their resilience towards, online risk. Here more research is needed.
- On a pan-European level, 31% of parents in the Eurobarometer survey say their child has encountered harmful content on the internet, and 66% of parents say their child knows what to do in such situations.
- But, comparing across countries, there is a negative correlation between these indicators: the higher the percentage of parents in a country who claim their child has encountered harmful content, the lower the estimated ability of children in that country to cope with potentially harmful encounters, and vice versa.
- Some caution is needed in interpreting this correlation. It may be that in low risk countries, children have learned to cope; but it may be that in high risk countries, parents are unaware of their need to cope and so overestimate children's abilities. Similarly in high risk countries, children may really be less able to cope or, possibly, these parents are more aware of children's need to cope. Research is needed that follows children from risk exposure through to their coping strategies and to any consequences.
- Qualitative research points to a series of strategies that children are developing to cope with online risks. How these are applied, and whether they are effective, remains unknown, but the manner of reporting suggests that children feel in control and confident in using these strategies. Since this research is mainly qualitative, there is also a need for quantitative research here, to establish the relative uses of different strategies across the population and among specific subpopulations (especially those deemed 'at risk').

- However, as noted above, knowing good strategies may not affect children's actual practice in risky situations, however, so interviews in which children evince good sense should not be treated complacently. This is especially the case since, although there is evidence that children are developing their own strategies to respond to online risk, many studies continue to report that only a small minority tells an adult and so can receive adult guidance.

In the following section, we address the palest grey section of Figure 2.8, to examine in turn the influence of the child's age, gender and socioeconomic background on the above findings for access and use, risks and opportunities, attitudes and skills.

The role of age in influencing children's online activities

Hypothesis 2.1.2: As children get older their access to and use of the Internet and online technologies increases.

- The hypothesis was framed in this manner as it is widely assumed, and shown in some published literature (Livingstone & Helsper, 2007; Livingstone, 2002; Staksrud, 2005) that older children use the internet more. Sometimes, the conclusion is drawn that, as they are also more mature, they are less at risk (see below). However, the available findings permit a more refined account.
- Specifically, findings from the national reports identify a mixed array of age-related factors that influence children's online access and use. These suggest that, for one reason or another, a simple linear increase in internet use as children get older may not apply. Particularly, in several countries, there may be a peak in use in the mid teens.
- Younger children use the internet less, it seems, because their parents are more restrictive and because there is less content provided for them. Older teens (17+) may use the internet less than younger teens because they have more alternatives available to them.
- According to pan-European Eurobarometer data (based on parental reports), children's use increases until 12-13 years and then plateaus.
- Comparisons by countries grouped according to overall amount of internet use suggest that in high use countries, children get online younger than in low use countries (see 2.5.2).
- The safety awareness implications of the finding that younger children who are online are likely to live in high use countries have yet to be pursued – and this may change as younger children begin to go online in low use countries. Similarly, in low use countries, online teens may be less experienced users than their counterparts in high use countries.

Hypothesis H2.2.1: As children get older they are exposed to a greater amount and range of online risks.

- Eleven of the 21 countries had evidence relevant to this hypothesis, and in eight the evidence was supportive, in three it was contradictory.
- On balance, it is concluded that older teenagers do encounter more online risks than do younger teens.
- In France, Germany and The Netherlands, there was evidence that younger teens are more risk taking than over teens, however.
- Further, the phenomenon of young children using the internet is too recent for a strong evidence base, although this raises new and pressing questions which should now be researched.

Hypothesis H2.2.2: As younger children gain online access they are increasingly exposed to online risk.

- Public concern is sometimes expressed regarding younger children, now going online and so encountering risks that they are insufficiently mature to cope with. Although this concern is countered by the greater parental mediation received by younger children, there is too little evidence to conclude on this point.

Hypothesis H2.3.1: As children get older they gain greater online skills, including self-protection skills.

- It is hypothesized that as children get older, they gain greater online skills (or Internet literacy) and so gain more opportunities and also, presumable, gain the skills enabling self-protection from online risks.
- Findings were available in eleven countries. Overall, the evidence supports the hypothesis that skills increase with age.
- Measuring children's online skills, whether through qualitative or quantitative methods, is particularly difficult and so, for the most part, it is unclear if increasing skills results in an increasing ability to cope with or avoid online risk. The research community is actively addressing this methodological challenge now, but no consensus or clear measures have yet been produced.
- Where evidence is available, it does seem that increasing skill may increase self-protection. But one should not be complacent about these growing skills, as there is also some evidence that children 'know' how to act safely online but in practice they take risks nonetheless. In this area as in others, the link from safety knowledge to behaviour change is often uncertain.
- Given these qualifications, it may still be concluded that as children grow older their level of skill increases, and this is likely to include their abilities to protect themselves from online risks.
- The development of skills is part of a more complex picture, however. Frequency of internet use, amount of time spent online and the range of activities all increase with age, as does confidence, all of which impact on young people's skills levels, perceptions of skill and expertise and their adoption of safety strategies.

Hypothesis H2.3.2: Children who use the internet longer and for more activities develop more skills.

- Although it would seem obvious that children who use the internet for longer and for more activities would develop more internet-related skills and literacies, only three countries provided data for this hypothesis. In Austria, Norway and UK, findings showed a positive correlation between frequency of use and online competence and safety. However, with such few data, generalisations are unsafe.

The role of gender in influencing children's online activities

Hypothesis 2.1.3: There are no gender differences in children's access to or amount of use of online technologies.

- The published literature on gender differences is very mixed. Some research suggests that early gender differences for the home computer no longer exist. Other research suggests that gender differences are becoming less a matter of strong inequalities and more a matter of subtle differences in preference or style (Livingstone & Helsper, 2007; Livingstone, 2002; Staksrud, 2005; Bird & Jorgenson, 2003). Hence no directional hypothesis was framed a priori.
- Overall, contradicting the hypothesis, most findings from the national reports point to a fairly consistent pattern of gender differences across Europe. On balance, we can go beyond specific country results to suggest that boys use the internet for more time and in more places, than do girls.
- Yet there are indications that these inequalities are becoming less and more and younger children go online. And in a few countries (Ireland, Netherlands, Portugal and the UK), the Eurobarometer survey finds internet use to be greater among girls than boys.

Hypothesis H2.2.3: There are gender differences in the range/types of uses/opportunities.

- Over half the countries had evidence that there are gender differences in children's online activities, and only a little evidence contradicted the hypothesis.
- It is concluded that, across Europe, while both boys and girls enjoy a range of online opportunities, there is clear evidence of gender differences in online activities and preferences. Girls prefer activities that involve communication, content creation and collaboration. Boys prefer competition, consumption and action.

- As yet, too little is known regarding the relatively new phenomena of social networking, online and multi-user gaming and other web 2.0 activities. There may also be an interaction between age and gender (with gender differences increasing through the teens) but more research evidence is needed here.

Hypothesis H2.2.4: There are gender differences in the range/types of risks.

- Fourteen countries provided research results supporting the hypothesis and there was little evidence to contradict it.
- Overall, it was concluded that boys are more likely to seek out offensive or violent content, to access pornographic content or be sent links to pornographic websites, to meet somebody offline that they have met online and to give out personal information.
- Girls are more likely to be upset by offensive, violent and pornographic material, to chat online with strangers, to receive unwanted sexual comments and to be asked for personal information but to be wary of providing it to strangers.
- Both boys and girls are at risk of online harassment and bullying.

Hypothesis H2.3.3: There are gender differences in the levels of skills (higher for boys).

- In studies where children/young people self-report and self-evaluate their internet skills, boys tend to rate themselves higher than girls.
- There is little evidence based on tests or objective examination of children's skill levels. There is some evidence in some countries that boys' greater online confidence (or self-efficacy) may lead them to take more, not fewer, online risks. It may also enable them to evade adult regulation.

The role of socioeconomic status in influencing children's online activities

Hypothesis H2.1.4: There are inequalities in access as a consequence of inequalities in SES (socioeconomic status e.g. household income, parental education, social class)

- In almost all countries, there is evidence to support this hypothesis, for higher SES households are more likely to provide their children with access to the internet, while lower SES households are less able to do this. Only Iceland and Sweden show little evidence of such inequalities.
- Different studies operationalise different aspects of SES – typically parental income and/or parental education – requiring more research if we are to understand how such inequalities can be reduced in future. Such factors as minority status, social capital, school type and so forth may also play a role, yet to be clarified. This is partly a problem of sample size (minorities measured in a sample survey may be represented by few people) and partly one of measures (indicators of inequality vary across countries).

Hypothesis H2.1.5: There are inequalities in online use as a consequence of inequalities in SES.

- In most countries, there is evidence to support the hypothesis that children from higher SES homes make greater or more frequent use of the internet.
- It is not always clear, in these studies, whether the comparison is for all children, or just for those with internet access. However, in some countries, there are few differences in amount of use, especially if comparing high and low SES children who do have internet access.

Hypothesis H2.2.5: There are inequalities in use/opportunities as a consequence of inequalities in SES.

- The well-established debate over the digital divide justifies the hypothesis of inequalities in children's use of and opportunities gained through the internet as a consequence of differences in SES.
- Though evidence was lacking in several countries, there is general agreement throughout many European countries that SES and the type of use or opportunities are correlated.

- Generally, it appears that children from higher SES backgrounds make more use of the internet (in terms of frequency/amount of use) and use it more for education/information/civic purposes. Lower SES children may use the internet more for downloading music, leisure and entertainment.

Research question R2.2.3: Are there SES differences in children's exposure to risk?

- Across Europe, there was little evidence to be found on this question in most countries – hence it is treated as an open question rather than by framing a hypothesis.
- Insofar as findings are available, the evidence in each country points to a correlation between SES and exposure to risks, with the exception of Iceland. Most of these findings concern content and contact risks. In the main, it seems that lower class children are more exposed to risk online.
- Since lower SES children already experience disproportionate disadvantages and, so, may disproportionately lack the resources to cope with online risk, further research to confirm this conclusion is a priority.
- In terms of safety awareness, these findings suggest the value of targeting interventions at lower class children especially.

Hypothesis H2.3.4: There are inequalities in skills and literacies as a consequence of inequalities in SES.

- Since few studies examine either SES or skills, this hypothesis cannot be examined reliably.

Finally we consider the intermediate grey section of Figure 2.8, addressing the question of mediation.

The mediating role of parents in influencing children's online activities

Unfortunately, there is too little evidence across Europe to comment on the mediating role of either teachers or peers although, for good theoretical reasons, these are included in the overall model (Figure 2.8). In other words, it is very likely that teachers and, especially, peers influence children's online activities, just as they influence many other aspects of children's lives (Irvine & Williams, 2002; Lawson & Comber, 2000). Nonetheless, we have no basis for pursuing these here. What follows, therefore, examines evidence for parental mediation (or domestic regulation). For clarity, we also consider below how parental mediation is in turn influenced by the child's age, gender and socioeconomic status.

Research question R2.4.3: What are the main strategies of parental mediation practised?

- Evidence on this question is available from 17 countries, though there is great variation in the evidence available from the different countries, indicating continuing theoretical and methodological issues for the research agenda.
- Across Europe, it appears that time restriction is the most common strategy for parental mediation of children's online activities. Possibly there are financial reasons for this, but also it is relatively easy for parents to implement in practice.
- Parental supervision – by sitting with children or checking on them 'over their shoulder' – is important in many countries also.
- Parents claim that they also discuss online activities with their children but children are less likely to report that their parents do this – there is often a gap between child and parental reports of mediating strategies (SAFT, 2006; UK Children Go Online)
- Although substantial minorities of parents in several countries appear to use filtering software, its effectiveness remains unclear from the available evidence.
- There is sporadic evidence of some further parental strategies, but these are inconsistently studied across Europe.
- It is generally evident that parents wish for more guidance regarding the management of their children's internet use.

Research question R2.4.3: Are there gender differences in parental mediation?

- This question too has been relatively little examined. Where evidence is available, it appears that girls are subject to more parental mediation than are boys. Since the findings reported above suggest that boys are no less exposed to online risk, this finding suggests that safety guidance could usefully be targeted to parents of boys.

Research question R2.4.4: Are there SES differences in parental mediation?

- In countries where this question has been asked, it appears that there is more parental mediation in higher SES families. Little is known that compares mothers and fathers. It is also possible that this finding reflects a social desirability bias on the part of parents.

Hypotheses H2.4.1: As children grow into teenagers they are subject to reduced parental mediation in their use of the internet.

- The general picture is very clear, holding across Europe: parents impose fewer and less strict rules concerning media, including internet, usage as their children grow into teenagers.
- One interpretation is that this is a fair reflection of teenagers' growing maturity and rights to privacy and independence. On the other hand, there is more evidence regarding online risks encountered by teenagers than younger children – and it may be that parents have simply given up on the attempt to regulate children by the time they become teenagers.

Hypothesis H2.4.2: More parental mediation results in reduced exposure of children to online risks.

- This is a crucial hypothesis – widely assumed by policy makers but rarely examined empirically by researchers.
- Unfortunately, there is a very little evidence to support or contradict this hypothesis because 17 countries out of 21 reported that there is no pertinent evidence available.
- The remaining countries reported conflicting findings. Ireland found evidence to support the hypothesis that more parental mediation results in reduced exposure of children to online risks, while Poland found evidence to contradict. United Kingdom found evidence both to support and contradict. Two countries commented on a general basis; Cyprus` comment supports the hypothesis while Spain's comment contradicts it.
- Here more than anywhere, we can only conclude that more research is needed.

Research question R2.4.6: Is there evidence that particular parental strategies or styles of mediation effectively reduce the risk that their children experience online?

- Again, this is a crucial question where findings are sporadic and inconsistent.
- Some of the research literature, including from EU Kids Online (Livingstone & Helsper, in press), suggests that more restrictive strategies are more effective. But these restrict use generally and so reduce online opportunities as well as risks.
- Ideally, parental strategies of discussion, shared use and increasing media/critical literacy would prove optimal, but there is little or no evidence that this is the case as yet.

2.5.2 Conclusions regarding the classification of countries

The findings of the research as presented in the previous chapters indicate commonalities and differences between the European countries with regard to children's online use. As a last step of this chapter these commonalities and differences are discussed regarding their suitability as indicators for an overall classification of the countries.

Internet use

The likelihood of children and teenagers accessing and using the internet provides a major way of classifying countries, since internet use is related to most of the other indicators. In some countries, the diffusion of the internet has almost reached the entire population, whereas in other countries online services are still “new”.

Since the indicators developed in this chapter reflect children’s and young people’s use of the internet, the Special Eurobarometer “Safer Internet” (EC, 2006) is taken as the empirical basis for this classification. Based on the percentage of children online, three groups were defined indicating “high” (> 65%), “medium” (> 40%) and “low” (< 40%) internet use (see table 2.17, column 1).

Table 2.17: Indicators for country classifications regarding children’s internet use

	1) Children’s internet use	2) Parents’ internet use	3) Use at home or at school	4) Relevance of use at home
Netherlands	High	High	Home	High
Denmark	High	High	Home	High
Estonia	High	High	=	Medium
Norway**	High	High	Home	High
Iceland*	High	High	Home	High
Sweden	High	High	Home	High
Belgium	High	High	Home	High
United Kingdom	High	Medium	School	Medium
Czech Republic	Medium	Medium	School	Medium
Slovenia	Medium	Medium	Home	High
France	Medium	Medium	=	Medium
Austria	Medium	High	=	Medium
Germany	Medium	High	Home	High
Poland	Medium	Low	School	Low
Ireland	Medium	Medium	=	Medium
Portugal	Low	Low	School	Low
Spain	Low	Low	Home	Medium
Italy	Low	Medium	Home	Medium
Cyprus	Low	Low	=	Medium
Bulgaria	Low	Low	School	Low
Greece	Low	Low	School	Low

Source: Eurobarometer 64.4 – Special No. 250: Safer Internet, December 2005; basis: parents/guardians with children less than 18 years. Definitions:

- 1) Basis: % children (0-17 years) who use the internet at any place; high: >64%, medium: >40% and < 58%, low: <39%.
- 2) Basis: % internet users whose parents also use the internet; high: >80%, medium: >65% and <80%, low: < 65%.
- 3) Basis: % children who use the internet at home and at school; ‘home’: use at home is more often (at least 3%) than at school, ‘school’: use at school is more often (at least 3%) than at home, ‘=’: use at home and at school are almost equally distributed.
- 4) Basis: % child internet users who use the internet at home (and elsewhere); high: >80%, medium: >58% and <70%, low: <50%.

The second classification (column 2) is based on whether the parents of children who are online also use the internet themselves. Three groups are distinguished - countries where most children who use the internet have parents who are online themselves, and countries in which almost one half of the parents of young online users do not use the internet; plus countries in a mid-way position. The relevance of this classification concerns parents’ competence to assist or support their children when they use the internet.

The third classification (column 3) is based on the observation that, in some countries, children use the internet most often at home, whereas in others the school is more important for internet access. The fourth classification (column 4) is based on the percentage of children who use the internet at home (and other places) versus the percentage of children who are online at school (and other places) but not at home.

Several observations may be made at this point.

- Country classifications based on columns 1 and 2 are almost but not entirely the same¹⁸: there are some differences, with Austria, Germany, and Italy having more online parents than might be expected (given children's use), and Poland and the UK showing the reverse feature.
- High use among both children and particularly parents is generally associated with a relatively greater reliance on home use, while lower use is also associated with a greater reliance on school use, in general. However there are some exceptions, with the Czech Republic and the UK combining high or medium use with a relatively greater reliance on school use, and Italy and Spain where low use is combined with greater reliance on home use.

Online risks

A further group of classifications has been derived from risk related issues. Based on national studies (as provided in the country reports), a classification of the countries according to the general likelihood was proposed in chapter 2.2 (see table 2.18, 1st column).

This classification can partly be validated by the Eurobarometer survey. The parents' perceptions, whether their child has encountered harmful content (table 2.18, 2nd column) lead to a similar classification¹⁹: the majority of countries for which both data are available belong to the same group. Thus, the two sources confirm that Poland and the Czech Republic are high risk countries, and that France, Germany and Italy are low risk countries. There are also some deviations (e.g. for the UK there is contradictory evidence).

Table 2.18: Indicators for country classifications regarding risks

	1) General likelihood of risk experiences	2) Parents' perceptions of likelihood of harmful experiences	3) Parents' perception of ability to cope with risks
Austria	Medium	Medium	High
Belgium	Medium	Low	High
Bulgaria	Nd	High	Low
Cyprus	Nd	Low	High
Czech Republic	High	High	Medium
Denmark	Medium	Medium	High
Estonia	Fairly high	High	Low
France	Low	Low	High
Germany	Low	Low	High
Greece	Nd	Medium	Low
Iceland*	Nd	Nd	Nd
Ireland	Medium	Low	Medium
Italy	Low	Low	High
Netherlands	High	Medium	High
Norway**	Fairly high	Nd	Nd
Poland	High	High	Medium
Portugal	Nd	Medium	Low
Slovenia	Nd	High	Medium
Spain	Nd	Medium	Low
Sweden	Medium	High	Medium
United Kingdom	Fairly high	Low	High

1) Basis: country reports on national studies concerning children's risk experiences (see above, chapter. 2.2).

2) Basis: Eurobarometer 64.4, parents' answers for whether they think their child has encountered harmful content when using the internet (see table 2.12; basis: parents of children who use the internet). "High": >45%, "Medium": <45% and >30%; "Low": <30%.

3) Basis: Eurobarometer 64.4, parents' answers for whether they think their child is able to cope with situations, which make them feel uncomfortable (see table 2.2.8). "High": >66%, "Medium": <66% and >51%; "Low": <51%.

¹⁸ The Pearson correlation between the two indicators across 19 countries is $r = 0.90$.

¹⁹ The Spearman correlation between the ranking derived from the national reports (column 1, high=1, fairly high=2, medium=3, low=4) and the percentage of parents who say their child has encountered harmful content (basis for column 2) is $\rho = -0.63$.

The third indicator focuses on children’s ability to cope with risks – as perceived by their parents (see table 2.18, 3rd column). There is a negative correlation²⁰ between risk and the ability to cope with it across countries indicating that the higher the percentage of parents who claim their children have encountered harmful content, the lower the estimated ability of children to cope with these potentially harmful encounters.

According to these indicators, Estonia and Bulgaria are the highest risk/lowest coping countries followed by Poland and the Czech Republic – clearly a priority focus for future safety awareness initiatives. On the other side of the spectrum, a group of seven countries (Belgium, Cyprus, France, Germany, Ireland, Italy, and the UK) combine low risk and a high ability to cope.

Some caution is needed in interpreting these findings. It may be that in low risk countries, children have indeed learned to cope; but it may also be that in low risk countries, parents are unaware of the need to cope and so overestimate their children’s abilities. Similarly in high risk countries, children may really be less able to cope or, possibly, in high risk countries parents are more aware of their children’s need to cope.

Parental mediation

The third part of classifications refers to different patterns of parental mediation. Table 2.19 proposes three classifications based on the findings with regard to the parents’ rules about their children’s media use as provided by the Eurobarometer “Safer Internet” survey.

The first classification (see 1st column of table 2.19) has been defined on the basis of the percentage of parents who claim they have set rules about their child’s use of any media. This classification reflects differences between the countries regarding parents’ tendency to regulate their children’s media behaviour. The second classification indicates the percentage of parents who have set particular rules for the internet and thus reflects the extent to which the internet is regarded as a medium, which needs regulation. To provide a simple indicator regarding the relative importance of TV and internet regulation, the 3rd column shows, for which of the two media parents are more likely to set rules.

Table 2.19: Indicators for country classifications regarding parental mediation

	1) Rules set for any medium (%)	2) Rules set for the Internet (%)	3) Comparison between rules set for TV and the internet
Netherlands	High	High	Internet
Sweden	High	High	Internet
Ireland	High	High	=
France	High	Medium	TV
Spain	High	Medium	TV
Austria	High	Low	TV
Belgium	Medium	Medium	=
Germany	Medium	Medium	=
United Kingdom	Medium	Medium	=
Estonia	Medium	Low	Internet
Czech Republic	Medium	Low	=
Italy	Medium	Low	TV
Poland	Medium	Low	TV
Denmark	Low	Low	Internet
Cyprus	Low	Low	=
Greece	Low	Low	=
Portugal	Low	Low	TV
Slovenia	Low	Low	TV
Bulgaria	Nd	Nd	Nd
Iceland*	Nd	Nd	Nd
Norway**	Nd	Nd	Nd

²⁰ The Spearman correlation across 19 countries is $r = -0.52$.

- 1) Basis: Eurobarometer 64.4, parents' answers on whether they have set rules about their child's use of any medium (TV, mobile phone, games console, internet, computer; see table 2.15; basis: parents of children who use the internet). "High": >70%, "Medium": <70% and >60%; "Low": <60%.
- 2) Basis: Eurobarometer 64.4, parents' answers on whether they have set rules about their child's internet use; see table 2.15; basis: parents of children who use the internet. "High": >50%, "Medium": <50% and >40%; "Low": <40%.
- 3) Basis: Eurobarometer 64.4, comparison of parents' answers on whether they have set rules for TV and for the internet (in per cent) think their child is able to cope with situations, which make them feel uncomfortable (see table 2.15). "TV": percentage for TV at least 5% higher than for the internet; "Internet": percentage of Internet at least 5% higher than for TV; = difference between TV and the internet smaller than 5%.

These classifications lead to the following observations:

- Although there is a slight trend that the likelihood of parental rules is higher in Northern and Western countries, Denmark with a low percentage of parents who have set rules, and Spain with a high percentage for parental regulation are significant exceptions.
- Being one of the parts of the first indicator, it is plausible that the second indicator leads to a very similar classification.²¹ However it is interesting to note that some countries deviate from this pattern: In France, Spain, and particularly in Austria the likelihood of internet regulation is lower than might be inferred from the strong tendency to regulate the use of other media.
- The third classification, which indicates whether parents think, the internet needs more regulation than TV (or the reverse) is quite independent of the general tendency to set rules. Some of the rule-oriented countries put more emphasis on TV (Austria, France and Spain), some of them (the Netherlands, Sweden) are more likely to regulate the internet. It is obvious that the relevance of internet regulation is highest in high use countries and lowest in low use countries.²²

An overall classification of countries

Based on the above three kinds of classifications an overall classification shall be developed. Given the correlations between the different indicators, which have been mentioned so far, it seems advisable to take the general likelihood of children's online use as the first dimension (see table 2.20). If one takes the classification of risks as derived from the national reports as the second dimension almost all cells of the cross table have at least one country; the only exception is that there is no country with high internet use and low risks.

Table 2.20: Overall country classification on the basis of online use and risk perception

Online risk	Children's internet use		
	Low	Medium	High
Low	Cyprus Italy	France Germany	
Medium	Greece Portugal Spain	Austria Ireland	Belgium Denmark Sweden
High	Bulgaria	Czech R. Poland Slovenia	Estonia Netherlands Norway UK

²¹ The Pearson correlation between the two underlying indicators across 18 countries is $r=.75$.

²² The Pearson correlation between the difference of rules for TV and rules for Internet on the one hand and the percentage of internet users is $r=-.63$ for children's online use and $r=-.74$ for the parents' online use. As said earlier it has to be emphasized that these figures are based on parents whose children use the internet, so there is no direct influence of the simple fact that children are more likely to be online on the parents' tendency to set rules. Rather it can be concluded, that parents in high use countries are more aware of online risks and thus set more rules.

The above table suggests that:

- High use of the internet is rarely if ever associated with low risk.
- Low use of the internet may be associated with high risk.
- High use, high risk countries are, for the most part, wealthy Northern European countries.
- Medium use, high risk situations are characteristic of new entrants to the EC.
- Southern European countries tend to be lower in risk, though there are differences among them.

The proposed classifications of countries reflect different conditions for children and teenagers with regard to online risks and opportunities. In order to explain and to better understand these differences, the following chapter will now turn to the country level of analysis and collect information on relevant contextual factors.

3. Explaining differences and commonalities between countries

Chapter 2 of this report has described the results of the collection and comparative analysis of existing research on children's and teenagers' use of the internet and online-related opportunities and risks in Europe. Following the general model of the research field (see figure 1.1, chapter 1), the following part of the report sets out to define and collect relevant contextual factors or background variables, which help to explain the similarities and differences between countries outlined in chapter 2.5.2. As a result of theoretical considerations we have identified six areas, which build the relevant contextual framework for children's and teenagers' online behaviour:

- **Media Environment:** This area includes the aspects of internet and broadband diffusion, internet safety tools, and media content for children.
- **Internet regulation and promotion:** this section will the extent to which the governments of the European countries try to regulate the internet or ICTs in general; a particular focus will be put on the role of the government and the regulator(s) on the one hand and the influence of NGOs on the other hand.
- **Public discourses:** It is assumed that perceived risks and opportunities will partly depend on the public discourse. This will be examined with respect to media coverage of children and internet, the role of NGOs and related stakeholders in shaping public discourses, and specific key events, which might frame the public discourse in some countries.
- **Values and attitudes:** The hypothesis here is that cultural values and attitudes will shape parents' as well as the whole society's perspective on the opportunities and risks of online media.
- **Educational system:** This area includes aspects like the general literacy of the population, the education of the parents' generation, the kind of education for today's children, the technical infrastructure of schools, and existing approaches to internet related media education.
- **General background factors:** Finally we will deal with some single aspects, which are relevant for children's and teenagers' lifeworlds, such as the perceived levels of social change; the enthusiasm of the government and/or the public about changes associated with the Information Society and the general situation of free speech and censorship; societal structures as marked by inequalities, urbanisation, work and social class, and migration and cultural homogeneity; the supposed role of the state regarding questions of safer internet; the language situation; and finally the current status of what has been analysed as bedroom culture.

Looking at the fields mentioned here it is obvious that the EU Kids Online network cannot do its own research on each of these aspects. Although there have been strong efforts to encourage comparative research on the European level on many fields, it is still extremely difficult to get a systematic comparative overview on any of these aspects. Thus, given the fact that within the research design of EU Kids Online these contextual factors shall serve as indicators for an exploratory analysis of contextual influences on online opportunities and risks, we followed a highly pragmatic approach including two kinds of sources: a) Whenever available we used internationally comparative statistics or classifications for the respective field; b) in addition we built on national reports from the members of the EU Kids Online network, in which they summarized the national evidence on the respective issue.

The following sub-chapters for each of the areas mentioned above are structured according to the following questions: 1) What kind of information is available? 2) What are the key commonalities and differences to be observed in Europe? 3) Is there evidence, which supports a classification of the European countries? 4) Which hypotheses can be developed with regard to the explanation of differences and commonalities in children's and teenagers' online experiences, which have been elaborated in chapter 2?

3.1 Media Environment

3.1.1 Internet and broadband diffusion²³

3.1.1.1 Sources of information

EUROSTAT provides comparative data on internet and broadband diffusion²⁴. The Digital Access index is better in combining a variety of measures, but it is severely outdated, as it was last published in 2005/06 (ITU, 2006). For a more complex index the Network Readiness Index (NRI) from the Global Information Technology report from the World Economic Forum²⁵ (Network Readiness Index (NRI), 2008) is helpful. However, in general the number of internet users is fairly well correlated with the results of the index.

3.1.1.2 Commonalities and differences between the countries

Internet diffusion varies across Europe ranging from 91% of population using the internet in Iceland to 34% in Bulgaria (see table 3.1). In general, EU Kids Online members can be divided in three groups – those with high internet diffusion, middle internet diffusion and low internet diffusion. High internet diffusion is most common among Nordic countries and also Benelux countries and UK. The internet is used less among Southern European countries and the former Eastern block – Greece and Bulgaria having the lowest proportion of households connected to the internet and also the highest cost of internet access. According to the cost of broadband use, there are two abnormalities in an otherwise fairly linear relation: Italy has very low prices for internet broadband connections, but also low usage, whereas Estonia has one of the highest costs of internet usage among EU Kids partners, but at the same time, usage is very high.

Table 3.1: Indicators for internet and broadband diffusion

	1) % of Internet users EUROSTAT 2007	Ranking among EU Kids online countries according to column 1)	Position among EUKIDS project according to column 1)	2) % of households connected to Internet EUROSTAT 2007	3) % of households connected to broadband Internet EUROSTAT 2007	4) Position in NRI 07/08	5) Lowest cost of broadband as % of monthly income (2006)
Austria	69	9	Middle	60	46	15	0,11
Belgium	69	8	Middle	60	56	25	0,04
Bulgaria	34	21	Low	19	15	68	1,07
Cyprus	41	19	Low	39	20	41	0,35
Czech Rep.	52	15	Low	35	28	36	0,16
Denmark	85	4	High	78	70	1	0,08
Estonia	66	11	Middle	53	48	20	0,52
France	66	10	Middle	49	43	21	0,01
Germany	75	7	High	71	50	16	0,02
Greece	36	20	Middle	25	7	56	0,65
Iceland	91	1	High	84	76	8	0,03
Ireland	61	12	Middle	57	31	23	0,09
Italy	41	18	Low	43	25	42	0,01
Netherlands	86	3	High	83	74	7	0
Norway	87	2	High	78	67	10	0,04
Poland	49	16	Low	41	30	62	0,21
Portugal	42	17	Low	40	30	28	0,07
Slovenia	57	13	Middle	58	44	30	0,1
Spain	55	14	Low	45	39	21	0,23
Sweden	82	5	High	79	67	3	0,01
UK	75	6	High	67	57	12	0,02

²³ Author: Pille Prүүлmann-Vengerfeldt.

²⁴ Find EUROSTAT statistics at: <http://epp.eurostat.ec.europa.eu/>.

²⁵ <http://www.insead.edu/v1/gittr/wef/main/home.cfm>.

3.1.1.3 Indicators for classifications of the European countries

The statistics shown above provide a meaningful and easily measurable and comparable basis for country classifications. For the percentage of internet users (2007) the respective classification of the EU Kids Online countries is shown in Table 3.1.

3.1.1.4 Hypotheses regarding the influence of this contextual factor on Safer Internet issues

It is highly plausible to assume that the general diffusion of the internet in the European countries explains the substantial differences in the percentage of children being online, which have been described in chapter 2.1. Actually, the percentage of (adult) internet users as provided by EUROSTAT for 2007 is very highly correlated ($r=.89$) with the percentage of children who are online, which has been based on the Special Eurobarometer 250 from December 2005. The above classification of the countries involved in the EU Kids Online network is highly similar to the classification based on children's internet use; 13 out of 19 countries fall in the same group, the remaining six countries fall into the neighbouring group.

Thus, the general diffusion of the internet is a strong factor influencing children's use of the internet. With respect to this factor, differences between the European countries are still massive. As a consequence, for children in countries in which the internet diffusion has reached an advanced stage, online services are a normal part of their media environment and everyday life, whereas for children in other countries it is something that needs a specific effort and makes a difference to other children.

One would assume that the more common the internet is in a country, the more awareness there is of internet safety issues. One would also assume that the cheaper the cost of the broadband connection, the more common is internet use, especially among households with more deprived children such as those living in a single parent household.

3.1.2 Internet safety tools²⁶

The most important question to be answered in this section is the extent to which Internet Service Providers (ISP) offer internet safety tools (e.g. filters) or provide warnings/advice.

3.1.2.1 Sources of information

No reliable data are available for comparative purposes. Most of the data available here are based on personal impressions after carrying out some non-exhaustive search about the state of the art regarding internet safety tools in each of the countries. Moreover, almost none of the countries involved seem to possess statistical data on internet safety tools.

3.1.2.2 Commonalities and differences between the countries

On the basis of the national reports, the main findings can be summarised as follows:

In the majority of countries studied only the major ISPs provide (or at least advertise that they provide) safety packages that include a wide range of services such as antivirus and anti-spyware protection, defence against phishing attacks with URL filtering and anti-spam functions, detection of Wi-Fi intrusion, improved personal firewall preventing intrusions by hackers and blocking networks viruses targeting loopholes in the network, among other things. Most of these services work by performing regular scans on computers, warning about security weaknesses in the operating system/browser, controlling the local network, and by providing spam filtering. One disadvantage of these packages is that they are not free and therefore users interested in these services must pay for them.

Of all the countries studied, only in Bulgaria was filtering software not popular, probably because these services are not widely advertised in this country while ISPs do not provide many warnings or advice about them. Therefore, there is an evident lack of awareness in the mainstream population about using these filters. Finally, the acquisition of these packages or even of (legal) antivirus software is hindered by their high costs.

Apart from offering the typical "safety " packages, many ISPs also offer advanced parental control functions that enable users to manage children's use of the web, blocking unsuitable sites and content. Many of these packages also include the possibility of creating different settings for different family members. Some ISPs even advertise that parents can disable the following: gambling, hate speech sites, sites about drugs, adult

²⁶ Authors: Verónica Donoso (Belgium), Anna Van Cauwenberge (Belgium)

sex sites, weapons or web-mail. In some countries such as in the case of France, the installation of the parental control tool is the default option.

Only some ISPs throughout Europe provide additional information about children and the internet and on how to protect children against online risks – although never on their home page (it requires some searching to find this information). Indeed, most of the information provided by the ISPs relates to their own products, whereas a very limited number provide some detailed information about children's safety on the internet and parental regulation – information that goes beyond the company's products.

In some countries such as in Belgium, Ireland, Iceland and Slovenia internet service providers (mainly through ISP national associations) participate in projects to safeguard online safety for minors. In Belgium, for example, the Internet Service Providers Association (ISPA) is involved in several projects such as: StopChildPorno (an informative site that is the national and civil hotline to report child abusive images found on the internet), Delete Cyberhate (a website that serves as a national hotline for reporting illegal hate speech on the internet), Safer Internet Belgium (a project targeted to raise awareness about the risks of internet for children, parents and teachers) and Spamsquad (a site where internet safety tools are offered and where also warnings/advice are provided).

In other countries such as in Ireland, the Internet Service Providers Association (ISPAI) operates the www.hotline.ie service. This hotline combats illegal child pornography on the Internet and provides a secure and confidential environment where children as well as adults may anonymously report pornographic content encountered on the Internet. Whilst the primary focus of the Hotline remains Child Pornography, other forms of illegal material do exist on the Internet and may be reported using this service. Also in Iceland and in Slovenia most ISPs are very active in internet safety issues, besides offering filters and safety tools they also cooperate extensively with national internet awareness node Safe-si (Insafe). They also collaborate in projects to raise public awareness of online risks. Most Icelandic ISPs cooperate with the Icelandic node of the EC Safer Internet Action Plan, SAFT (www.saft.is) helping to produce awareness material and funding media campaigns among other initiatives. In Denmark the ISPs cooperate through the Danish IT Industry Association also regarding promoting safety for children online and on various digital platforms such as mobile phones. They consider all kinds of risks such as pornography and commercial exploitation. The ISP members in the EU Kids Online advisory panel claim to be more restrictive in their own administration of children's access to services and content than the legally decided restrictions.

In some European countries industry also plays a key role in raising awareness. As a matter of fact, in countries such as Greece, Italy, Ireland, Belgium, Estonia, Slovenia and the UK, companies such as Microsoft, Norton Utilities, Yahoo, Vodaphone and Bebo offer some guidance and/or products regarding how to improve safety and security online. In particular, in Italy, Belgium, Estonia and UK Microsoft local websites offer safety advices for parents and/or educators signalling its own filters and teaching them how to apply them. In the UK, Microsoft provides safety awareness training materials to every secondary school in the country while in Estonia, Microsoft, in cooperation with local organisations (the Family Centre), has promoted projects and research to identify risks related to children, to help distribute information about safety on the Internet, etc. Other examples of industry support to online safety are found in Ireland, where the largest ISP, Eircom, has recently introduced an e-Security package in conjunction with Norton Utilities, providing anti-virus and firewall protection, identity theft support, email anti-virus and spam blocker, anti-spyware protection and anti-phishing protection. Finally, Yahoo's new online safety information and Bebo's recently launched safety site in the UK also illustrate how the industry can support online safety awareness among the population.

Finally, it seems that only in a few countries, the government (through entities such as the Ministry of Communication in Italy, the Belgian Privacy Commission or the Commission for the Protection of Minors in Electronic Media and the State Media Authority in Germany) plays an important role in protecting minors and in raising awareness of online risks by means of supporting initiatives, passing laws and developing projects that promote minors' safety on line.

3.1.2.3 Indicators for classifications of the European countries

Based on the country reports, one can meaningfully distinguish between three groups of countries when it comes to the influence of ISPs on safeguarding safety online for children. However, although this classification seems useful, the information provided in the national reports may not be enough to provide an accurate classification of the countries involved in our project.

Table 3.2: Country variation in ISPs' activity in safeguarding online safety

ISPs play an active role in safeguarding safety online	ISPs offer the typical paid "safety packages"	ISPs provide (almost) no warning, advice or information on safety issues for children
Belgium	Austria	Bulgaria
Greece	Cyprus	
Estonia	Czech Republic	
Germany	France	
Ireland	Iceland	
Italy	Norway	
Slovenia	Spain	
the UK	Sweden	
Denmark	Portugal	
The Netherlands		

Incomplete information to perform classification for: Poland

The three categories can be described as follows:

1. ISPs play an active role in safeguarding safety online for children by offering the typical "safety packages" but also by participating in local projects to raise public awareness, by collaborating with safety nodes, by producing and distributing online safety awareness-raising material for schools, etc.
2. ISPs offer the typical paid internet "safety packages", i.e. but are not actively involved in safeguarding safety online for children. "Safety packages" typically include a wide range of services such as antivirus and anti-spyware protection, defence against phishing attacks with URL filtering and anti-spam functions, detection of Wi-Fi intrusion, improved personal firewall preventing intrusions by pirates and blocking networks viruses targeting loopholes in the network, among others. Most of these services work by means of performing regular scans on computers, warning about security weaknesses in the operating system/browser, controlling the local network, and by providing spam filtering. One disadvantage of these packages is that they are not free and therefore, users interested in these services must pay for them.
3. ISPs (almost) do not provide warning, advice or information on safety issues for children.

3.1.2.4 Hypotheses regarding the influence of this contextual factor on Safer Internet issues

The presence of information and guidelines on online safety in ISPs' websites raises public awareness regarding online safety issues.

The presence of information and guidelines on online safety in ISPs' websites has a positive effect on children's behaviours and attitudes regarding on-line safety issues.

The presence of information and guidelines on online safety in ISPs' websites reduces children's exposure to risk.

Due to the lack of comparable data on safety awareness in the different countries these hypotheses cannot be examined directly; comparing the above classification with the differences between the countries in terms of risk perception does not result in a clear pattern. Although it is highly plausible that safety information provided by ISPs can raise awareness and reduce risks, there is no concrete empirical evaluation available so far.

3.1.3 Media content for children²⁷

3.1.3.1 Sources of information

There are no international statistics on this topic and the country reports within this study provided rather diverse kinds of information. Only Germany, Italy and The UK provided some quantitative data. This points to an urgent need to develop efficient procedures that would help to assess the range and quality of median content for children.

3.1.3.2 Commonalities and differences between the countries

In most of the countries studied, the Public Service Broadcaster seems to be the major media content provider for children. However, when narrowing the scope to online content for children, some commercial broadcasters turn out to also be important content providers. The latter usually offer a mix that includes a limited range of national formats and a broad range of international formats. Within these international formats, some popular TV channels that also provide online content include Nickelodeon and Disney.

One has to be careful when making general claims about the quality and variety of on-line media content aimed at children. However, in countries such as Austria, Denmark, Germany and the UK, the media content for children does seem to be rich and broad. To illustrate this, Austria's public service broadcaster offers several online sections for all children's programmes with different thematic priorities: news, action, stars, technology and science, animals and nature, quizzes, shows and television, etc. In Denmark the National Danish Broadcasting company in particular but also the national TV2 channel have a strong focus on children and adolescents and provide a good deal of services and content for all platforms: TV, radio, online, mobile and crossovers. Commercial channels and institutions also provide substantial content. In Germany, several programmes as well as websites for children (kika.de, kindernetz.de, tivi.de) are provided by the public service broadcasters, as is the case in Sweden. As for the UK, the BBC is a strong offline (CBeebies, CBBC) as well as online (BBC Children, BBC Learning, BBC Teens) content provider for children.

3.1.3.3 Indicators for classifications of the European countries

Because there was not enough information about the provision of online content for children in the national reports, we decided to carry out a small "survey" in situ among the participants of the WP3 workshop in Salzburg so as to determine the degree of significant online content provision for children. The results of our survey are shown in the following table (table 3.3 and 3.4):

Table 3.3: Country variation in provision of positive online content for children

Significant positive online content provision for children	
High	The Netherlands, the UK, Denmark
Between high and medium	Austria (because children there can also access German websites); Ireland (because children can have access to English language websites); Belgium (because they can use Dutch websites)
Medium	Italy, Estonia, Norway, France, Belgium, France, Norway, Germany, Iceland, Sweden, plus DK
Low	Spain, Greece, Cyprus, Portugal, Portugal, Poland, Iceland

²⁷ Authors: Verónica Donoso (Belgium), Anna Van Cauwenberge (Belgium), Verónica Donoso (Belgium).

Table 3.4: Country variation in who provides online content for children

Major Online Content Provider for Children	
Public Service Broadcaster	Austria, Ireland, Italy
Commercial media	Bulgaria, Cyprus, Estonia
Public and Commercial	Belgium, Denmark, Germany, The Netherlands, Norway, Portugal, Slovenia, Spain, Sweden, The UK
Underdeveloped	Greece, Iceland
Not mentioned	France

A classification according to the type and amount of significant positive online provision per country seems meaningful. Even though this information is not explicitly available from the country reports, it would still be important to explore not only the types and amount of online content available for children online, but also its quality. From the point of view of 9-19 year old children, quality internet provision comprises, among other things, good quality content addressing their interests and sites should be truly interactive including to provide responses to their inquiries or contributions. Moreover, quality online content should also offer more guidance not only in terms of content creation, but also in terms of safety issues such as improved protection from unwanted content and attention to children’s privacy needs (UK Children Go Online). Following this, we propose the following classification:

1. High significant positive online content provision for children: The amount and the types of online websites that children can access is not only adequate in terms of its content and safety aspects, but it is also abundant.
2. Medium significant positive online content provision for children. This means that even though there are several high quality websites aimed at children, there are still many websites which do not provide appropriate or sufficiently safe content.
3. Low significant positive online content provision for children: most of the available on-line content for children is of poor quality and not safe enough.

Both classifications mentioned in the above tables (3.3 and 3.4) are meaningful regarding the EU Kids Online project. The presence of a strong Public Service Broadcaster that is a (major) content provider for children, offline as well as online, can play an important role in guiding and teaching children how to use the Internet in a safe and constructive way. In contrast to commercial media, Public Service Broadcasters have a particular responsibility to fulfil regarding the provision of quality content for children. As the internet becomes more and more central in the world of children, Public Service Broadcasters have a crucial role to play.

3.1.3.4 Hypotheses regarding the influence of this contextual factor on Safer Internet issues

The provision of positive good online content for children has a positive effect on children’s behaviour and attitudes regarding on-line safety issues.

The provision of good online content for children reduces children’s exposure to risk.

Although these hypotheses are highly plausible, it must surprise that there is almost no empirical evidence – even on the national level – evaluating the effects of dedicated online content, which sets out to support children in using the opportunities and avoiding the risks of the internet. In this respect there is a particular need for additional research.

3.2 Internet regulation and promotion

3.2.1 Legislation and Policing (Regulation)²⁸

3.2.1.1 Sources of information

Comparative information on internet regulation can be drawn from the World Economic Forum (see chapter 3.2.1.3), whereas the information provided in the national reports are difficult to compare.

3.2.1.2 Commonalities and differences between the countries

The European framework, set on the level of the European Union, is an important starting point. The EU has built a regulatory framework for electronic communications based on five Directives.

- The "Framework" Directive (EC, 2002a), which aims to promote competition, consolidate the internet market for electronics communications and serve the interests of consumers and users.
- Directive on the authorisation of electronic communications networks and services (the "Authorisation" Directive) (EC, 2002b).
- Directive on access to electronic communications networks and services (the "Access" Directive) (EC, 2002d).
- Directive on universal service (the "Universal Service" Directive) (EC, 2002c).
- Directive concerning the processing of personal data (the "Directive on Privacy and Electronic Communications") (EC, 2002e).

These directives have been incorporated or are going to be incorporated in the regulatory legislation of each country. So we could assume that every country has or will have a basic common regulatory framework for electronic communications, without prejudicing measures taken at national level. Within this these can pursue general interest objectives, in particular those relating to content regulation and audiovisual and telecommunication policy. We could say that this framework is oriented towards guaranteeing a more competitive free market, but pays little attention to consumer and user interests, and no attention to the specific protection of minors, except through the European Parliament "Recommendation on protection of minor's human dignity in audiovisual and information services" adopted on 20th December 2006.

On the other hand, the European Union passed a new directive about Audio Media Services in 2007 (EC, 2007), which replaces the "Television Without Frontiers" directive (EC, 1989), amended in 1997 (EC, 1997). The latter directives (1989 and 1997) have been incorporated into the regulatory legislation of each country, and the 2007 Act soon be implemented. This legislation assures the adoption of rules to protect the physical, mental and moral development of minors as well as human dignity in all audiovisual media, including audiovisual commercial communications. It has been a very important step because this Directive of 2007 covers all audiovisual media services (analogue and digital television, live streaming, web casting and NVO, and video-on-demand), independently of the technology or distribution platform used (broadcasting television – linear services – and on demand services – non-linear –). But this directive has still not been incorporated into the national legislations.

Following the national reports it seems that there are for the most part few specific "computer crimes", that is crimes which are judicially considered to have as their object or instrument computer data and systems. "Everything that is illegal in the real world is also illegal on the internet (such as child pornography, Nazi content, fraud, etc) and will therefore be prosecuted", is written in the Austrian Report, or "In Ireland, as well as in most jurisdictions, what is illegal off-line is considered illegal on-line" is in the Irish Report, or "in general, if something is forbidden in society it is forbidden on the internet, but overall there are few special laws relating to the Internet" is in the Swedish Report.

However, there is a wide range of crimes in the National Criminal Codes which could be regarded as "computer crimes", as they are committed through the Internet: phishing, credit card frauds, bank robbery, illegal downloading, industrial espionage, child pornography, harassment, bullying, scans, cyber-terrorism, creation and/or distribution of viruses, spam and so on. All such crimes are related to and facilitated by computers. Nevertheless, some countries have specifically referred to "computer crimes" in their legislation over the last years. For instance, in 2007, France introduced the article 227-22-1 in its Criminal Code in

²⁸ Author: Carmelo Garitaonandia, Maialen Garmendia

order to be able to prosecute any “sexual proposal to a minor under 15” using any electronic communication means, and also the article 222-33-3 of the penal code condemns the recording or diffusion of images related to “happy slapping”. In Ireland, a new offence of meeting a child following sexual grooming, on the internet or otherwise, was included in the recently passed Criminal Law (Sexual Offences) (Amendment) Act 2007. In the UK, the 2003 Sexual Offences Act made grooming a child online for sexual purposes (in chat rooms, email, instant messenger etc) illegal, and the grooming laws gained a high profile in the press; other countries in the EC are now considering passing similar regulations.

In 2001, in Budapest, the European Council passed the “Agreement of Cyber-Delinquency” signed by all the participating countries. This agreement classified computer crimes in four different categories, which can also be seen in almost every National Criminal Code:

- Crimes against confidentiality, integrity and the availability of data and computer systems,
- Crimes of falsification and computer fraud,
- Crimes related to contents, such as child pornography,
- Crimes related to copyright.

The number of crimes committed on the internet has increased considerably over the last years and every national police has a brigade, group or department which deals with *online crimes*. Fourteen European countries are part of the European Working Party on Information Technology Crime²⁹, and they work very closely with international organisms like Interpol and Europol. According to INTERPOL data, 50% of crimes committed on the Internet are related to distribution, diffusion and the selling of child pornography, and some European police forces work with the Child Exploitation Tracking System (CETS), a software system developed by Microsoft which permits investigators to easily organise, analyse, share and investigate information from its point of detection right through the investigation phase, and the arrest and management of the offenders. This software is offered free by Microsoft, and the countries which have installed it are Italy, the UK and Spain.

Probably, in every European country the laws which have the biggest influence on the regulation of contents on the internet are contained in the Criminal Code, and some countries have reformed their Criminal Codes and have incorporated the possession of child pornography (pornographic material such as photos, videos, digitalised images, electronic files, etc., in which someone with the age of a minor has been involved) as a crime and included other crimes related to children³⁰. The lower age limit at which pornography is considered “child pornography” and, therefore, a crime, varies from country to country within the European Union. Whilst Holland, Spain and Italy have the age limit as eighteen, some other countries such as Germany and Austria set the limit at fourteen years of age. It is necessary to consider the fact that, very often, when a child pornography crime is committed, some other crimes such as sexual abuse or rape can also be involved.

Table 3.5: Country variation in the age limit at which pornography is considered “child pornography”

Age	14	15	16	18
Countries	Germany, Austria	Denmark, Finland, France	Belgium, United Kingdom	Greece, Holland, Iceland, Italy, Luxembourg, Portugal, Spain, Sweden

Source: Report of the NGO Anesvad about child pornography on the Internet (Anesvad, 2003)

²⁹ Austria, Belgium, Denmark, Finland, France, Germany, Italy, Netherlands, Norway, Portugal, Sweden, Switzerland, Spain, and the United Kingdom.

³⁰ For instance: the reform of the Spanish Criminal Code in 2003 (art. 187 and art. 189. The Organic Act, 25th November 2003), the amendments to the Bulgarian Criminal Code in 2002 were introduced incriminating child pornography as a criminal offence with heavier sanctions than ordinary cases of pornography. Sanctions envisage imprisonment of up to 8 years, fines of up to 5,000 EUR and (in some cases) confiscation of property, and the reform of the new Portuguese Criminal Code and Criminal Code Process in 2007. Regarding child protection new crimes were created as minor pornography, the use of minor prostitution and genital mutilation is now expressly covered. Also, in case of crimes practiced against persons under 16 years old, if the legal guardian of this person does not want to present charges, the person can present charges themselves from the moment they are 16 years old until they are 18 and a half. Regarding sexual crimes against minors, it is established that the crime does not prescribe before the minor is 23 years of age.

People who wish to wet up websites which include child pornographic content, try to get on servers in countries where the legislation dealing with this matter is not as clear as in European countries. In fact, servers in Brazil, some Latin American countries and former members of the USSR are often chosen.

Although half of the crimes committed on the internet are related to child pornography, there are many more crimes in the National Criminal Codes for which computer systems are either the means or the object of crime. For instance: exhibitionism and sexual provocation, prostitution and corruption of minors, threats, libel, fraud, crimes related to the intellectual and industrial copyright, crimes related to the market and consumers, etc. However, it is necessary to highlight that there are certain, very frequent behaviours on the internet that are very difficult to prosecute because they has not been formalised in almost any of the national Criminal Codes. Two very important examples of this are SPAM and port scan (a way of using other people's IP address and PC).

3.2.1.3 Indicators for classifications of the European countries

The World Economic Forum (2007) uses the Executive Opinion Survey³¹ (World Economic Forum, 2007) to evaluate the laws relating to the use of information and communication technologies (e.g. electronic commerce digital signatures consumer protection). The scale used in the survey is 1 = nonexistent to 7 = well developed and enforced. Based on these scores, we can classify EU Kids Online countries in three groups – Laws well developed and enforced, Laws averagely developed and enforced and Laws not that well developed. Table 3.6 gives an overview of these classifications and scores are in the brackets behind the country name.

Table 3.6: Country variation in the laws related to information and communication technologies

Laws well developed and enforced	Laws averagely developed and enforced	Laws not that well developed
Denmark (6.01)	Portugal (4.94)	Cyprus (3.88)
Estonia (5.90)	Ireland (4.91)	Poland (3.69)
Germany (5.76)	Belgium (4.85)	Greece (3.63)
Sweden (5.74)	Slovenia (4.82)	
Austria (5.70)	Spain (4.77)	
Norway (5.63)	Bulgaria (4.27)	
UK (5.54)	Italy (4.27)	
Iceland (5.40)	Czech Republic (4.21)	
Netherlands (5.39)		
France (5.34)		

Source: World Economic Forum 2007

Beyond that, based on the qualitative national reports, we can indicate that there are some countries where in addition to the criminal code specific institutions regulate the internet. These countries and their regulatory mechanisms are summarized in the following table (table 3.7).

Table 3.7: Country variation in the institutional regulation of the internet

Country	Institution of state-control	Institution of self-regulation	Basic Criminal Code
UK	X	X	X
Austria		X	X
Germany	X	X	X
Ireland	X	X	X
Italy	X		X
Others			X

3.2.1.4 Hypotheses regarding the influence of this contextual factor on Safer Internet issues

In most European countries which have inherited a tradition of freedom, there is no special control of internet content. The criminal code is the law which determines if contents or a particular service is against the law. Nevertheless, there are countries like Germany, the UK and Ireland in which the development of the internet has been even faster than the average, and these countries have perceived and taken more seriously the

³¹ <http://www.insead.edu/v1/qitr/wef/main/analysis/showdatatable.cfm?vno=2.18>.

risks related to the internet and have created their own institutions of control. The case of Italy is probably different, because while the development of the Internet in this country has not exceeded the average, Italy has a tradition of controlling TV contents in order to protect children, so it has applied the same system of control to the internet content.

On the other hand, Anglo-Saxon, Northern and Central European countries have a greater tradition of self regulation than Latin and Southern European countries, in which legislation plays a more important role than self-regulation. The former countries have created self-regulation institutions to help to control contents aimed at children on the internet. Due to this, over the last years, countries such as Belgium, France, Portugal, Spain and Bulgaria had to modify their Criminal Codes to include crimes related to the internet. When we speak about institutions of State control, we are basically referring to institutions controlling online contents for children, as probably every European country already has an institution with which to guarantee market freedom on the telecommunications market (Office of Communications, Comisión del Mercado de las Telecomunicaciones, Autorité de Regulation des Communications Electroniques et des Postes, etc) and also an agency to protect data.

The classification from the World Economic Forum indicates that while about half of the countries perceive themselves to have relatively adequate regulation on internet issues in general, there are still exceptions like Cyprus, Poland and Greece where more regulatory mechanisms are needed. This seems to correlate with other classifications fairly well, indicating that where there are more internet users, there is also more legislation regulating activities on the internet. However, it must be kept in mind that this is not an absolute scale, but rather perceptions of the adequacy of regulation. For example, although internet content is not very regulated in Estonia, any kind of censorship is generally not well received by the public at large. Thus laws can be regarded as being adequate in terms of public perception even if no actual content regulation and child protection mechanisms are in place.

3.2.2 The role of government and regulator³²

3.2.2.1 Sources of information

The Networked Readiness Index (NRI, 2008) contains the component “Government success in ICT promotion”. Government programmes promoting the use of ICT are compared on a scale (1 = not very successful 7 = highly successful (World Economic Forum, 2007). This does not cover awareness raising programmes and literacy related initiatives.

In addition to that, this comparison also uses expert estimations of the success of their governments in the promotion of ICTs. Even if the scale is very subjective and based on qualitative overviews, it still gives some estimation of the relative prominence of government activities.

3.2.2.2 Commonalities and differences between the countries

Classification is on the scale where:

0 = none – there are no activities or activities are not related to concrete issues

1 = one, a little – there is one activity or a small-scale set of activities

2 = several, large scale – there are several initiatives or one complex measure addressing several aspects of an issue.

The classification below is subjective based on reading of the materials provided by the EU Kids Online partners. The scale and impact of the initiatives are difficult to estimate based on the short descriptions available and thus these were also subsequently reviewed by each partner. However, the estimations match relatively well with the NRI index. The differences may also arise from the fact that in many cases the promotion of internet use has been more active in the past rather than currently.

³² Author: Pille Prүүлmann-Vengerfeldt.

Table 3.8: Country variation in the ICT promotion and awareness raising

	<i>NRI result on scale of 1-7</i>	<i>Use of the Internet?</i>	<i>Raise awareness of potential social impacts and risks?</i>	<i>Promote media literacy?</i>
Austria	4,91	1	2	2
Belgium	4,26	2	2	2
Bulgaria	3,61	1	1	0
Cyprus	4,06	2	0	0
Czech Republic	3,58	NA		
Denmark	5,36	1	1	1
Estonia	5,57	2	1	1
France	4,86	2	0	0
Germany	4,64	2	1	1
Greece	3,65	2	2	1
Iceland	5,21	2	2	2
Ireland	4,50	2	2	1
Italy	3,67	1	1	1
Netherlands	4,58	2	2	2
Norway	4,95	2	2	2
Poland	3,04	1	2	0
Portugal	5,14	2	1	0
Slovenia	4,25	2	2	2
Spain	3,80	2	1	1
Sweden	5,41	1	2	2
UK	4,44	2	2	1

In general, one can say that it seems that where the internet is less common, then more efforts are made in promotion of Internet use, while once the internet becomes more common, risk awareness and then literacy initiatives become more visible.

These countries do not differ very much in terms of how much effort is spent on popularising ICTs – with some exceptions (Bulgaria, Italy and Cyprus), where attention is mostly on ICT usage in schools and less on use by private individuals. This seems also to correlate with level of internet usage in general.

In terms of internet safety, France and Bulgaria stand out as there are no significant internet safety initiatives, Estonia and Cyprus seem to have few safety related initiatives. In terms of media literacy initiatives, most of EU Kids countries seem to have just few initiatives. UK, Slovenia, Netherlands, Norway and Austria stand out as being more active in terms of media literacy, while the reports on Germany and France have no explicit mention of media literacy related initiatives.

3.2.2.3 Indicators for classifications of the European countries

In terms of activities related to promoting Internet use, the NRI sub-index provides good and comparable data. Although being based on subjective opinions of experts, it seems to provide good overview. At the same time awareness raising programmes and literacy programmes could be easily rated by partner organisations in terms of the number of initiatives. However, some estimate should be made as regards their reach. At the moment, the table composed above does gives only a limited comparative overview and the styles of those writing the national reports differed, making the summaries less comparable.

3.2.2.4 Hypotheses regarding the influence of this contextual factor on Safer Internet issues

One hypothesis would be that where governments are more active in promoting safety issues, there will be more awareness of them. Here again the lack of empirical data on awareness of safety issues does not allow to evaluate this hypothesis and to learn about efficient ways to promote safer internet.

3.2.3 The influence of NGOs³³

3.2.3.1 Sources of information

There are no comparable data.

3.2.3.2 Commonalities and differences between the countries

When thinking about the influence of NGOs in the area of internet safety it is first worthwhile noting the long tradition of NGOs working on general welfare issues related to children. For organizations which have worked in areas of child protection and welfare, internet safety is to some extent a natural issue to take onboard alongside other issues such as child poverty and violence against children. Out of 14 EU Kids network countries nine report that their NGOs are active in lobbying both government and ISPs to impose more regulation and stricter control on the internet in order to improve children's safety online. These countries are Austria, Cyprus, Denmark, Iceland, Ireland, Italy, Portugal, Spain and the United Kingdom. Where NGOs are reported to be active in terms of lobbying they invariably seem to target both the government and the ISPs. In five of these countries Austria, Iceland, Ireland, Italy and the United Kingdom the NGOs are also reported to have been successful in influencing legislation or regulation. Moreover, in three of these countries - Austria, Iceland and Italy - the national safety awareness node is run by an NGO.

Hence, it is clear that there are different levels of involvement in EU Kids Online countries ranging from very limited to substantial. At one end of the continuum there are countries like in Bulgaria where there are very few examples of NGOs trying to attract the public attention and where the atmosphere in general is not favourable towards regulation. At the other end of the continuum there are countries like the five countries mentioned above where there has been substantial pressure from NGOs towards increased regulation.

3.2.3.3 Indicators for classifications of the European countries

Based on the country reports it seems meaningful to distinguish between three groups of countries when it comes to the influence of NGOs on legislation and regulation.

Table 3.9: Country variation in the influence of NGOs on legislation and regulation

Group one: NGOs active and influential	Group two: NGOs active but not influential	Group three: NGOs not active
Austria	Cyprus	Bulgaria
Denmark	Portugal	Czech Republic
Germany	Spain	Estonia
Iceland		France
Ireland		Greece
Italy		Slovenia
United Kingdom		Sweden

There was incomplete information to perform classification for Belgium, Netherlands, Norway and Poland.

Information about how the national awareness nodes are organised combined with the above might provide some further insight into the different cultures at play in the countries. For example, as already noted, in three of the countries where NGOs have actively lobbied for stricter controls and regulation they are also running the national awareness node. Another model is where NGOs are influential but the government runs the awareness node either under the umbrella of the media regulating authorities (as in Denmark, Norway, Sweden, Ireland and Germany) or even connected to the police (as in the UK). A third model is where the government takes the initiative to create some kind of partnership to run the awareness node (as in Cyprus and Portugal). A fourth model is to place the awareness node in the hands of a private company (as in the Czech Republic and in Greece). Then there are interesting exceptions such as Bulgaria and Estonia where there are no official awareness nodes and Slovenia where the awareness node seems to be an academic initiative.

3.2.3.4 Hypotheses regarding the influence of this contextual factor on Safer Internet issues

There may be more safety awareness in countries where NGOs are active, and more still in ones where they are active and influential.

³³ Author: Kjartan Olafsson

3.3 Public discourses

3.3.1 Media coverage

3.3.1.1 Sources of information

Since there were no data available to compare media coverage of children and the internet, some EU Kids Online national teams³⁴ conducted a 2 month analysis of selected national newspapers. This project asked a range of questions about the overall tone of the articles (positive or negative), the parts of the internet discussed, the source of the article, whose voice was heard, etc, but the main results discussed here relate to risk. The figures reported are at best broadly indicative since there are some methodological challenges in comparing the very different types of press in these different countries. Risk was analysed using the EU Kids Online grid classifying concern about content, contact and conduct, and also commercial interests, aggression, sexuality or values/ideology.

3.3.1.2 Commonalities and differences between the countries

One thing that is clear is how varied the media coverage can be in the different countries, both in the statistics and in studies of press coverage of single incidents, reported below. However, grouping countries remains a problem. One clear observation is that common ways to cluster countries do not account for the particular media coverage. In the tables and observations below, we have countries from north and south Europe that are high or low by some criterion. The same is true for internet penetration e.g. the UK and Denmark are in the same group as Portugal and Greece at one point. Media coverage must be driven by other factors. One possibility, beyond what could be achieved in this simple content analysis, is whether there are common patterns of conceptions of childhood that lie behind and are embedded in particular national media coverage. For example, in Norway there is a notion of a 'natural childhood', where sexuality is less of a risk while at the same time discussions of children's rights is strong. Such underlying conceptions may well help to shape the nature of how media engage in the topic of children and the Internet.

In all the countries in the table below what was common was the newsworthiness of risks compared to opportunities – in all countries over half of all articles reported solely risks, the average of all these countries being 64%, i.e. nearly two-thirds. In contrast, at most only a quarter of the media articles covered solely opportunities³⁵ in any country (i.e. they were all 25% or less) and the average was 18%. Looking in more detail, the most important reason why risks predominate is that the chief source of news in most countries is reporting on crime, mainly related to court cases and police actions.

Within the pattern outlined above there were some outliers:

The countries with a general high level of risk reporting in the media were the Portugal (85% of all articles), the UK (77%) and (at face value³⁶) Denmark (76%)

The countries with low levels of opportunity reports were Greece (5%), Portugal, (8%) and the UK (7%)³⁷

If we then look at the types of risk reported according to the EU Kids Online typology we see the following in table 3.10:

³⁴ See the table below. Bulgaria was also involved but the very low numbers of articles in the sample, reflecting little coverage in that country, mean that its results are not included here

³⁵ The remaining articles, usually a few percent in each country, covered a mixture of the risks we identified plus opportunities, addiction or the dealt with something else besides risks

³⁶ The problem is that Denmark, after Bulgaria, had the least number of articles reporting children and the Internet at all – only 21 articles in the two months. This means that its percentages could be more easily influenced by just a few articles. In addition, the Danish member of EU Kids Online pointed out that at least in some of the articles, when risk was discussed it was not so much as a concern but there was a more reflective discussion of whether it should be a concern, more neutral in tone. This qualitative consideration has to make us cautious in interpreting some of the quantitative data.

³⁷ The reason this is not the same list as high risk list above is the same as footnote 2 – a few other percent are taken up by these other categories.

Table 3.10: Country variation in the types of risks coded in relation to the three risk codes in the national samples of articles³⁸

Risk/ Country	Content	Contact	Conduct	Total	N
Austria	25%	10%	65%	100%	59
Belgium	55%	28%	17%	100%	94
Denmark	40%	44%	16%	100%	25
Estonia	54%	12%	34%	100%	158
Germany	44%	13%	43%	100%	118
Greece	64%	23%	13%	100%	44
Ireland	57%	16%	27%	100%	55
Italy	29%	23%	48%	100%	90
Norway	22%	12%	66%	100%	79
Portugal	59%	23%	18%	100%	71
Slovenia	41%	34%	25%	100%	111
Spain	60%	13%	27%	100%	130
UK	54%	16%	30%	100%	50
Average	47%	21%	32%	100%	

Media analysis carried out by EU Kids Online

3.3.1.3 Indicators for classifications of the European countries

Based on the table 3.10, we can see the following country classification in table 3.11:

Table 3.11: Countries ordered by whether media coverage is high³⁹ or low for different types of risk

Risk reported	Content		Contact		Conduct	
	High	Low	High	Low	High	Low
Level of coverage						
Countries	Greece	Norway	Denmark ⁴⁰	Austria	Norway	Greece
	Spain	Austria	Slovenia	Estonia	Austria	Denmark
	Portugal	Italy		Germany	Italy	Belgium
	Ireland			Spain		

Arguably the most striking point is that – *at face value* - different national media have very varied levels of coverage of the three types of risk. Countries low on content risks like Italy, can be high on conduct risks, and vice versa if we look at Denmark for conduct vs. contact. Or some countries can be high or low for some risks, but be medium for others (in which case, they do not appear in the columns of this table). Hence, media coverage in different countries is sensitising people to different kinds of risk, which may have a bearing on how the degree to which people in different countries think the various risks are prevalent.

Let us look a little deeper at one type of content: that relating to sexuality, which is mainly coverage of pornography on the net. The table is not reproduced here but there was a high interest in sexuality in content in Belgium (42% of all items in the 12 cells of the grid), Greece (39%), Spain (37%), and the UK (36%). In contrast, interest in this issue is shown to be very low in Norway (6%), Estonia (12%) and Denmark (12%). Apart from the influence of particular national histories (e.g. the paedophile cases in Belgium), this probably reflects different national concerns (at least in the media) about what images of sexuality children should be exposed to. This in turn relates to national conceptions of childhood, as illustrated above in relation to Norway.

³⁸ Some articles were multi-coded – e.g. they might include content and contact elements. Therefore N is not the number of articles, it is the total number of codes referring to the combination of content, contact and conduct in all articles in that country. Content percentages are the number of codes referring to content divided by N, the total number of codes. Hence, 25% of all codes referring to these 3 risks in Austria referred to content.

³⁹ Obviously this can be achieved in a number of ways. The criteria of above and below average World produce a longer list of countries. The table grouping by more extreme scores produces few countries that might make hypotheses testing easier.

⁴⁰ Same caveat as in footnote 2 – the Danish figures are based on fewer articles and hence fewer codes.

Finally it is worthwhile looking behind the figures. During the data collection period there were two international stories which may have helped to shape the above figures, and we can take one to of these cases to illustrate this process. A Finnish schoolboy killed his peers and teachers at a school and reported his intentions on the Internet. There were also some subsequent related and copycat attempts in different countries. All countries covered this but they did so to different extents.

The Norwegian, Austrian and Italian figures for 'conduct risks' are high because they had far more coverage of this one story and subsequent events. This not only influences that particular column but all the other ones – since such a high percentage were about conduct, a lower percentage in those countries were concerned the other risks. So on the one hand the figures are 'accurate' in the sense that this was the coverage in the time period. But are they 'normal' in the sense that would they have been different if this event had not occurred? In the case of Norway, part of the reason for reporting was that it happened in a neighbouring country and in recent years there had been public discourses about 'looking to Finnish schools' because the Finns were performing better than the Norwegians in league tables. In addition one of the copycat attempts was in Norway. All this would make the Norwegian coverage more understandable, and we might speculate that coverage would have been less had the original incident occurred in a different country. But this would not explain degree of Austrian and Italian reporting. Moreover Estonia also reported the case extensively, but still did not appear high on the conduct criterion.

If we now look at content risks in the media, Portugal and Greece come out high. But both countries (along with Austria) were amongst those with a high proportion of international news stories in general, (including the second international story of a paedophile's images on children on the Internet - this one story boosted the 'contents' statistics). So the national press may cover risk stories, but that does not necessarily mean 'risk in my country'. So the implications might be different from countries where national stories of risk predominate.

In sum, we have a result, but it is almost a starting point for asking how one could take the interpretation of media analysis further. For example, future research might look to see if media analysis of one particular event can reveal culturally/nationally specific characteristics about media coverage/media attention and public discourses.

3.3.1.4 Hypotheses regarding the influence of this contextual factor on Safer Internet issues

Parents in the countries with a general high level of risk reporting in the media (Portugal, the UK and Denmark – although see footnotes about the latter), will have a higher perception of risks than the average of all these countries.

In countries where press coverage reports considerable concerns about the risks of content online, there will be more parental concern about this issues compared to countries where that particular reporting is low.

The same logic applies to contact and conduct risks.

In countries where the media coverage reports considerable concerns about the risks of content online, children will be more awareness of the issues compared to countries where that particular reporting is low.

The same logic applies to contact and conduct risks.

In addition, and not directly derived from the above observations, it may be assumed that the number, strength and vocalness of agents that address the issue of children and online risks (and opportunities) in a country will have an influence on national media coverage as well as parental concerns.

3.3.2 Role of NGOs and related stakeholders in shaping public discourses⁴¹

In addition (and partly overlapping) to the above section on NGO's influence on ICT regulation and related politics this section examines to what extent NGOs influence the public discourses on online related risks and opportunities.

3.3.2.1 Sources of information

There is material in the EU Kids national reports about the role of NGOs in this respect, with data missing only for the Czech Republic and Poland. There are very few data about the activities of French NGOs in the

⁴¹ Author: Jivka Marinova.

field. However, different national teams have different approaches to the topic and one problem is that in some of the reports the responses strictly follow the questions, in others there is a more narrative response.

3.3.2.2 Commonalities and differences between the countries

In most of the countries participating in the EU Kids project NGOs have been playing an important role in shaping both the policy and the public opinion. For example, the NGOs in Austria, Belgium, Denmark and Estonia were particularly influential. In Germany NGOs have had many joint initiatives with companies providing internet access and with universities. In Iceland, NGOs speaking with one voice were able to shape the state policy. In Ireland the government already recognizes the child protection practitioners as key stakeholders in the regulation of the Internet. In Italy, NGOs have shaped the legislative tools and framework and the public discourse. In the Netherlands, thanks to the NGOs legislation on grooming was adopted. In Norway also, very strong lobbyists promote parental awareness and legislation against grooming.

In Slovenia the Youth council has been influential in shaping the policy of the Office of the Republic of Slovenia for Youth. In Spain the large NGOs working in the field have been instrumental in co-operating with companies providing internet access. In the UK NGOs have been working with media and have been supplying them regularly with results of different studies. There are some countries where NGOs are not very influential. These are Bulgaria, Cyprus, France, Greece, Portugal and Sweden. However in both Bulgaria and Cyprus as well as in Greece there are awareness nodes and hotlines which are trying to compensate and also NGOs working in the field are getting stronger. In Portugal, although NGOs have a weak influence they managed to attract public attention to the risks of the internet for children. Sweden is out of both categories of countries. Although NGOs do not have big influence there is a strong governmental policy and reliance of the public on State regulation for protection.

The main commonalities consist in target groups: in almost all countries NGOs are focusing on raising the awareness of parents and children and to a lesser extent they target the service providers. Another commonality is that very few NGOs deal only with safer internet issues. Most of those working on this topic are NGOs working closely with national child protection agencies and more generally consist of child protection organisations and some extent parents' organisations as well. Mainly NGOs are running the awareness nodes and the help lines.

3.3.2.3 Indicators for classifications of the European countries

Since the accounts provided in the reports are very uneven - some being detailed, some providing an overview -, it is difficult to define criteria for classifying countries. Potential meaningful classifications would be countries with and countries without awareness nodes and helplines/hotlines.

3.3.2.4 Hypotheses regarding the influence of this contextual factor on Safer Internet issues

One hypothesis would be that in countries without awareness nodes, safety awareness would be lower.

3.3.3 Key Events⁴²

3.3.3.1 Sources of information

There are no comparable data.

3.3.3.2 Commonalities and differences between the countries

In some respects this section provided a chance to discuss media coverage more generally, given that there was no place to volunteer comments under the media heading because this is being handled by a separate project. Hence the Czech, Greek and Irish contributions reflected critically on the national media in general, while the Estonian reported details of the different types of media stories covered there.

In terms of events, it is easiest to look at what is common. In many countries there seems to be ongoing media coverage of crime relating to children and the Internet, especially those concerning paedophiles. Some nation teams reported this generally (Austria, Cyprus, Estonia, France, Norway, Portugal and the UK), while others gave several particular examples (Greece and Ireland and Poland). It is clear from the media analysis project that even if the national teams did not mention crimes under 'key events', reporting of such crimes nevertheless takes place in their media (e.g. Spain and Bulgaria). In other words, the type of 'event'

⁴² Author: Leslie Haddon.

that helps to maintain awareness in this area is the ongoing reporting of crimes. Sometimes it is the police operations themselves (e.g. Austria and Poland) that gain visibility for this field.

In some case we have examples where particular high profile 'crimes' or 'anti-social behaviour' have generated public discussions, as in the school killings in Germany and Finland – the latter generating a major set of debates in Estonia (as was also clear from the media analysis). In Slovenia a particular positing of youth misbehaving in school was the key event, while in France and Italy it was (separate) cases of happy-slapping. So in addition to more general reporting of crimes, these specific 'crimes' or 'anti-social behaviour' can also be very salient. The Portuguese case of the disappearance of the McCann girl shows how a crime that in itself did not involve the Internet can nevertheless raise wider debates about children online. A more general discussion of the Internet also emerged in Estonia after the Finnish school massacre, which once again shows the power of crimes to frame and evoke discussions

In a few countries it was events such as conferences (Bulgaria, Greece), projects (Estonia, Norway), campaigns (Iceland) and even the Safer Internet Day itself (Bulgaria, the Netherlands, Spain) that were reported. In the majority of countries, such events clearly did not immediately come to mind as 'key events'.

3.3.3.3 Indicators for classifications of the European countries

The differences across countries lie in relation to the influence of 'positive' events, and certainly there is no clear pattern as regards geography (e.g. North-South/East-West, GDP or the length of time that the Internet has been established). At best you could say that teams from the larger countries (in terms of population) did not mention such positive events.

3.3.3.4 Hypotheses regarding the influence of this contextual factor on Safer Internet issues

From a more general knowledge of the national reports and past comments about Safer Internet Day in particular, it looks as if it is more common for positive initiatives such as conferences, projects, campaigns and Safer Internet Day to be influential in those countries and at that point in time when there was previously little awareness of risks. For example, nowadays Safer Internet Day gets little media coverage in the UK, and the Norwegians have pointed out the same is true there given that the issues have by now been in the public eye for a few years.

3.4 Values and attitudes⁴³

3.4.1 Sources of information

The European Values Survey (EVS) provides a reliable pan-European source of data on adults' values, informed by Inglehart's analysis of value orientations (Inglehart and Baker, 2000). This analysis has been used to characterise countries according to their relative endorsement of individualistic and collectivist values. Thus, people in individualistic cultures engage in open interpersonal emotional expression in order to attain their personal well-being, and have a need for autonomy, independence and individuality. Collectivism has been conceptualized as a worldview in which group membership occupies a central place and the importance of self is only peripheral. Hence people in collectivist cultures restrain their personal emotional expressions and emphasise obedience and unselfishness in relationships.

3.4.2 Commonalities and differences between the countries

The classification of countries is based on adults' answers to eleven values measured in the EVS: the importance of good manners, independence, hard work, responsibility, imagination, tolerance and respect, thrift and saving money, determination and perseverance, religious faith, unselfishness, and obedience.

While the differences are a matter of degree, a classification of countries is possible on this basis.

3.4.3 Indicators for classifications of the European countries

Using the EVS data from 2000, Kirwil (2008) conducted a factor analysis in order to classify the EU Kids Online countries according to their value orientations. Two independent factors were identified, which can be

⁴³ Author: Lucyna Kirwil

interpreted as individualistic and collectivistic orientation. As table 3.12 shows, the countries differ quite substantially with regard to these two dimensions.

Table 3.12: Country variation in value orientation

	Individualistic Values Orientation	Collectivistic Values Orientation
Austria	,669	-1,035
Belgium	,344	,183
Bulgaria	-1,195	,227
Cyprus	Data not available	Data not available
Czech Republic	-,609	-,087
Denmark	1,757	-1,030
Estonia	-1,208	,191
France	-,091	-,040
Germany	,456	-,983
Greece	-,130	-,070
Iceland	,364	-,580
Ireland	,538	,274
Italy	,171	-,140
Netherlands	,987	-,899
Norway	Data not available	Data not available
Poland	-1,429	,470
Portugal	-,840	,339
Slovenia	,629	-,264
Spain	,416	-,672
Sweden	1,403	-1,162
UK	,998	,534

On the basis of the countries' values on these two factors four clusters were identified:

1. High/Moderate Individualism and Moderate Collectivism: UK, Ireland, Belgium
2. Low individualism and Moderate Collectivism: Poland, Bulgaria, Estonia, Portugal, and Czech Republic
3. Moderate Individualism and Low Collectivism: Austria, Germany, Slovenia, Spain, Iceland, Italy, France and Greece
4. High Individualism and Low Collectivism: Denmark, Sweden, Netherlands.

To a great extent, the groups obtained follow the structure proposed by Inglehart and Baker (ibid) for:

Group 1: English speaking countries plus Belgium

Group 2: Ex-communist countries, though Portugal is also included here

Group 3: Catholic Europe

Group 4: Protestant Europe

The group values on the two dimensions are shown in the table below (table 3.13).

Table 3.13: Country clusters according to value orientation

Values Dimension	Cluster 1 UK, Ireland, Belgium	Cluster 2 Bulgaria, Czech Republic, Estonia, Poland, Portugal	Cluster 3 Austria, France, Germany, Greece, Iceland, Italy, Slovenia, Spain	Cluster 4 Denmark, Netherlands, Sweden	Total Sample of 17 European Countries
Individualism	,67	-1,06	,33	1,38	,15
Collectivism	,36	,23	-,52	-1,03	-,29

3.4.4 Hypotheses regarding the influence of this contextual factor on Safer Internet

It seems plausible that the value orientation typical of a country might influence parental strategies in mediating their children's internet use. For example, monitoring the child is one of the most accepted parental techniques in socialisation of a child, and assumes that the child is not directly controlled by the parent. Hence it may be hypothesised that this approach would be preferred by parents with an individualistic values orientation. Parents from collectivistic countries may be expected to mediate the internet in a more direct, interactive way than parents in individualistic countries, who may prefer more efficient but indirect parenting (e.g. abstract rule setting). At the same time, children from collective cultures should maintain harmonious relationships by not contradicting parents when compared to children from individualist cultures. Therefore direct interpersonal parental mediating of the Internet should be more efficient in collectivistic countries than in individualistic countries.

Other hypotheses could be formulated. Given the widely acknowledged importance of cultural values, including as a potential influence on parenting and socialisation practices, these country classifications are surely worth pursuing in further research.

3.5 Educational system⁴⁴

3.5.1 General literacy of the population

3.5.1.1 Sources of information

OECD data is available showing the educational attainment of the adult population.

3.5.1.2 Commonalities and differences between the countries

General literacy rates in most of the 21 European countries are generally high. From northern to southern Europe, from Eastern to Western Europe, all countries show a literacy rate of at least 90%.

Nevertheless, in some countries this optimistic scenario is contested. On one hand, official statistics are not without inaccuracies, thus being disputed by alternative data (e.g. in the UK). On the other hand, functional illiteracy is usually unnoticed in most reports based on official data. Some countries (e.g. Ireland, UK and Belgium) have clearly pointed out this problem.

Although the basic level of literacy and primary education is found in most countries, secondary education, and even more so higher education, is less frequent (HE is 10% to 20%, depending on country). This is why for some education may still be considered more "elitist" than "mass". Nevertheless, most countries reported considerable growth participation in higher education.

⁴⁴ Author: José Alberto Simoes.

Table 3.14: Country variation in educational attainment: adult population (2005)
25-64 year old by highest level of education attained (%)

Country	Pre-primary and primary education	Secondary education		Post-secondary non-tertiary education	Tertiary education
		Lower	Upper		
Austria	-	19	54	9	18
Belgium	15	18	33	2	30
Bulgaria	n.a.	n.a.	n.a.	n.a.	n.a.
Cyprus	n.a.	n.a.	n.a.	n.a.	n.a.
Czech Republic	-	10	77	-	13
Denmark	1	16	50	-	34
Estonia	1	10	49	7	34
France	14	19	42	-	25
Germany	3	14	52	6	25
Greece	29	11	32	7	21
Iceland	3	28	36	3	31
Ireland	17	18	25	11	29
Italy	17	32	37	1	13
Netherlands	8	21	38	3	31
Norway	-	22	41	4	33
Poland	-	15	65	4	17
Portugal	59	15	13	1	21
Slovenia	2	17	60	-	20
Spain	24	27	20	-	28
Sweden	7	10	48	6	30
United Kingdom	-	14	56	-	30

Source: adapted from OECD, *Education at a glance (OECD, 2007)*.

n.a. Not available.

If we look closer at the educational level achieved by the adult population for each country (table 3.14) the above scenario becomes less bright. There are clear differences between countries, just as there are some similarities.

3.5.1.3 Indicators for classifications of the European countries

- Southern Europe countries, like Portugal, Greece and Spain show considerable high rates of only pre-primary and primary education as compared to other countries (59%, 29% and 24%, respectively). The case of Portugal is particularly outstanding, given the fact that according to the OECD data (OECD, 2007) more than half of its adult population never got beyond primary level of education.
- In contrast, in Northern European countries (Norway, Denmark, Iceland and the UK), Eastern European countries (Czech Republic, Poland and Estonia) and central Europe countries (Germany and Slovenia), only a small proportion (less than 3%) of their adult population has never achieved more than primary education.
- Ireland, Italy, Belgium, France and the Netherlands, scattered from north to south of Europe, remain in an in-between position.

Participation in tertiary education generally reaffirms the previous interpretation. The countries that show lower rates of only pre-primary and primary education are the ones that, conversely, show higher rates of participation in tertiary education.

- Apart from Belgium (central Europe) and Estonia (north-eastern Europe), we should note that all the countries that stand out as being above average (25.4%) are located in northern Europe: Denmark, Norway, Iceland, Netherlands, Sweden and UK (all with 30% or more). Ireland remains slightly below that figure (29%).

The above rule comes, however, with some exceptions:

- Despite the fact that Portugal presents the highest rate of people with only the basic level of education, as regards tertiary education the country is not at the bottom of the scale (21%). We might say the same (with a smaller discrepancy) of Spain's tertiary achievement rate (28%).

- Other countries remain exceptions but for the opposite reason: their tertiary rate is far lower than would be expected given their attainment beyond primary education. This applies to the Czech Republic, Italy (both 13%), Poland (17%) and Austria (18%). Secondary education, however, seems to have great importance in those countries.

The above tendencies are noticed but not really explained. Thus we have to take into consideration other social indicators and especially elaborate on contextual factors that might clarify the pattern described. In the following sections we will try to introduce some comments as well as other figures that might help us accomplish this task.

3.5.1.4 Hypotheses regarding the influence of this contextual factor on Safer Internet issues

One hypothesis would be that there would be lower safety awareness in countries where the educational level was lower – especially where a higher proportion experience only primary education. Beyond that a low level of education might result in many parents not being able to help their children when using the internet. For the specific case of Portugal it has been shown in chapter 2.1.1 that Portuguese adults are very unlikely to use the internet and that one fifth of the young internet users in Portugal uses online media while their parents do not (see table 2.1).

3.5.2 The education of the parents' generation

3.5.2.1 Sources of information

OECD data is available showing the educational attainment of the adult population.

3.5.2.2 Commonalities and differences between the countries

All social activities are a product of particular historical circumstances. Education is no exception. Generational differences in educational patterns indicate more general social transformations that have occurred in each country. That is particularly the case of countries that have experienced a considerable expansion of their educational systems in the last decades.

In the section on literacy and general education we examined educational attainment by level of education. This gave us some idea of general levels of education at a given point in time. In this section we would like to consider generational differences in order to compare the parents' generation with their children's present experience⁴⁵. Since we do not really have longitudinal data referring to exactly the same children studied at a particular moment, we have to build our interpretation of change on the basis of age differences examined at a given moment (which might tell us something retrospectively about each generation).

In order to simplify this analysis we will focus on tertiary education. More specifically we will be considering tertiary level of education attainment by age group in each country (table 3.15) as a specific indicator of the educational achievement of diverse generations.

⁴⁵ Our chronological references are somewhat vague on this point. Each country reported their generational changes with specific data sources and criteria, thus making comparisons difficult. In fact, to answer truthfully the above question we would have to consider the following problem: since children from the same generation (i.e. born approximately in the same period of time) might have parents with different ages (and therefore from different generations), how do we establish which generations to compare? To be more exact, how do we measure "parent's generation"? At what date/period of time do we start? This is the first decision to make. Another option would be to consider the education level of the parents of children/ young people surveyed at a given moment in time.

Table 3.15: Country variation in the proportion of the population that has attained tertiary education by age group (2005) (%)

Country	Age groups					Ratio of the variation between the youngest and the oldest age group ⁽¹⁾
	25-34	35-44	45-54	55-64	25-64	
Austria	20	19	17	14	18	0,4
Belgium	41	33	27	14	31	1,9
Bulgaria	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Cyprus	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Czech Republic	14	14	13	11	13	0,3
Denmark	40	35	32	27	34	0,5
Estonia	33	36	35	29	33	0,1
France	39	25	18	16	25	1,4
Germany	22	26	26	23	25	0,0
Greece	25	26	19	12	21	1,1
Iceland	36	34	29	21	31	0,7
Ireland	41	30	22	17	29	1,4
Italy	16	13	11	8	12	1,0
Netherlands	35	30	30	24	30	0,5
Norway	41	35	30	24	33	0,7
Poland	26	16	12	13	17	1,0
Portugal	19	13	10	7	13	1,7
Slovenia	25	21	17	16	20	0,6
Spain	40	30	22	14	30	1,9
Sweden	37	28	28	25	30	0,5
United Kingdom	35	30	28	24	30	0,5

Source: adapted from OECD, *Education at a glance* (OECD, 2007).

n.a. Not available.

⁽¹⁾ Difference between the age group 25-35 and the age group 55-64 divided by 55-64. Not available on the original table.

Except for Germany, in all countries the older one gets the less one is expected to attain a tertiary education. This tendency is important not because it reveals age differences but because it gives you an idea about generational differentiation. Younger people are more likely to proceed to tertiary education than their parents did. In fact, almost all percentages decrease linearly from younger age groups to older ones. This is quite obvious in some countries, since the distance in educational achievement between younger and older age groups is rather accentuated. Even though virtually all countries show the same tendency, there are considerable divergences among them in what concerns the degree to which this is discernible.

3.5.2.3 Indicators for classifications of the European countries

- Spain, Belgium, Portugal, France and Ireland are amongst the countries with the highest variation between age groups. Spain and Belgium have almost twice the proportion of people in the youngest age group in tertiary education compared to the older group. As for the other countries, they all have at least one and half times the proportion of 25-35 years old as compared to 55-64 years old.
- In the case of Greece, Italy and Poland the proportion 25-34 years old is at least once more than the proportion found on the oldest group.
- Estonia, Czech Republic, Austria, the UK, Sweden, Denmark, the Netherlands and Slovenia, they all show smaller differences between the oldest and youngest age groups, in some cases practically unnoticeable (e.g. Estonia).

By taking tertiary education as an indicator of the transformations undergone by the educational system of each country and most of all as an indicator of generational differentiation in learning opportunities, it has become apparent that there are dissimilar speeds and degrees of change. Some countries started their shift toward the generalisation of schooling and of higher education in particular at an earlier stage, while in others this is a relatively recent process.

However, the expansion of the educational system and in particular of higher education between generations is not synonymous with “democratisation”. For instance, the expansion of higher education does not mean that everyone has the same chance of entering the system⁴⁶. So, social inequalities tend to reproduce

⁴⁶ And even if they do, they may get into less prestigious schools or courses.

themselves not only with regard to accessing higher levels of education, but also in the internal differentiation within the system itself. This has been noted by teams in countries such as Greece and Portugal in their country reports.

The Eurostudent report of 2005 (Eurostudent Report, 2005) provides us with some indicators that are helpful for understanding socio-economic differences, even though only a small group of European countries (10) is considered. These indicators examine differences in the socio-economic status of higher education students by their fathers' educational background. "In many countries, students are substantially more likely to be in higher education if their fathers completed higher education. Students from such a background are more than twice as likely to be in higher education in Austria, France, Germany, Portugal and the United Kingdom than are students whose fathers did not complete higher education. In Ireland and Spain this ratio drops to 1.1 and 1.5, respectively."

According to the same report, "inequalities in previous schooling are reflected in the intake of students from less advantaged backgrounds. Countries providing more equitable access to higher education – such as Finland, Ireland and Spain – were also the countries with the most equal between-school performances in PISA⁴⁷ 2000" (Eurostudent Report, 2005).

Consequently, if on the one hand the educational system contributes to engender expectations regarding equal opportunities and social mobility, on the other hand it appears that the system is functioning as a ground for cultural reproduction and the perpetuation of social inequalities⁴⁸. So the question is how accessing the school system, in all its stages, might reflect and reinforce social inequalities.

3.5.2.4 Hypotheses regarding the influence of the contextual factors on Safer Internet issues

One hypothesis is that there would be greater safety awareness in countries where the older/parents' generation had a higher level of education.

The differences with regard to the role of parents' education and social background for the education of their children might explain some of the (unsystematic) observations concerning the role of socio-economic status on children's online opportunities and risks.

3.5.3 The kind of education for today's children

3.5.3.1 Sources of information

The following overview is based on the EU Kids national reports.

3.5.3.2 Commonalities and differences between the countries

One way or another, all countries seem to have experienced changes in their educational systems in the past decades, both quantitatively and qualitatively. Some structural transformations took place, first of all through the longer participation in schooling for bigger parts of the population, but also through changes in curricula and educational methods. More subjects, both diversified and updated, are now offered to students, consequently presenting more choices. Several innovations have been introduced, such as new pedagogies, new learning tools and methods. New technological tools have been adopted (including the internet and other ICTs), which ultimately lead to a sense that the educational system seem to have become more open and dynamic. If these tendencies are to some extent general their adoption, they have occurred at different paces in different countries. For instance, Nordic countries have experienced an earlier expansion of their educational system, while in southern Europe this happened latter. Meanwhile, Eastern countries were relatively "closed" until recently, while most of western countries have "opened up" long before.

From a subjective point of view, the level of expectations seems to be higher now than before. This is explained in part because the investment in education has grown considerably at all levels, but also because the role assigned to education seems to be more important than ever.

One of the most obvious transformations that educational systems have undergone is their growth. Not only has the number of students taking part in compulsory education increased but also this has occurred at all

⁴⁷ Programme for International Student Assessment.

⁴⁸ This is the classical thesis, among other authors, of the French sociologist Pierre Bourdieu (Bourdieu and Jean-Claude, 1964; Bourdieu and Jean-Claude, 1970).

other levels of education⁴⁹. However, there is a more general problem regarding not only the development of all levels of education but their actual configuration and meaning. This has been formulated in discussions of the degree to which may we talk about the “democratisation” of the educational system. Is today’s education less “elitist” than it was before? Taking several of the indicators that have been examined as evidence the answer should be affirmative. But even so this does not mean that, as discussed in the previous section, social differentiation has disappeared completely. This is particularly the case of countries in which socio-economical inequalities are evident, since this is one of the mechanisms that explain access to the system. The discussion of whether a particular educational system is “elitist” or “mass” is more complex than appears at first and may be considered at different levels of education. In the compulsory system, social inequalities regarding access have mainly been discussed in terms of the right to attain a basic education (which has been recognized legally in a minimum years of schooling). On the other hand, as regards tertiary education, access itself is selective, not only because certain schools have a better reputation than others but also because the system itself leaves a number of potential candidates behind. In this case we may say that the system (or at least part of it) is intrinsically discriminatory. Nevertheless, even in countries where the educational system is (or has been for quite some time) apparently more selective than in others social differentiation is becoming somehow mitigated by the lengthening of schooling. This is true in all levels of education but most of all in higher education.

In countries that have experienced in the past decades a shift from what might be called “closed” societies to “open” ones, through more or less profound political, cultural and economical transformations, perceptions of change in the educational system is somehow obvious. This is the case of former communist countries (e.g. Bulgaria, Czech Republic, Estonia), but also in southern European countries deprived of democracy until the mid 70’s, like Portugal and Spain. Besides these structural transformations there are other changes more specific to the educational system which occurred in the last two to three decades that should be mentioned.

In spite of the particular configuration that all these transformations assume in each country there are commonalities worth mentioning. We may sum up these changes in just a few key dimensions⁵⁰:

School programs and resources

- The general transformation of curricula (from primary to tertiary education), including diversification of choices, new subjects, etc.
- Media and ICTs used for learning and as taught subject (both specific and common).
- New pedagogies (new teaching methods, learning objectives, etc.)

Organisation of schools and institutional change

- General modification in students and teachers roles
- Weakening of authority of schools as regards students’ behaviour
- Decrease of school control over students (both as source of discipline and in terms of having a monopoly on knowledge).

Number and type of schools offered

- Specialisation and diversification of schools (more or less at all levels of education)
- Emergence of private schools at all levels of education (thus introducing further differentiation in to the system).

Expectations about the role of education

- More investment in children’s and young people’s education (perceptible, for instance, through parents’ concern and engagement in their children’s education)
- Importance assigned to education as a way to insure one’s future (particularly evident if we compare the children’s generation with their parents)

In spite of these modifications some countries have reported evident continuities, in some cases in a positive way (e.g. Iceland), in other cases in a negative way (e.g. Greece). In the first case this is because some countries start off from a more favourable position, differences between generations are less strong, since some of the goals of greater participation have already been attained. In the second case this is precisely because some of the above innovations are far from being fully accomplished. Pedagogical methods have

⁴⁹ The number of students at each level of education, the minimum (compulsory) years of schooling and extended hours spent in school are some of the indicators that might be considered to illustrate this point.

⁵⁰ Besides differences by country it would be necessary to note specific consequences at each level of education.

not been altered in a revolutionary way. The same may be said about the way objectives are defined and evaluation methods are applied. In some of these countries diversification of curricular choices is not seen as an entirely good thing, since it may lead to fragmentation and dispersion. On the other hand, as noted previously, class based differentiation (grounded on socio-economic differences) has not been completely eradicated (and there is no reason to believe that will be in the near future), so education is far from fulfilling the utopian society, based on knowledge and information, aspired to by some.

In sum, economical, political, cultural and social contexts still matter and may explain a lot. An adequate explanation of the implications from the above observations is beyond our ambition in this overview. It is only possible to point out some dimensions that might be important in order to understand these variations.

3.5.3.3 Indicators for classifications of the European countries

Although there are similarities (and differences) outlined above, it was not possible to construct a classification system that would differentiate among the EU Kids Online countries.

3.5.3.4 Hypotheses regarding the influence of this contextual factor on Safer Internet issues

Without a classification system, it was not possible to develop hypotheses

3.5.4 The technical infrastructure of schools

3.5.4.1 Sources of information

Eurydice, 2005 (based on OECD, PISA 2000 and 2003).

3.5.4.2 Commonalities and differences between the countries

As noted earlier, one of the areas where educational systems have changed considerably in the past years is in terms of investment in the technological infrastructure of schools. Government investment in ICTs has grown considerably in all countries over the last few years. In some cases specific organisations were created to implement the use of the internet and other technologies in schools (e.g. Becta in the UK).

In addition, several attempts have been made to promote computer literacy among children (see next section). In fact, almost all countries mentioned the importance of ICTs, not only as tools for learning but also as an area of concern regarding younger generations.

Even though almost every school is connected to the Internet in most countries, the number of computers per student is not as high as we would have thought, even if we may note a clear variation according to the level of education (generally in higher levels of education there are more computers per student).

According to available data (Eurydice, 2005), there are slightly differences if a child attends the public sector or a private school. Computer facilities in private schools are better in countries where schools are largely funded by tuition fees.

Considerable changes have been noted as regards the computerisation of schools in European Union countries (e.g. Greece, Poland and Portugal) over the past few years. All these countries have achieved a level of at least one computer for every 20 students. In the majority of EU countries, however, the current level is one computer for every ten pupils – or even for every five pupils (Eurydice, 2005)⁵¹.

The number of schools with internet access has also increased significantly (see table 3.16) Data from Pisa survey 2003 (see *ibid*) reveal that on average at least 60% of schools have computers connected to the Internet.

3.5.4.3 Indicators for classifications of the European countries

Looking at table 3.16, we may confirm a previous observation. All countries have experienced clear growth. In some cases rate of change is quite astonishing: Italy has almost twice as much schools connected to the Internet in 2003 than in 2000; Greece has one and half times more schools connected to the Internet; Poland almost one and half times; the Czech Republic doubled its proportion. The only countries that do not show

⁵¹ Based on OECD data from Pisa 2000 and 2003 projects. For more information, go to http://www.oecd.org/pages/0,3417,en_32252351_32236130_1_1_1_1_1,00.html. See Annex Table 3.a with data based on each country report.

significant growth are the ones that already had high proportions of internet connection (e.g. Iceland and Sweden).

Table 3.16: Country variation in the average proportion of computers with internet connection in schools attended by students aged 15, public and private sectors combined

Country	2000	2003	Variation rate*
Austria	69.3	87.3	26.0
Belgium	47.2/-/42.6**	65.2/71.6/79.8**	38.1/-/87.3
Bulgaria	28.5	-	-
Cyprus	Not available	Not available	Not available
Czech Republic	39.8	79.8	100.5
Denmark	65	87.8	35.1
Estonia	40.7	79.3	94.8
France	26.3	-	-
Germany	37.7	70.7	87.5
Greece	26.4	69.2	162.1
Iceland	82.6	95.7	15.9
Ireland	46.6	67.4	44.6
Italy	24.1	70.8	193.8
Netherlands	-	84.8	-
Norway	49.8	81.2	63.1
Poland	35.3	82.7	134.3
Portugal	35.3	60.4	71.1
Slovenia	-	-	-
Spain	40.7	79.3	94.8
Sweden	74.3	91.9	23.7
UK	53.8/-/30.9/37.8***	-	-

Source: adapted from Eurydice, 2005 (based on OECD, PISA 2000 and 2003).

* Not available on the original table.

** Respectively: French Community/ German-speaking Community/ Flemish Community.

*** Respectively: England/ Wales/ Northern Ireland/ Scotland.

On the other hand, as several countries reports have pointed out, internet penetration is not the same as actual use. Most students cannot use Internet at schools without some kind of control by adults. Even in tertiary education access is not completely without restrictions. The importance of some kind of mediation from the school system is particularly evident when it comes to internet use by children.

Table 3.17: Country variation shown by indicators of technological infrastructure of schools

Country	Internet penetration rate in schools (%) year			Ratio student/ computer year			Internet use in schools	Existence of specific government organisation for ICT implementation in schools
	Primary	Secondary	Tertiary	Primary	Secondary	Tertiary		
Austria	Nearly 100 2004 (not specified by grade)			6 2004 (not specified by grade)			not available	not available
Belgium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	not available	Yes (Federal Action Plan)
Bulgaria	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	not available	not available
Cyprus	n.a.	n.a.	n.a.	17 2006	7.7 2006	7 2006	not available	not available
Czech Republic	100 2006	100 2006	100 2006	6-7 2006	10 2006	25 2006	Use with restrictions	Yes (Internet do skol)
Denmark	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	not available	not available
Estonia	100 2006 (not specified by grade)			14 2006 (not specified by grade)			No restrictions	not available
France	Nearly 100	Nearly 100	n.a.	n.a.	n.a.	n.a.	Use with restrictions	not available
Germany	98 2006	99 2006	n.a.	n.a.	n.a.	n.a.	not available	Yes (Action Plan eLearning/ German Confederation)
Greece	96 2005 (not specified by grade)			n.a.	n.a.	n.a.	Use with restrictions	not available
Iceland	Nearly 100 no year mentioned (not specified by grade)			n.a.	n.a.	n.a.	No restrictions	not available
Ireland	Nearly 100 2005 (not specified by grade)			9.1 2005	7.1 2005	n.a.	Use with restrictions	Yes (NCTE)
Italy	86 recent			10.9 2004 (not specified by grade)			not available	not available
Norway	Nearly 100 no year mentioned (not specified by grade)			n.a.	n.a.	n.a.	Use with restrictions	not available
Poland	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	not available	not available
Portugal	100 2006	100 2006	n.a.	12.8 2006-07 (not specified by grade)			not available	Yes (Crie)
Slovenia	100 2006 (not specified by grade)			9 2006	n.a.	n.a.	not available	not available
Spain	95.6	81.1	n.a.	10.1 2005	7.1 2005	n.a.	not available	not available
Sweden	Not specified			n.a.	n.a.	n.a.	not available	not available
The Netherlands	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	not available	not available
The United Kingdom	100 2007 (not specified by grade)			7	3	n.a.	not available	Yes (Becta)

Source: Based on national reports for EU Kids Online.

3.5.4.4 Hypotheses regarding the influence of this contextual factor on Safer Internet issues

There are so many factors at work here (level of internet access in school, level of growth, restrictions on use) that 'simple' hypotheses might be inappropriate.

3.5.5 Internet and media education

3.5.5.1 Sources of information

There are no comparable data.

3.5.5.2 Commonalities and differences between the countries

Logically, internet and media education should be complementary to the technological infrastructure of schools. However, regardless of how obvious this may seem investment in the technological infrastructure of schools is not always followed by corresponding investment in ICT education.

We should differentiate, however, general use of ICTs and other media as tools for learning from ICTs and media as subjects on the official curricula. The first case includes informal ICT and other media learning, while the second case is related to formal learning about these technologies, whether as specific subjects or as cross-curricular subject (common to several courses).

Except for Bulgaria, Cyprus and Sweden, all other countries reported that ICT learning is part of the curricula (both in primary and secondary levels of education). In most countries ICT learning constitutes an autonomous subject. Only in a few countries it is just a cross-curricular subject.

Table 3.18: Country variation in ICT and Media Education in schools

Country	ICT learning in schools curricula	Other initiatives regarding ICT use	Media education in curricula
Austria	Yes	Not mentioned	Yes, in all subjects
Belgium	Yes, in both primary and secondary levels	ICT Knowledge centres (for students, teachers, unemployed)	Not mentioned
Bulgaria	No	No	No
Cyprus	No	Cyber Ethics events	Not mentioned
Czech Republic	Yes, in secondary level	Not mentioned	Yes, in primary level
Denmark	Yes, in both primary and secondary levels	IT training of teachers, IT as optional subjects for secondary grade	yes
Estonia	Yes, cross-curricular	ICT educational programmes	Yes, courses in media education and upper secondary
France	Yes, in primary and secondary levels (B2i -Brevet Informatique et Internet, since 2000)	Not mentioned	Not mentioned
Germany	Yes (but technical)	Not mentioned	No
Greece	Yes, in primary (since 2001)	Yes, Greek School Network Learning material from the portal of MoE	Not mentioned
Iceland	Yes	Not mentioned	Yes, with ICT
Ireland	Yes, cross-curricular in primary level and specific subject in secondary level	Not mentioned	Not mentioned
Italy	Yes, in primary and secondary levels	Not mentioned	Not mentioned
Netherlands	-	-	-
Norway	Yes, cross-curricular in primary level and specific subject in secondary level	Not mentioned	Not mentioned
Poland	-	-	-
Portugal	Yes	Not mentioned	No
Slovenia	Yes, cross-curricular in secondary levels	Not mentioned	Not mentioned
Spain	Yes	Not mentioned	Not mentioned
Sweden	No	Not mentioned	Not specifically
UK	Yes	Not mentioned	Not mentioned

Source: Based on national reports.

Media and Internet education in schools is connected mainly with government's engagement in promoting technological literacy. Nonetheless, ICTs' presence in the curricula does not cover all official initiatives concerning this matter. Other institutional programmes regarding ICT education are also mentioned by some country teams (e.g. Belgium, Cyprus⁵², Greece, Denmark and Estonia).

It is difficult to assess if media education is part of national curricula or even a real educational concern since most country teams did not answer this question specifically. In fact, only six countries reported any specific concern for media education in the curriculum (Austria, Czech Republic, Estonia and Iceland), which is not conclusive.

Being able to know which countries have (or do not have) internet and media education in their schools curricula is one thing. Knowing what type of education we are talking about is another. Learning how to use a

⁵² In this case this is particularly important since ICT learning is not part of the curriculum.

computer is not only a matter of expertise. It is also a matter of knowing the implications of different kinds of usage. Some countries' reports have shown concern about ICT education being too technical (e.g. Ireland and Iceland) and not really concerned about risks and opportunities of the internet and other ICTs.

3.5.5.3 Indicators for classifications of the European countries

Although we have some indications of similarities and differences, there is incomplete information on which to classify countries into groups.

3.5.5.4 Hypotheses regarding the influence of this contextual factor on Safer Internet issues

In principle, in countries with more internet and media education one might expect more safety awareness, but as noted above, that depends on what is taught under these headings.

3.6 Background factors⁵³

3.6.1 Levels of social change

3.6.1.1 Sources of information

There are no comparable data.

3.6.1.2 Commonalities and differences between the countries

It is of course difficult to identify the most important or most substantial social change both nationally and internationally. Certain themes are, however, recurrent in many national reports. The state of the economy is one and many of the countries represented in the EU Kids network have experienced rapid economic growth over the past decade or so. This applies for most of the eastern European countries but also for others - for example, the UK, Spain, Portugal, Ireland and Iceland. Demographics is another area where many countries have experienced change, with a substantial inflow of migrants. This is the case, for example, for Greece, Iceland, Ireland and the UK.

Another significant demographic change is the diminishing fertility rate, as for example in Austria and Bulgaria. Culture is mentioned in some national reports but not as the most substantial change. Cultural change is an important theme in many former eastern European countries that have experienced the change from communism to capitalism. This change is of course not merely an economic change. Linked to that is the change in Portugal and in Spain from dictatorships to democracies.

3.6.1.3 Indicators for classifications of the European countries

Enthusiasm and support for anything related to the information society and the internet seems to be the general rule for the EU Kids countries. Many governments have actively worked to strengthen infrastructure and otherwise increase the use of information technologies. Discourses on the importance of information technologies do not, however, always materialise in concrete actions. In fact, it is also noteworthy that there are countries where this discourse is simply not very visible.

It is therefore possible to classify the countries into three different groups. In the first group are countries where discussions associated with the information society are high profile and where there are also concrete actions aimed at strengthening the country's' position, mostly through investment in infrastructure. In the second group there are countries where there is a public discourse on the importance of information technologies but where limited action is taken, for example, to improve access or facilitate development. In the third group are the countries where there is limited or no discussion of the issue. Based on the information given in the national reports the countries can be classified into these groups as follows:

⁵³ Authors: Kjartan Olafsson, Katja Segers, Liza Tsaliki.

Table 3.19: Clusters of countries according to discourses about ICTs

Group one: discourse and action	Group two: just discourse	Group three: limited or no discourse
Austria Belgium Cyprus Denmark Estonia France Iceland Ireland Portugal Slovenia Spain Sweden UK	Czech Republic Germany Greece Italy	Bulgaria

Source: Based on national reports

There is a close relation between the discourse on the information society and the general feeling of how the country is doing in comparison to other countries. Thus, where there is an open debate on the importance of the information society there are mainly two kinds of countries. There are on the one hand those who think that they are on the leading edge and on the other hand those who think they are not.

If we take the table above to be justifiable then taking the analysis one step further would yield the following classifications:

Table 3.20: Clusters of countries by self-evaluation of whether they are on the leading edge in relation to the information society

Group one: Think they are on the leading edge	Group two: Think they are not on the leading edge
Austria Denmark Estonia Iceland Sweden UK	Belgium Cyprus France Ireland Portugal Slovenia Spain

3.6.1.4 Hypotheses regarding the influence of this contextual factor on Safer Internet issues

One hypothesis is that there would be more safety awareness in countries where there is discourse and activity. Another is that there would be more in leading edge countries. In all it is highly plausible to assume that a societal context, that is shaped by a high motivation to support new technologies and the opinion to be among the leading countries will further children's and parents' interest in the internet. The above classifications partly correspond to the classification according to the percentage of young internet users.

3.6.2 Inequalities

3.6.2.1 Sources of information

Regular data on inequalities in today's societies are provided by the OECD.

3.6.2.2 Commonalities and differences between the countries

Despite strong economic growth in most European countries for more than a decade, all European countries still experience strong inequalities. Poverty is experienced by around 10% or more of the European population. Throughout the whole of Europe, key divides are about the same. Vulnerability to poverty and experience of social exclusion is especially found in certain social groups: women, lone parents/mothers, elderly and disabled people, people living in rural areas, people with a weaker social background, immigrants and European ethnic minorities (e.g. the Roma in Czech Republic and Bulgaria). Being part of those social groups minimises the chances of achieving a higher education and equality, despite the post-war expansion of educational participation throughout Europe.

3.6.2.3 Indicators for classifications of the European countries

Strong regional differences can be noticed within politically regionalised countries such as Spain (where e.g. Andalusia is a poorer region than Catalonia), Belgium (where Flanders is more prosperous than Wallonia) and Germany, a federal state that only was reunited in 1990. Comparing the whole of Europe, inequalities tend to be the strongest in the former communist countries (Estonia, Bulgaria, Czech Republic).

Table 3.21: Country variation in relation to changes in inequalities

Changes in GDP for OECD countries 2000-2007 (year 2000=100)

	2000	2004	2005	2006	2007
Ireland	100	123	131	138	145
Czech Republic	100	113	120	128	136
Greece	100	119	124	129	134
Poland	100	112	116	124	132
Iceland	100	115	123	126	128
Spain	100	113	117	122	127
Sweden	100	110	113	118	122
United Kingdom	100	111	113	116	120
Norway	100	109	112	114	118
Austria	100	105	107	111	115
Belgium	100	106	108	111	114
Denmark	100	104	107	111	113
Netherlands	100	105	106	109	113
France	100	107	108	111	113
Germany	100	102	103	106	108
Portugal	100	104	104	106	107
Italy	100	103	104	105	107

Bulgaria, Cyprus, Estonia, Slovenia are not in OECD data

3.6.2.4 Hypotheses regarding the influence of this contextual factor on Safer Internet issues

Societal inequalities are the background for any phenomenon which could be interpreted as digital divide. Since there is evidence that the degree of inequality varies across countries, it can be inferred that there are also differences with regard to the digital gaps between wealthy and well educated parts of the population on the one hand, and socially disadvantaged, less educated part of the population on the other hand.

3.6.3 Urbanisation

3.6.3.1 Sources of information

There are no comparable data. The information below is based on EU Kids Online National reports.

3.6.3.2 Commonalities and differences between the countries

Most European countries have over the last decade(s) firstly experienced a sustained movement of population from rural areas to urban centres, leading to rapid fringe developments in most cities. In a second phase, due to the rapid increase of housing costs in the cities, there was a migration movement from these inner cities to suburban areas, namely the rise of 'suburbanisation'. Rather sparsely populated countries such as Iceland, but also the UK, are predominantly urban and suburban. Some – rather small and dense - countries such as Estonia or Belgium can be regarded as being suburban on the whole.

Parallel with the migration to cities and later on to suburban regions, employment in the agricultural sector has decreased substantially in most European countries. Most European countries only have about 5% or less employment in agricultural sectors (Austria, Belgium, the Czech Republic, Denmark, Estonia, France, Iceland, Ireland, Italy, Spain, Sweden, the UK). By contrast, eastern European countries still count more substantially on agriculture, such as Bulgaria (50% of the population are working in agriculture) and Greece (11%)

The degree of urbanisation turns out to be an indicator of internet penetration. Firstly, urban populations in all European countries tend to be more online than rural populations. Secondly, particularly dense countries with large urban and/or suburban regions have a high rate of internet penetration. This is especially true for France (96%), the UK (80%), the Nordic countries and the Netherlands. Regionalised countries with large autonomous regions/states such as Germany, Spain or Belgium show large differences in internet access between the different states/regions.

3.6.3.3 Indicators for classifications of the European countries

Countries with important rural regions and an important agricultural activity (such as Greece and Bulgaria), tend to have on the whole smaller percentages of internet penetration. Some of these countries, and others, show at the same time strong regional differences (e.g. Ireland, Greece, Italy). Yet, in countries such as Iceland and Estonia where governments have developed incentive schemes, internet availability has risen in most rural areas during recent years.

Table 3.22: Clusters of countries according to degree of rural population

Group one: Countries with very small rural population	Group two: Countries with a larger rural population
Austria Belgium Czech Republic Denmark Estonia France Iceland Ireland Italy Spain Sweden UK	Bulgaria Cyprus Greece

Source: Based on national reports.

3.6.3.4 Hypotheses regarding the influence of this contextual factor on Safer Internet issues

If it is potentially more difficult to diffuse information in rural areas, one hypothesis that countries with larger rural populations would have less safety awareness

3.6.4 Work and social class

3.6.4.1 Sources of information

Collecting figures some aspects of work and social class seems to be quite difficult in most countries. Making European comparisons proves to be even harder. Figures are not systematically collected nor classified. Classifications do not match. Most countries do not offer precise statistics on the percentages of the population involved in manual versus non-manual work.

3.6.4.2 Commonalities and differences between the countries

Figures on sectors of employment or in terms of occupation show rather important similarities. Economies in most European countries are driven today predominantly by the services sectors (60-70% for Ireland, Austria, Spain) whereas industry still represents around 30% of employment. Agriculture only counts for about 5% in most European countries. All of these figures tend to show declining class oppositions and the growth of a middle-class.

3.6.4.3 Indicators for classifications of the European countries

It was not possible to build a classification system for EU Kids Online countries given the problematic nature of the data.

3.6.4.4 Hypotheses regarding the influence of this contextual factor on Safer Internet issues

In principle, one hypothesis might have been that there would be more safety awareness in countries where the middle-class is larger.

3.6.5 Free speech and censorship

3.6.5.1 Sources of information

There are no comparable data.

3.6.5.2 Commonalities and differences between the countries

Freedom of speech and freedom of opinion seems to be a common thread across all EU Kids Online members, protected by the very Constitution in Belgium, Denmark, Greece, and Spain. In fact, freedom of speech is guaranteed everywhere across the project partners - within the confines of the law. Among the ex-communist countries, Estonia and the Czech Republic are explicitly mentioned as ranking quite high by the Reporters without Borders on the Press Freedom Index.

National reports from the EU Kids team mentioned certain aspects of regulation in a number of countries. In Austria there is provision in slander laws, nevertheless; there is no government restrictions on the internet. In Bulgaria children have unrestricted access to the internet, similar to adults. In Denmark, administrative law may demand confidentiality from civil servants in a number of cases. In Germany there is public pressure towards the regulation of certain kinds of media content and self-regulation is practiced). In Greece freedom of expression on the internet is regulated in the same way as other print and electronic media and is curbed in cases of pornographic and obscene material, violation of personal information, misleading advertising and breach of national security. In Greece, freedom of information and expression on the internet is also under the protection of the European Convention of Human Rights. In Estonia there is no control over what is available online; only the big national dailies exercise some form of moderation. In Italy cross-media ownership under the Berlusconi regime has opened up a debate on free speech and freedom of information. In Norway commercial content directed to children is regulated, and blasphemous and racist expression is restrained. In Portugal the newly acquired 'openness' of the Portuguese media results in a lack of regulation of internet content. In Spain restrictions to the freedom of expression apply in cases of privacy protection, protection of minors, respect for the rights of others, libel and reporting of Basque nationalist terrorism. In Sweden self-censorship applies. In the United Kingdom following 9/11, restrictions on speech that incites religious hatred have been imposed, giving cause for concern. Censorship is stricter than elsewhere, particularly when it comes to sexual issues (e.g. the Netherlands the law is more tolerant).

3.6.5.3 Indicators for classifications of the European countries

We can see similarities and differences in this detail, but it was not possible to classify EU Kids Online countries based on this.

3.6.5.4 Hypotheses regarding the influence of this contextual factors on Safer Internet issues

In principle, one might have anticipated that it would be harder to regulate certain online content in countries where freedom of speech was valued.

3.6.6 Migration and cultural homogeneity

3.6.6.1 Sources of information

Eurostat/OECD provide statistics on the proportion of inhabitants with migration background etc.

3.6.6.2 Commonalities and differences between the countries

There are clear differences between the countries on the issue of migration and cultural homogeneity. On the one hand there are countries with a high level of cultural diversity and a mixture of different nations. An example of this is Belgium where there are effectively at least two nations. On the other hand there are countries like Iceland where until the 1980s about 99% of the population was of Icelandic origin. A common theme for many countries is an increased number of non-nationals during the 1980s and 1990s that for many countries has meant an enhanced sense of multiculturalism. In addition, many countries have seen stricter immigration policies with prospective citizens being required to take language exams and exams on basic knowledge (for example, in Germany). But it is not only the number of immigrants or foreign nationals which matters. It is also important to look at where the immigrants are coming from and to what extent the dominant population in each country experiences a shared set of values and ideas with members of minority groups or with immigrants. Two examples are Estonia where there have been tensions between the Estonian speaking (67%) and the Russian speaking (33%) populations and also Greece where 58% of the non-nationals come from Albania and are treated with some degree of suspicion.

It is interesting to note that most national reports from EU Kids Online teams do not mention anything about the possible impact of cultural homogeneity on tolerance towards content on the internet. In most cases those who do come to the conclusion that there is no such effect or at least it is very limited. Most countries probably have some regulation against hateful material even though this is mentioned by very few reports.

One possibility to take this theme further would be to distinguish between countries where there have been direct confrontations (not necessarily violent) between different groups. Examples would be Estonia (tension between Estonian and Russian speaking) and Slovenia (tensions with Croatia and Serbia) and look at if this has any impact on the on-line culture.

3.6.6.3 Indicators for classifications of the European countries

We can see similarities and differences in this detail, but it was not possible to classify EU Kids Online countries based on this.

3.6.6.4 Hypotheses regarding the influence of this contextual factor on Safer Internet issues

In principle, there could be two opposing hypotheses: where migration creates tensions, there is less tolerance of certain online content vs. where migration leads to multiculturalism, there is more tolerance of certain online content.

3.6.7 Role of the state

3.6.7.1 Sources of information

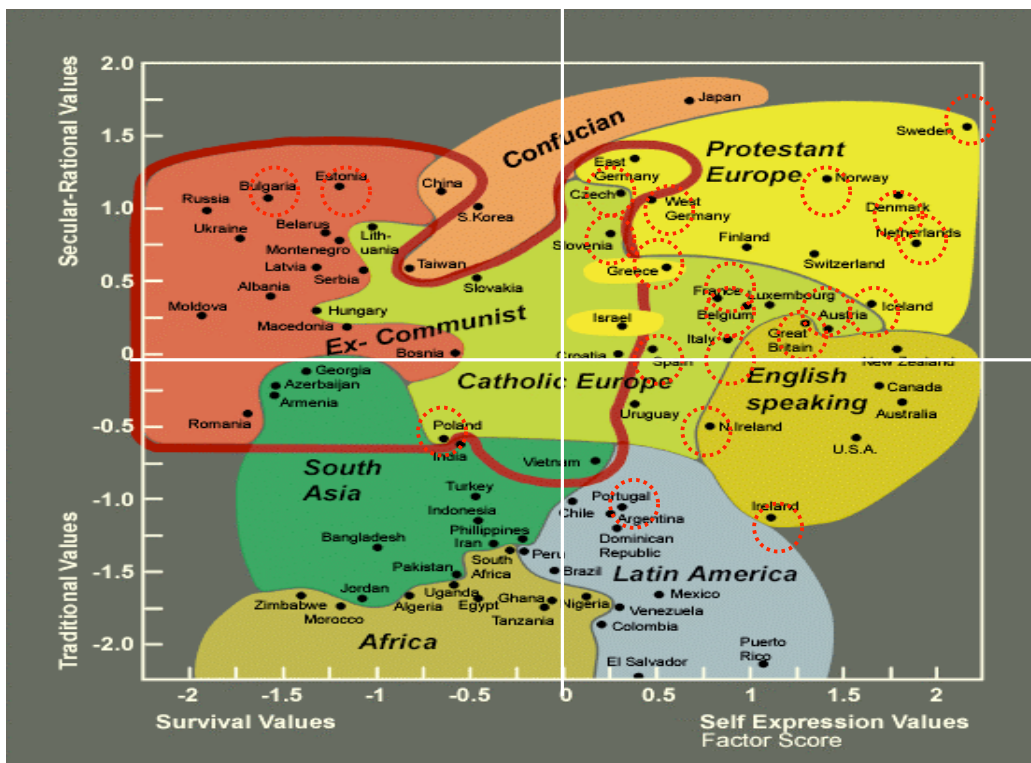
There are no comparable data.

3.6.7.2 Commonalities and differences between the countries

When dealing with the issue of the extent to which the state can be considered to be interventionist or laissez-faire, most national reports have a similar story to tell - namely that the past years have seen a development away from heavy state regulation following the new liberalist wave of the 80s and 90s. Looking at the text in the national reports, eight countries classify themselves as rather or somewhat interventionist. These are the Czech Republic, France, Germany, Greece, Italy, Iceland and the UK. Only three, Bulgaria, Cyprus and Estonia, mention a very liberal attitude. However 10 out of 21 countries either do not mention this issue or do not deal with it directly. It is also worth considering to what extent difference should be expected between the EU Kids countries in this respect. If the participating countries are marked out on the Inglehart-Welzel values map we can see that 15 out of 20 countries (Cyprus is not reported on the map) end up in the upper left corner of the Inglehart-Welzel map⁵⁴. Indicating that in these countries ideas are bent towards self expression rather than survival and towards secular/rational values rather than traditional values.

⁵⁴ The map is available from: http://margaux.grandvinum.se/SebTest/wvs/articles/folder_published/article_base_54.

Figure 3.1: Inglehart-Welzel map of political attitudes



To what extent is the state and/or the government regarded as being responsible for Internet safety (compared with industry, school, parents)?

3.6.7.3 Indicators for classifications of the European countries

When it comes to how the state acts towards the internet it is firstly important to distinguish between countries with high internet diffusion and those with low internet diffusion. In countries with low diffusion the question of the responsibility of the state is at least partially focused on the issue of connectivity. Leaving the question of connectivity aside, however, there seems to be a distinction between the countries on at least two issues. Firstly, there is the issue of regulation. On this issue there is a difference between countries where the emphasis is on centralised regulation and countries where the emphasis is on diffused regulation or self-regulation. But centralised regulation is not always pursued through government. It can also be pursued through the dominant service provider such as the former public telecommunications company. Bulgaria, Czech Republic, Estonia, Iceland, Ireland, Italy, Portugal and Sweden all mention an emphasis on self regulation whereas Cyprus, France, Germany, Greece, Spain and the UK talk about an emphasis on state regulation.

Another important issue is education where Sweden and Iceland, for example, talk about an emphasis on teaching children safe use of the internet. Based on this it seems possible to suggest a two dimensional classification of the countries into countries where there are different regulatory approaches and countries where there is a different level of emphasis put on educating children in “proper use” of the internet.

3.6.7.4 Hypotheses regarding the influence of this contextual factor on Safer Internet issues

A number of hypotheses are possible. One is that the nature of regulation makes a difference: for example, is there more safety awareness in countries with more centralised regulation? Another hypothesis would be that there is more safety awareness in countries where an educational approach is stressed.

3.6.8 Language

3.6.8.1 Sources of information

For a systematic comparison the Eurobarometer 2006 “Europeans and their languages” can be used. And Eurydice provides data on English lessons at school.

3.6.8.2 Commonalities and differences between the countries

Overall, English appears to be the common language of communicative used over the internet, apart from the mother tongue, that is, in which there is online content in all project member countries. English is also almost everyone's first foreign language taught at school as part of the curriculum from quite early on. In some countries, such as Greece and Slovenia, English is also taught in special language schools. In most cases where English is a foreign language, younger generations are more proficient and skilful in it in comparison to older ones, and can subsequently browse the global internet (in English) more aptly. Some countries are renowned for their inadequacy in English language skills, i.e. Austria, Germany (there is considerable internet content available in German catering for audiences in Austria, Germany and Switzerland), the Czech Republic, France, Italy, and Spain, while in others, the majority of the population is English-literate and proficient, i.e. Belgium, Denmark, Greece, Iceland, Norway, Sweden and the Netherlands. Arguably, the following countries can be seen to be somewhere in the middle regarding their English language skills: Bulgaria, Estonia, Slovenia.

In a few countries, there is online content in languages other than the national idiom and English, such as in Belgium (officially trilingual); in Iceland (Danish and other Scandinavian languages) and in Estonia (Russian).

3.6.8.3 Indicators for classifications of the European countries

Table 3.23: Countries organised by their relative literacy in English

Group one: Relatively more English literate	Group two: Relatively less English literate
Belgium Denmark Greece Iceland Norway Sweden The Netherlands <i>Ireland (First language)</i> <i>UK (First language)</i>	Austria Czech Republic France Germany Italy Portugal Spain

3.6.8.4 Hypotheses regarding the influence of this contextual factor on Safer Internet issues

In countries with more English literacy there would be more concern about what can be accessed online because the English-speaking world wide web is larger.

3.6.9 'Bedroom culture'

3.6.9.1 Sources of information

There are no comparable data

3.6.9.2 Commonalities and differences between the countries

In Bulgaria, families who can afford to have a home computer and a home internet connection are the minority, hence it is safe to say that there no substantial bedroom culture in Bulgaria. In Estonia, due to shortage of private space, the computer is usually in a common area and presumably under parental supervision. Parents, however, are not aware of internet-related risks. When outdoors, children are supervised until the age of 11-13, though restrictions are more lax in the countryside, which is considered safer in comparison to the urban milieu. Interestingly, bedroom culture was felt to be not so prevalent in France. Austria demonstrates media rich bedrooms, with 37% of 6-10 year-olds and 53% of 11-14 year-olds owning a TV set; 30% of children have a computer in their bedrooms.

Denmark has a high level of media access in children's bedrooms. Based on the National Study of Danish cultural and leisure time habits, in 2004 69% of children between 7 and 15 had television in their bedroom, 80% had radio, 91% had stereos, 45% had videos/DVD players, 39% had a computer and 42 % had a play station, x-box or other game computers, 20% had internet access in their bedroom and 59% have their own mobile. Most children however are very active offline (and outside bedrooms) as well as online, participating in sports activities, music, etc.

In Germany, the majority of children aged 8-11 have their own room, however, 73% of them spend their leisure in facilities such as sports clubs. Children from an ethnic background and from a lower social class are half as likely to be in clubs compared to those from higher social classes.

In Greece, emergent concerns about playing outdoors lead to increased parental supervision of children's activities and a bedroom culture- especially in urban areas. When it comes to risks, Greece ranks rather low in most of the Unicef child well-being index (youngsters having been drunk twice or more, having smoked cannabis and cigarettes), though about one fourth of Greek teenagers have been bullied.

In Iceland and Norway the weather calls for an indoor culture, but most children live in a media rich environment. In Sweden, domestic space has increased since the 70s which led to more children having their own bedrooms. Children live in media rich homes, inheriting the older versions of their parents' technologies. Owning a PC is thought to be a good thing for a child.

In Italy a bedroom culture is slowly emerging where gaming occupies a significant place. At the same time, Italian teenagers take part in various activities outside the home, such as sports and cinema. Overall, there is no parental control of children's internet access.

In Ireland, the lack of appropriate leisure facilities for children has led to the National Play Policy and a discussion towards safe public play spaces for children. Children's first preference is outdoor play but as they get older they tend to opt for their bedrooms.

In Spain, almost half of PCs owned by children are in children's bedrooms- which are often shared however with other siblings. Almost 60% of children owned a mobile in 2006, while 31% of TV sets can be found in children's bedrooms- otherwise in a common area.

In the Netherlands the danger of traffic has driven a lot of children back to their rooms. They play out less than previous generations. Also the diffusion of audio-visual devices makes the own room more attractive than before.

In the UK, growing affluence over the past decades, the lack of leisure activities for children and youth outside the home, and growing concern about children safety in public spaces have led to a media rich home environment and a bedroom culture. In terms of (Unicef) risks, the UK comes on top (or close to) on a number of these, such as having consumed alcohol twice or more aged 11, having used cannabis aged 15, having had sex aged 15 and having been bullied.

3.6.9.3 Indicators for classifications of the European countries

Table 3.23. Countries organised by the degree to which bedroom culture is widespread

Group one: Widespread bedroom culture	Group two: No widespread bedroom culture
Austria Denmark Germany Iceland Ireland Italy Norway Spain Sweden The Netherlands The UK	Bulgaria Estonia France

3.6.9.4 Hypotheses regarding the influence of this contextual factors on Safer Internet issues

One hypothesis would be that in countries where bedroom culture was more widespread it would more difficult for parents to supervise what is happening in the privacy of these rooms. One caveat is that in countries where it is not widespread, if children access the internet in spaces outside the home it can also be difficult for parents to monitor what they are doing.

4. Conclusions

4.1 Overview

This report has sought to identify and explain the pattern of cross-national similarities and differences in children's online use, skills, opportunities, risks and safety. To do so, it has drawn on a sizable evidence base in Europe, collated across 21 countries.

This report has argued that, without a comparative perspective, national studies risk two fallacies – that of assuming one's own country is unique when it is not, and that of assuming one's own country is like others when it is not. However, with a comparative perspective, it is easy to become overwhelmed by both the volume of data and its many complexities and limitations (a problem for the identification of findings) and by the multidimensional diversity of social, economic and cultural factors that differentiate the countries within which such data has been generated (a problem for the explanation of findings).

To identify and explain the available findings, we have produced a theoretical framework (see figure 1.1, ch. 1) that specifies hypothesised relations among key variables as follows:

- Having access to and making use of the internet is a prerequisite for encountering both opportunities and risks online.
- The development of attitudes towards and skills in using the internet both depends on and stimulates further access and use.
- Each of these factors influences – facilitating or reducing – the experience of online opportunities and online risks.
- All of these above factors is expected to vary according to the age, gender and socioeconomic status of the individual child.
- These factors and their interrelations should be understood in social terms – the child is always embedded in a social context, and parents, teachers and peers are especially likely to mediate their online experience.
- While the above relations are, broadly speaking taken to apply universally (i.e. to be cross-national similarities), it is highly likely that the values on each factor (e.g. amount of use, role of gender, degree or type of risk, nature of parental mediation, etc) will vary by country.
- At a country level, such cross-national differences may be explained by any of numerous contextual factors, particularly including the media environment, ICT regulation, public discourses, cultural attitudes and values and the educational system of a country.

In what follows, **we summarise the main findings and conclusions of our comparative analysis**, focusing on how they support, qualify or contest this framework. The conclusions fall into four parts.

1. The overall pan-European similarities that have been identified are summarised, focusing on the individual level of analysis.
2. The classification of countries in terms of children's online risk is reiterated, focusing on the country level of analysis.
3. Most crucially, the contextual factors are examined for their potential in explaining the country classification.
4. Conclusions are drawn regarding the effectiveness and limitations of the comparative strategy employed.

4.2 Summary of findings from the comparative analysis

In section 2.5.1, a series of key research questions and hypotheses were examined in relation to the available findings across Europe. These permit some general conclusions (i.e. cross-national similarities) which hold, with exceptions, and notwithstanding the limitations on data quality, across the European countries examined. These are summarised as follows:

Online access and use

- The evidence across Europe shows that, notwithstanding considerable cross-national differences in children's internet use (see next section), **the more parents use the internet, the more children do so also**. This applies at both a national level (i.e. countries where parents are more likely to use the internet are also countries where children are more likely to use it) and at an individual level (i.e. if an individual parent uses the internet, especially at home, they are more likely to have a child who uses it). It was concluded that parents use the internet both in order to encourage their children and because they have been encouraged to do so by their children.
- Contrary to the widespread assumption that, in general, children are the digital natives and parents the digital immigrants, it seems that (a) although children (under 18 years) use the internet more than adults in general, they use it less than parents in particular, and (b) this is particularly the case for those under 11 years but (c) those aged 12-17 are more likely to use the internet than are parents (87% vs. 65%). **It is teenagers, therefore, who are the digital pioneers in Europe.**
- These findings suggest that, in general, **for younger children, it is reasonable to expect that their parents will understand the internet** sufficiently to guide their use, but this may not hold for teenagers. Further, even though internet use may be low among the adult population, it is more likely that parents will be sufficiently familiar to undertake a mediating role with their children.
- Across Europe, **children are equally likely to use the internet at home and at school**, and there is a positive correlation between use at home and school across countries. The more children use the internet at home in a country, the more they are likely to use it also at school, and vice versa.

Online risks and opportunities

- Across Europe, a fair body of research evidence suggests that adults and children agree that **children use the internet as an educational resource, for entertainment, games and fun**, for searching for global information and for social networking, sharing experiences with distant others. Other opportunities (e.g. user-generated content creation or concrete forms of civic participation), are less common.
- These opportunities were classified into 12 cells according to the motives of those providing online contents and services and the relation of the child (as recipient, participant or actor) to that provision. However, there is little cross-nationally comparable evidence regarding the incidence and take-up of these various opportunities and, consequently, **little can be said regarding the possibility of cross-national differences in online opportunities.**
- It was further proposed that **each child climbs a 'ladder of online opportunities'**, beginning with information-seeking, progressing through games and communication, taking on more interactive forms of communication and culminating in creative and civic activities. Though many variants are possible, one implication is that communication and games playing may not be 'time-wasting' but, instead, a motivational step on the way to 'approved' activities.
- Although risks are particularly difficult to define in culturally-consensual ways, and they are difficult to research in methodologically-rigorous and ethically-responsible ways, a classification of 12 categories of risk was **proposed** as likely to be relevant across Europe (and beyond).
- In terms of overall incidence, these findings provide the basis for a tentative country classification according to likelihood of encountering online risks (next section). Some **cross-national similarities can also be discerned, particularly in terms of the rank ordering of risks in terms of likelihood.**

- Thus, across Europe, notwithstanding considerable cross-national variation, it appears that **giving out personal information** is the most common risk (approximately half of online teenagers), that **seeing pornography** is the second most common risk at around 4 in 10 across Europe, that **seeing violent or hateful content** is third most common risk (at approx one third of teens), that being **bullied/harassed/stalked** affects around 1 in 5 or 6 teens online, that **receiving unwanted sexual comments** is experienced by between 1 in 10 teens (Germany, Ireland, Portugal) but closer to 1 in 3 or 4 teens in Iceland, Norway, UK and Sweden, rising 1 in 2 in Poland. Last, as regards **meeting an online contact offline**, this is the least common but arguably most dangerous risk, showing considerable consistency in the figures across Europe at around 9% (1 in 11) online teens going to such meetings, rising to 1 in 5 in Poland, Sweden and the Czech Republic.
- Several risks are **yet to be researched comparatively** – self harm, race hate, commercial exploitation.
- In several countries, a degree of **distress or feeling uncomfortable or threatened** was reported by 15%-20% of online teens, suggesting, perhaps, the proportion for whom risk poses a degree of harm.
- Some of the **high reports of risk** – in Estonia, Poland, Czech Republic – require urgent awareness-raising. Similarly, the advent of **new forms of online activity** – e.g. social networking – points to the need for urgent new advice to children and young people. As estimates for now-familiar risks continue to be substantial, these too require continued attention to keep them in children's minds.
- Findings from the pan-European Eurobarometer survey suggest that, according to their parents, **children encounter more online risk through home than school use** (though this may be because parents know little of their children's use at school).
- However, among those children who use the internet in an **internet café** or at a friend's house, these are also risky locations, according to parents (especially compared with school use).
- Complicating policy interventions regarding online risk, it was suggested that **increasing opportunities tends to increase risks**, while decreasing risks tends to decrease opportunities. This suggestion remains for further research to support or contradict.

Online attitudes and skills

- Overall, the evidence supports the hypothesis that **internet-related skills increase with age**. This is likely to include their abilities to protect themselves from online risks although, perhaps surprisingly, this has been little examined.
- **Boys often claim higher skill levels than girls**, though this remains to be tested objectively.
- Across countries, those in which a higher percentage of parents claim their children have encountered harmful content tend also to be those in which parents estimate their children to have a lower ability to cope with these potentially harmful encounters. This **negative correlation** at the European level clearly indicates cross-national differences, though the interpretation is as yet unclear. Note that this correlation does not hold at an individual level (i.e. it cannot be said that if a parent claims their child has encountered harmful content, that parent is also more likely to think their child can cope).
- Indeed, though there is growing evidence of the **array of coping strategies** children employ when faced with online risk, these are not yet systematically studied and nor is their effectiveness evaluated.
- There are difficulties measuring internet-related skills as yet, and little available comparable research on children's attitudes to the internet.

Age, gender and socioeconomic status

- **Use of the internet increases with age**, at least up until the early to mid teens, when usage may peak. While this trend holds across Europe, in high use countries, children get online younger, and this has implications for risk – notable since high risk countries (see later) include low and high use countries.

- Generally, it seems that **older teenagers encounter more online risks** than younger children, though the question of how younger children cope with online risk remains little researched.
- The findings also suggest that **boys use the internet for longer and in more places** than girls do, and that girls and boys differ in the online activities they engage in - girls prefer activities that involve communication, content creation and collaboration, boys prefer competition, consumption and action.
- There are also **gender differences in risk**: boys appear more likely to seek out offensive or violent content, to access pornographic content or be sent links to pornographic websites, to meet somebody offline that they have met online and to give out personal information; girls appear more likely to be upset by offensive, violent and pornographic material, to chat online with strangers, to receive unwanted sexual comments and to be asked for personal information but to be wary of providing it to strangers; both boys and girls are at risk of online harassment and bullying.
- In almost all countries, higher SES households are more likely to provide their children with access to the internet, this resulting in greater or more frequent use among more advantaged children. It also appears that **lower class children are more exposed to risk** online.

Parental mediation of children's online activities

- Parents practice **a range of strategies for mediating their children's online activities** - they favour time restrictions, sitting with their children as they go online and discussing internet use, tending to prefer these social strategies to technical mediation (filtering, monitoring software). However, there are differences cross-nationally in preferred strategy that invite further analysis.
- More consistent across Europe is the **tendency for higher SES parents to mediate** their children's internet use, and for girls to be more subject to such mediation than boys.
- With regard to **age, the consistent finding is that of a U-curve**: that parental mediation increases with age until the age of around 10-11 years and then decreases again.
- It is unclear, on the present state of knowledge, that any of these strategies is particularly effective in reducing children's exposure to risk or increasing their resilience to cope.

4.3 Classification of countries in terms of children's online risk

In section 2.5.2, the differences identified across countries were used to construct a classification of countries in terms of children's online use and risk. Specifically:

- Although generally European children are gaining access to the internet, **differences in access and use** remain, enabling a country classification based on the percentage of children who use the internet.
- Also striking is the **diversity of online risk** figures obtained across countries, suggesting a classification of countries based on the likelihood of children's experiencing online risk.
- Putting these two classifications together produced the following table:

Online risk	Children's internet use		
	<i>Low</i>	<i>Medium</i>	<i>High</i>
<i>Low</i>	Cyprus Italy	France Germany	
<i>Medium</i>	Greece Portugal Spain	Austria Ireland	Belgium Denmark Sweden
<i>High</i>	Bulgaria	Czech R. Poland Slovenia	Estonia Netherlands Norway UK

- As noted earlier, this suggests that: (i) high use of the internet is rarely if ever associated with low risk; (ii) low use of the internet may be associated with high risk but not vice versa; (iii) high use, high risk countries are, for the most part, wealthy Northern European countries; (iv) medium use, high risk situations are characteristic of new entrants to the EC; and (v) Southern European countries tend to be relatively lower in risk, though there are differences among them.
- Putting this another way around, we might conclude that, as a broad generality, (i) Northern European countries tend to be “high use, high risk”; (ii) Southern European countries tend to be “low use, variable risk”, and (iii) Eastern European countries can be characterised as “new use, new risk”.
- There are other country classifications possible, as discussed in this report, particularly that based on children’s perceived ability to cope with online risk (as reported by parents in different countries) – high ability to cope is claimed for children in Austria, Belgium, Cyprus, Denmark, France, Germany, and the UK; low ability to cope is claimed in Bulgaria, Estonia, Greece, Portugal and Spain (intermediate countries are Czech Republic, Ireland, Poland, Slovenia and Sweden). Across countries, findings for coping are negatively correlated with parents’ perception that their child has encountered harmful content on the internet, indicating that high risk countries tend to have low perceived coping skills and vice versa.
- Also presented earlier is a country classification based on parental mediation. Here it was shown (table 2.19) that, on the assumption that the degree of television mediation practiced reveals parents’ willingness to mediate domestic media, countries differed in their relative mediation of television and the internet thus. In Austria, Italy, Poland, Portugal, Slovenia and Spain parents of internet users set rules for television more than they do for the internet. In Denmark, Estonia, Netherlands and Sweden, parents set more rules for the internet than for television. In Belgium, Germany, Greece, Ireland and the UK, parental rules are more or less equivalent. In short, in high use countries, parents mediate the internet more than they do television. In low use countries, by contrast, they are more likely to mediate television – suggesting **a regulation gap in low use countries** (i.e. parents are evidently willing to mediate, since they do so for television, but lack either awareness or skills to mediate the internet to a similar degree).
- Various **other forms of country differences** were noted in chapter 2. This included the finding that in Poland and Portugal, children between 0 and 17 years use the internet more than parents (i.e. even younger children are digital natives compared with parents and parents may be thus less able to supervise their children’s internet use); that in Italy, parents are especially behind their children; that there is some evidence that in countries with low public or domestic access, children are relatively more likely to go to internet cafés (e.g. Bulgaria, Poland), and that in Ireland, Netherlands, Portugal and the UK, girls use internet more than boys.

To the extent that we find cross-national differences rather than similarities, we must turn to the country level to explain these differences. It can be immediately seen that one simple explanation – country size – plays little relation, though it is equally likely that a country’s wealth (GDP) is related to internet use. Hence, in chapter 3, we reviewed the available evidence for six dimensions on which national contexts might vary in ways that shape children’s online experiences in those countries.

It should also be noted, on the other hand, that the contextual factors identified in what follows appear not to shape the above-noted pan-European similarities – i.e. to the extent that children’s online experience is similar across countries, we do not need to examine cross-national differences in context for such factors appear inconsequential.

4.4 Contextual explanations for cross-national differences

The general model of the research field (see figure 1.1, ch. 1) hypothesises that contextual factors at the country level, discussed in chapter 3, will influence children’s patterns of online use, opportunities and risks. As a final step of our comparative analysis, **we conceptualized countries as units of analysis in order to explain, if possible, cross-national differences in children’s online experiences** in terms of cross-national differences in these contextual factors.

Given the lack of truly comparable data, this step is particularly challenging since both sides of the argument - the “dependent” as well as the “independent” variable - had to be constructed using quite different kinds of

empirical data and relying on an on-going process of communicative validation within the EU Kids Online network. Thus, the following interpretations should be treated as highly tentative. Nevertheless, we believe that indications of significant relationships between contextual factors and patterns of online behaviour can provide a strong steer for future policy and research recommendations.

In summary, the discussion in chapter 3 of relevant contextual factors revealed the following hypotheses and observations.

Media environment

- Diffusion of the internet in different countries strongly influences children's use of the internet. Differences in access and use across European countries are still large. As a consequence, for children in countries in which internet diffusion has reached an advanced stage, online services are a normal part of their media environment and everyday life, whereas for children in other countries, internet use remains something that takes a specific effort or requires particular resources not available to all.
- Diffusion of the internet not only directly affects children's access and use but also indirectly influences the range of online activities, parental mediation and, as a result, online-related risks and opportunities. One important finding is that gender and SES differences appear to be decreasing in the course of the diffusion process.
- Due to the lack of comparable data on safety awareness in the different countries the influence on ISP's activities in safeguarding online safety cannot be examined directly. Although it is highly plausible that safety information provided by ISPs can raise awareness and reduce risks, there is little empirical evaluation available so far. In this respect there is a particularly urgent need for additional research as we cannot determine, at present, whether variation in national safety awareness activities accounts for cross-national variation in use, risk or coping with risk.
- Interpreting the evidence from national reports it may be assumed that the presence of a strong public service broadcaster as a (major) content provider for children, offline as well as online, can play an important role in guiding and teaching children how to use the Internet in a safe and constructive way. Although this assumption is highly plausible, it is surprising that there is almost no empirical evidence – even on the national level – evaluating the effects of dedicated online content, which sets out to support children in using the opportunities and avoiding the risks of the internet. In this respect, there is a particular need for additional research.

In conclusion, cross-national variation in the amount of children's use of the internet, which depends in many ways on cross-national variation in internet diffusion, is a crucial dimension in influencing children's experience of the internet in Europe. This is likely to have major consequences for their online opportunities. However, as noted above, higher use is associated with higher risk, but not exclusively so – there are also some medium use, high risk countries and at least one low use, high risk country (Bulgaria). Note that in Bulgaria, as observed in chapter 3, awareness of safety measures is low and filtering is not popular.

ICT regulation

- The classification provided by the World Economic Forum indicates that while about half of the countries judge that they have adequate regulation on internet issues in general, there are still exceptions – such as Cyprus, Poland and Greece - where more regulatory mechanisms are needed. This seems to correlate with other classifications fairly well – particularly with general internet diffusion. In short, **the more internet users, the more legislation regulating activities on the internet.**
- It was noted that Anglo-Saxon, Northern and Central European countries have a greater tradition of self regulation than Latin and Southern European countries, in which legislation plays a more important role than self-regulation.
- It also seems that where the internet is less common, more efforts are made in promotion of Internet use, while once the internet becomes more common, risk awareness and then literacy initiatives gain priority on the policy agenda.

In conclusion, although there appears to be considerable variation in ISP's activity in safeguarding online safety, this cannot be straightforwardly related to cross-national variation in children's use or risk. Nor, from table 3.6, can one discern a straightforward relation between the development of a regulatory framework and children's experiences online, though it is suggested that more developed frameworks are to be found in countries where internet use is relatively high. Compounding the challenges ahead, it will be observed that relatively low engagement of NGOs with internet safety issues was found in several high risk countries (table 3.9).

Public discourse

- Grouping countries on the basis of media coverage on online risks and opportunities does not lead to clear patterns. There are countries from north and south Europe that are high or low by some criterion of coverage. The same is true for internet penetration e.g. the UK and Denmark are in the same group as Portugal and Greece at one point. Media coverage must be driven by other factors.
- One possibility is that there are common patterns of conceptions of childhood that lie behind and are embedded in particular national media coverage. For example, in Norway there is a notion of a 'natural childhood', where sexuality is less of a risk while at the same time discussions of children's rights is strong. Such underlying conceptions may well help to shape the nature of how media engage in the topic of children and the internet.
- In all the countries what was common was **the newsworthiness of risks compared to opportunities** – in all countries over half of all articles reported solely risks, the average of all these countries being nearly two-thirds. In contrast, at most only a quarter of the media articles covered solely opportunities in any country and the average was less than a fifth.
- Looking at different types of risk (content, contact, conduct) different national media have very varied levels of coverage of the three types of risk. Countries low on content risks like Italy, can be high on conduct risks, and vice versa if we look at Denmark for conduct vs. contact. Or some countries can be high or low for some risks, but be medium for others. Hence, media coverage in different countries is sensitising people to different kinds of risk, which may have a bearing on the degree to which people in different countries think the various risks are prevalent.
- One example of striking differences in the relative attention to certain risks is the **media coverage of issues of sexuality**, which is mainly coverage of pornography on the net. In some countries this aspect dominates the risk related media coverage (more than one third of all articles): Belgium, Greece, Spain, and the UK. In contrast, interest in this issue is shown to be very low in Norway, Estonia and Denmark. Apart from the influence of particular national histories (e.g. the paedophile cases in Belgium), this probably reflects different national concerns (at least in the media) about what images of sexuality children should be exposed to.
- With regard to the question of the extent to which NGOs shape public discourses the main commonalities across Europe consist in the respective target groups: in almost all countries NGOs are focusing on raising the awareness of parents and children and to a lesser extent they target the service providers. Another commonality is that very few NGOs deal only with safer internet issues. Most of those working on this topic are NGOs working closely with national child protection agencies and more generally consist of child protection organisations and some extent parents' organisations as well.
- Some countries provided evidence that single media events, e.g. high profile 'crimes' or 'anti-social behaviour' have generated intense public discussions, as related to the school killings in Germany and Finland, a particular posting of youth misbehaving in a school in Slovenia or cases of happy-slapping in France and Italy. Given the media attention given to these events they might have long-term effects on the public discourses as they frame the perceptions of journalists as well as of the recipients

In conclusion media coverage on online risks and opportunities varies substantially across Europe. It may be assumed that parents in the countries with a general high level of risk reporting in the media (Portugal, the UK and Denmark), will have a higher perception of risks than the average of all these countries. In countries where press coverage reports considerable concerns about the risks of

content online, there will be more parental concern about these issues compared to countries where that particular reporting is low; the same logic applies to contact and conduct risks.

Attitudes and values

- The countries can be classified according to the dimensions of individualism and collectivism: 1) UK, Ireland, Belgium with high/moderate individualism and moderate collectivism; 2) Poland, Bulgaria, Estonia, Portugal, and Czech Republic with low individualism and moderate collectivism; 3) Austria, Germany, Slovenia, Spain, Iceland, Italy, France and Greece with moderate individualism and low collectivism; 4) Denmark, Sweden, and the Netherlands with high individualism and low collectivism.
- This classification shows there is a **high correspondence between cultural values and the overall country classification** as developed in chapter 2.5.2 based on children's internet use and the degree of online risk. Countries of group 4) are high use countries with medium or high risk; countries of group 2) are medium or low use countries with high risk; countries within group 3) are medium or low use countries with medium or low risk; and countries within group 1), somewhat overlapping with group 4) are high (or medium) use countries with high or medium risk.
- Another correlation can be found for the **parents' rules relating to children's use of the TV and the internet**. Almost all countries, in which parents put more emphasis on the mediation of TV use, belong to group 3, which can be called "the Catholic Europe", whereas all countries in group 4, "the protestant Europe" clearly apply more rules for online use.

In conclusion, the correspondence between general values and patterns of online use and risks indicates that online behaviour as well as perceived online risks are related to and shaped by underlying value orientations, which differ across Europe. This means that awareness programmes have to consider the cultural specificities of single countries in order to reach their target groups.

Educational system

- With regard to the general level of education, Southern European countries show considerably higher rates of only pre-primary and primary education than Northern, Central and Eastern European countries. However, among the younger generations these differences are going to disappear. So far, cross country differences in children's online use can be partly explained by different levels of general education: **the higher general education of a country, the higher its children's online use.**
- European countries differ in the degree to which differences in education and socio-economic status are transferred to the children's generation. Unfortunately there is almost no systematic empirical evidence on SES related differences in children's online behaviour, but illustrative observations support the assumption that in more stratified societies, internet use is particularly shaped by SES differences.
- The technical infrastructure of schools has been massively increased in the last years throughout Europe. However, as several national reports point out, internet penetration in schools is not the same as actual use. Most students cannot use internet at schools without some kind of control by adults. Even in tertiary education, access is not completely without restrictions.
- In most European countries ICT learning is part of the curriculum (both in primary and secondary levels of education). In most countries ICT learning constitutes an autonomous subject. Only in a few countries it is just a cross-curricular subject.

In conclusion, the educational system is a relevant contextual factor for children's internet use. Although the evidence available does not allow for systematically checking the hypothesis, it may be assumed that higher education will help a) children to develop online skills and b) parents to develop skills in mediating their children's online use. The technical infrastructure of schools as well as the way how the internet is integrated in curricula and everyday teaching practices will influence children's online use at schools. Since online use at schools is often restricted risks as well as opportunities are reduced in that setting.

Background factors

- The EU Kids Online network generated a wide range of hypotheses regarding the cultural, socio-economic and technical factors that might influence children's online access, use and safety. In many cases, however, there was too little available comparable evidence to permit examining these hypotheses.
- It was possible to classify countries according to their active endorsement of the information society discourse, but it seemed that this did not relate strongly to country classifications based on risk, coping or parental mediation, though they are loosely related to the classification based on use. Unsurprisingly, high use countries are more likely to consider themselves on 'the leading edge' in the information society. Whether this results in higher safety awareness among children and parents is unclear from the available evidence.
- **Urbanisation may shape children's encounters with the internet and risk.** Countries with large rural populations (Bulgaria, Cyprus, Greece) are also low use countries. Although it is widely held that socioeconomic status inequalities also shape children's access to the internet, we found little use of comparable indicators applied to children in Europe.
- In terms of the role of the State, those **countries that classified themselves as relatively interventionist (see 3.6.7.2) tended to be low to medium on both use and risk** (with the exception of the Czech Republic and the UK – medium or high use respectively, and both high risk). Notably, two countries described as taking a liberal approach (Bulgaria, Estonia) appear to be high risk for children online.
- Language – we have noted that English language proficiency tends to be higher in Belgium, Denmark, Greece, Iceland, Norway, Sweden and the Netherlands and to be relatively low in Austria, Germany, the Czech Republic, France, Italy, Portugal and Spain. Setting aside the exception of the Czech Republic (where risk was more contact than content risks) and Spain, one may note that, as hypothesised, the former group are generally higher on online risk indicators than the latter. **Access to English language content may bring risks as well as opportunities.**
- The personalisation of children's media (e.g. via bedroom culture) may be influencing children's lifestyles but seems to have little influence on their online use or risk. This may change as internet access in the child's bedroom (or on their mobile phone) – beyond parental supervision – becomes more widespread.

In conclusion, the adoption of an information society discourse, plus such socio-structural factors as degree of urbanisation, may be associated with the degree of internet access and use that children in different countries enjoy. Other factors appear to be more closely associated with the degree of online risk encountered – this is seemingly higher where the State is less interventionist in the regulatory regime, where children are more likely to understand English and, perhaps only in the future, where personalised internet access is more common.

4.5 Commentary on the comparative process

Working closely together for two years since June 2006, the 21 national teams that comprise the EU Kids Online network have developed constructive working arrangements designed to capture similarities and diversity across member states so as to facilitate the identification of common patterns, themes and best practice. This twin dynamic of recognising difference and drawing out shared understandings was originally developed in our three-national 'pilot' comparison (ref to D3.1) and has proved productive.

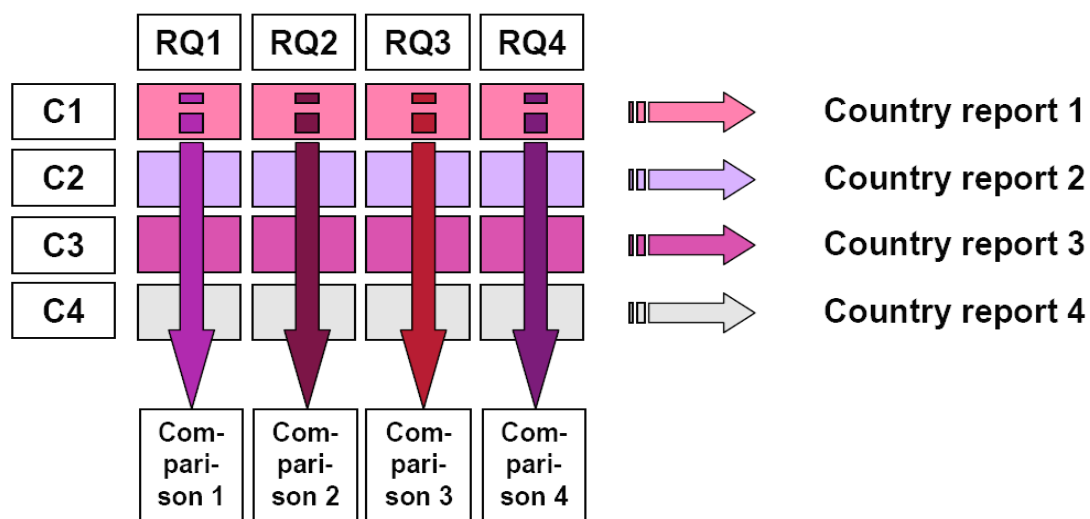
Specifically, **we developed a comparative strategy** in order to 'add value' on a European level to the many national studies conducted in different countries, disciplines and languages (identified in Staksrud et al, 2007). For those in similar or related domains who are contemplating the conduct of an cross-national analysis of similarities and differences in findings, we propose that our analytic framework and working methods can be of considerable value.

As illustrated in Figure 4.1, below, the strategy required a set of countries (C1... Cn) to work collaboratively to frame research questions relevant to all (RQ1... RQn). These research questions and hypotheses provided a means of explicating the possible cross national similarities and differences, trends and associations that can be derived from the existing research literature and/or are of relevance to safety and risk policy. These were addressed in turn in chapter 2, as summarised above.

The process of comparative analysis can be represented schematically as a grid.

- Reading horizontally, country level reports were generated by using the available data to answer each research questions at the national level (i.e. findings for Belgium, France, UK, etc). These national reports are available on the EU Kids Online website for the 21 countries included in the network.
- Reading vertically, comparative reports are generated by using the cross-national data pertinent to each research question (i.e. findings for age, gender, skills, coping, etc).
- Insofar as the comparative reports identified cross-national similarities, the focus was on the individual level of analysis (c.f. Figure 1.1). Insofar as they identified differences, the focus was on the country level of analysis (i.e. the five contextual factors also shown in Figure 1.1, plus a series of background factors).

Figure 4.1: Overview of the research procedure



This approach, we conclude, achieves **a systematic and structured outcome** in terms of comparative analysis. Regarding Kohn's (1989) main rationales for comparative research, outlined at the start of this report and here pursued in terms of three of his four approaches, the present strategy permitted us to achieve the following:

- Treat countries as objects of analysis in their own right.* This approach employs an idiographic lens to understand countries for their own sake; comparison provides a useful strategy for 'seeing better' and determining what is distinctive (or not) about a country. It was achieved through production of the country reports.
- Treat countries as the context for examining general hypotheses.* This approach analyses tests general theoretical models across nations, hypothesising similarities across countries while also permitting findings of cross-national differences to challenge or limit claims. It was here achieved through production of the comparative reports at the individual level of analysis.
- Treat countries as units in a multidimensional analysis.* This approach seeks to explain patterns of similarities and, particularly, differences across countries, by inquiring into the external indicators that explain how and why nations vary systematically. This was achieved, here through production of comparative reports at the country level of analysis (i.e. explaining the cross-national classification in terms of contextual factors).

We conclude that this comparative strategy has been broadly successful, and offer the following brief comments in terms of methodology.

- Specifically, our approach permitted a clear translation of three main rationales for cross-national research into an effective strategy for comparing countries on multiple dimensions, as organised through a clear theoretical framework.
- The **analysis could thereby respect findings of both pan-European similarities and differences**. It could test specific hypotheses and also address open research questions. It could situate each country in the context of others, and it could situate the individual child in the context of national cultural factors.
- On the other hand, the process was undoubtedly **demanding in terms of research effort** – both for each national research team and in terms of the management of and commitment to a highly collaborative and iterative working process.
- The analysis was also **limited by the quality and extent of the available evidence base** – the many gaps in the data and the many differences in definitions, sample and methods used for such core issues as online use and risk meant that all claims and conclusions in this report must be treated as indicative rather than conclusive.
- Simply put, some data was weaker than could be wished, some was lacking and some was difficult to interpret. We proceeded, therefore, on the bold assumption that conducting comparisons is preferable to saying nothing about pan-European patterns, since some added value must surely be extracted from the many studies conducted. But we did so with extreme caution, not least in order to stimulate more and better research in the future.
- The hardest task, other than locating relevant data and negotiating its significance across the network, was in producing the country classifications. Some may argue that these are too reductive, turning differences in degree into absolute differences. But for theoretical and pragmatic reasons, we propose that country classifications are useful, providing a means of discussing similarities and differences as well as focusing attention on policy priorities (notably, high risk countries).
- It is also noteworthy, if unsurprising, that although most available findings were national studies, for many purposes the comparative European data (mainly Eurobarometer, though other sources were also useful) provided the strongest basis for cross-national analysis.
- In terms of **quality control**, we have sought to explicate the basis for our claims and conclusions throughout, facilitating a ‘read back’ from conclusions to the evidence base for those and, further back, to the country reports and original reports of data (available at www.eukidsonline.net) from which they were derived.
- Many comparative studies produce the empirical basis for cross-national comparisons but end their work at the stage of producing a series of country reports, effectively leaving the task of identifying and explaining observed similarities and differences to the reader. We hope our present work provides a model for the crucial stage of comparative analysis that can systematize and maximise the benefits of cross-national research.
- The EU Kids Online network has a further year of work before producing its final report. In this time, we will pursue the lines of inquiry established here in two directions. First, we will explore the possibilities of statistically testing the relations among country-level and individual-level factors through Qualitative Comparative Analysis techniques. Second, we will **draw out the policy implications** of the findings presented here, to form the basis of our policy recommendations, due in June 2009.
- While it has been our intention to extract as much value for the diversity of studies conducted on topic of children’s online use, opportunities, risk and safety, there can be little doubt that **more research, rigorously conducted on a strongly comparative basis, is greatly needed**.

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6. Annexes

Annex A: EU Kids Online

European Research on Children's Safe Use of the Internet and New Media. See www.eukidsonline.net

EU Kids Online is a thematic network examining European research on cultural, contextual and risk issues in children's safe use of the internet and new media between 2006 and 2009. It focuses on the intersection of three domains:

- Children (mainly up to 18 years old), their families, domestic users
- Online technologies, especially the internet; focussing on use and risk issues
- European, cross-national, empirical research and policy

This network is not funded to conduct new empirical research but rather to identify, compare and draw conclusions from existing and ongoing research across Europe.

It is funded by the European Commission's *Safer Internet plus Programme* (see http://europa.eu.int/information_society/activities/sip/index_en.htm) and coordinated by the Department of Media and Communications at the London School of Economics, guided by an International Advisory Board and liaison with national policy/NGO advisors.

EU Kids Online includes research teams in 21 member states, selected to span diversity in countries, academic disciplines and expertise: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, France, Germany, Greece, Iceland, Ireland, Italy, Norway, Poland, Portugal, Slovenia, Spain, Sweden, The Netherlands and The United Kingdom.

The objectives, to be achieved via seven work packages, are:

- To identify and evaluate available data on children's and families' use of the internet and new online technologies, noting gaps in the evidence base (WP1)
- To understand the research in context and inform the research agenda (WP2)
- To compare findings across diverse European countries, so as to identify risks and safety concerns, their distribution, significance and consequences (WP3)
- To understand these risks in the context of the changing media environment, cultural contexts of childhood and family, and regulatory/policy contexts (WP2&3)
- To enhance the understanding of methodological issues and challenges involved in studying children, online technologies, and cross-national comparisons (WP4)
- To develop evidence-based policy recommendations for awareness-raising, media literacy and other actions to promote safer use of the internet/online technologies (WP5)
- To network researchers across Europe to share and compare data, findings, theory, disciplines and methodological approaches (WP1-7)

Main outputs are available or planned as follows:

- *Data Repository*: a public, searchable resource for empirical research (now online)
- Report on *Data Availability*: a mapping of what is known and not known (Sept 2007)
- Preliminary Report *Comparing Three Countries* (Sept 2007)
- *Methodological Issues Review* (Sept 2007)
- Report on *Cross-National Comparisons over 18 Countries* (Sept 2008)
- *Best Practice Research Guide* (Sept 2008)
- Report: *Cross-Cultural Contexts of Research* (March 2009)
- *Final Conference* (June 2009)
- Report: *Summary and Recommendations* (June 2009)

- *Final Report and Book* (Sept 2009)

Annex B: EU Kids Online members

Country	Institution	Researchers
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		Manfred Rathmoser
		Christine Wijnen
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		Katia Segers
		Joke Bauwens
Bulgaria	GERT	Jivka Marinova
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		Maria Dimitrova
		Iliana Dimitrova
	Internet Rights Bulgaria Foundation	Christina Haralanova
Cyprus	Cyprus Neuroscience and Technology Institute	Yiannis Laouris
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		Elena Aristodemou
Czech Republic	Masaryk University, Brno	Vaclav Stetka
		Jan Miessler
Denmark	IT University, Copenhagen	Gitte Stald
		Jeppe Jensen
Estonia	University of Tartu	Veronika Kalmus
		Pille Pruulmann-Vengerfeldt
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		Pille Runnel
		Kadri Ugur
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