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Risky experiences for children online:
Charting European research on children and the internet

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Abstract

Children's online experiences, especially the risks to which they might be exposed, is an increasingly important policy and research concern. This paper reports an analysis of the amount, nature and range of empirical research concerning children's online experiences across 18 European countries. Research teams in each country have collaborated, as part of the 'EU Kids Online' network, to identify, code and compare studies. In all, 235 studies were identified and coded in a publicly accessible data repository. All countries had some available evidence regarding children's online risky experiences, with strengths mainly in relation to research on access and use; several countries were found to have a richer evidence base encompassing research on online learning, literacy, participation, parental mediation, and so forth. Regarding risks, more research focused on potentially harmful content than on risky forms of contact. Key research gaps included research on younger children, on mobile online platforms, and on certain types of online risk. The paper concludes by observing the challenges facing researchers in this field, including the time-sensitivity of research that quickly dates, the difficulty of tailoring research to meet the needs of a demanding policy agenda, the complexity of designing projects that recognise the contextual and contingent factors that mediate children's online activities, and the ethical considerations that apply when asking children about private, transgressive or upsetting experiences.

Introduction

There is growing agreement that the activities of multiple and diverse stakeholders are required to promote safer use of the internet, to protect children and young people and to empower parents and teachers with online safety tools. There is also a growing consensus that this approach should be evidence-based. Research is needed to chart which children have access to what technologies, to understand the incidence of risky practices and of parental regulation. Such research can also contextualise use and risk-related findings, so that we understand how and why some children encounter certain risks and with what consequences. Last, research can target awareness-raising and other interventions aimed at particular age, demographic or national groups. Such research is now underway internationally (e.g. Wolak, Mitchell & Finkelhor, 2006) including, as we address here, in Europe, where research is addressed both to national policy communities and also to the European Commission's initiatives on internet use and safety.

Even within Europe, cross-national differences in internet use are substantial, ranging from less than a third of children online in Greece and Bulgaria to over two thirds in Estonia and Denmark (Eurobarometer, 2006). Cross-national research is needed to understand how and why children have different experiences online in different countries, and to guide policy makers working to ensure that parents and children receive up to date, comprehensible information, tailored to the modern family (in all its diversity), appropriate to social mores (in all their cultural variation), and accessible to all (despite economic and education-based stratification). Without a comparative and contextual 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 (Hasebrink, Livingstone & Haddon, 2007; Livingstone, 2003).

To inform this agenda, research teams across Europe, from diverse institutions, disciplines and perspectives are investigating children's internet use. But keeping track of this research is a demanding task. Those who are not active researchers may lack the expertise required to identify, interpret and evaluate available research. Those working in one country or language may struggle to use research conducted elsewhere. Those with the power to commission research in one country should know what has proved useful in another. For these reasons, a bridge is required between the specialist domain of empirical research and the policy imperatives of safer internet initiatives. 'EU Kids Online'[1] is a thematic network designed to inform this policy context by examining European research (national and multi-national) on cultural, contextual and risk issues in children's safe use of the internet and online technologies (see www.eukidsonline.net; Haddon, 2007).

Identifying the evidence base

The EU Kids Online network has identified and coded recent and ongoing empirical studies regarding children and the internet and online technologies in Europe.[2] By January 2007, 235 discrete projects had been identified by library, database and online searches, following up press reports, contacting experts and snowballing references. This evidence base forms the basis for the present analysis.[3] Some of the studies are small scale while others are substantial. In most, children and the internet are the central focus, but in some they comprise a minor part of a larger research project. The majority researched children directly, though there are also studies of parents and teachers as informants on children's behaviour.

Empirical research on children and online technologies, mainly the internet, was identified as follows (numbers of studies are shown within brackets): [4]
- *Southern Europe*: Greece (29), Portugal (19), Spain (14), Slovenia (11)
- *Nordic region*: Denmark (19), Iceland (7), Norway (17), Sweden (27)
- *Northern Europe*: Belgium (33), Estonia (17), France (15), Germany (33), Netherlands (15), UK (50)
- *Central Europe*: Austria (21), Bulgaria (7), Czech Republic (12), Poland (12)

Clearly, the conduct and availability of research is unevenly spread across Europe, partly because mass diffusion of the internet is itself more recent in some (e.g. the Czech Republic)

than others (e.g. Germany, Nordic countries), partly because of unevenness in research funding. It seems that larger countries sustain a more substantial body of empirical research than smaller countries and, in some countries, even if the internet and internet studies is well established, the issue of children and risk remains a recent addition to the public policy agenda.

Multinational comparative research

We start with the handful of multinational studies for these employ directly comparable measures and samples in different countries. Setting an early baseline, The 12-nation 'Children and Their Changing Media Environment' study charted the contexts of children's use of old and new media in Europe[5] in 1997-8 (Livingstone & Bovill, 2001). Little or no research on online risk had then been conducted, but by 2003, the SAFT (Safety Awareness Facts and Tools) awareness project funded by the EC Safer Internet Action Plan examined 9-16 year old children's activities online, and the perceptions of their parents, in Norway, Sweden Denmark, Iceland, and Ireland. Since updated for Norway and Ireland in 2006, this survey examined use of technology, electronic games, seeking information, parental knowledge and supervision, email accounts, chatting, illegal behaviour, internet education and safety, mobile phones, offensive material, submitting personal information, face-to-face meetings and other areas (Larsson, 2003; Webwise, 2006).

Following from this, the pan-European Eurobarometer surveyed parents/carers in autumn 2003 in the original 15 EU countries, and a second survey added the ten new members states in 2004. A further survey of the EU25 plus acceding and candidate countries[6] was conducted in 2005-6 (Eurobarometer, 2006). These surveys examined use of the internet, self-assessed expertise, children's use of the internet, location of use, mobile phone ownership, and parental rules and mediation regarding internet use. Finally, we note here the Mediappro project (2006), also EC funded, conducted in nine countries[7] in 2005, combining classroom surveys with 25 qualitative interviews in each country to ask how young people across Europe appropriate the internet and new network media? This study concentrated mainly on the positive dimension of internet use rather than risks.

Evaluating national studies – their nature, amount and availability

However, the majority (95%) of research in this field consists of single-nation studies. Over half of these are available online, though only one in 10 is published as an academic article, book or book chapter, etc, suggesting rather little of the research has undergone a formal process of anonymous peer-review and editorial scrutiny.[8] It is also problematic that many of the reports are largely descriptive - valuable as a timely snapshot of online use but lacking the theoretical framework or critical analysis required for a deeper interpretation of findings. Most problematically, 12% of the empirical studies are publicly available only in summary form (thus omitting such important information as sample age or size, questionnaire items, mode of survey administration, etc).[9]

Much of the research is conducted by departments of education, information or psychology, though this varies across countries and is not always easy to determine from publications. However, it seems likely that multidisciplinary research teams can best generate a multidimensional picture of children's internet use in context. Also important, there are grounds for concern at the proportion of market-research conducted studies, typically commissioned by commercial or child welfare agencies or conducted by the market research companies themselves, in which there was no generally discernable research or disciplinary framework guiding the study; rather, these studies repeat tried-and-tested questions, or questions that arise from public or policy debates, resulting in a snap-shot of current trends but with less value in terms of generating a longer term understanding of children's relation to the internet.

The choice of research methodology shapes the available findings (see Lobe, Livingstone & Haddon, 2007). Overwhelmingly, research in this field is quantitative, thus emphasising the representativeness of findings and the frequency and distribution of activities across a population. Less research is qualitative or multi-method in nature, so we have less knowledge

of children's own experiences or perceptions or of the ways in which online activities are contextualised within their everyday lives. Non-academic projects are especially likely to be quantitative in nature.

Unsurprisingly perhaps, more of the research on younger children uses qualitative methods. Though understandable in practical terms, this makes it difficult to estimate the frequency of certain practices or uses within younger populations or to draw clear comparisons across the age range from young children to teenagers. The relative paucity of qualitative methods with older teenagers, by contrast, means that the findings may lack contextualization or interpretation in terms of the experiences and perceptions of these young people themselves.

The source of funding can shape the research agenda and the specific questions addressed. It may also influence the nature of the research. In this field, it seems research is mainly funded by national governments. Commercial companies, research institutes and regulators are sometimes significant funders, this varying across countries. Last, European Commission funding, especially the initiatives of the Safer Internet Action plan, has generated a valuable body of multi-national studies that permit direct comparisons across countries. For countries where little research has yet been developed, participation in a multi-country study (e.g. funded by the EC) can provide a valuable means of raising an issue within a national research agenda.

Further, in countries where external funding is sparse, doctoral and masters' theses can be an important source of information (e.g. Portugal, Sweden, Austria). The funding source varies with the research topic: government sources fund a wide range of research topics, academic research seems more concerned with the contexts and consequences of online use, commercial companies appear more likely to research the negative than the positive dimensions of use, and regulators and charities (insofar as they do fund research) mainly focus on risk.

The majority of research on children's use of the internet and online technologies is conducted on teenagers. There is a rough correlation between the proportion of young people using the internet and the amount of research on them – recall that in the EU25, those who have used the internet is 9% of those under 6, 1 in 3 of 6-7 year olds, 1 in 2 of 8-9 year olds and more than 4 in 5 teenagers aged 12-17 (Eurobarometer, 2006). But since use among younger children is growing fast, and since vulnerability in terms of maturity, or available coping strategies may be greater for younger children (even though incidence of risk is higher for teenagers), children younger than 12 years old must surely represent a priority for future research.

The most researched topics were online usage, followed by access and then interest and activities, and most research on access concerned access via PCs, with little on mobile phones or games machines as platforms for internet access. However, there seemed to be little research on why some children lack access and, as regards use, there was little research on the newest kinds of use, such as blogging and podcasting. In all, the research needs to catch up with the technology and with the policy agenda. Research on use included attention to children's online skills, social networking, gender differences and, with less frequency (especially in Bulgaria, the Czech Republic, Slovenia and, perhaps more surprisingly, in Germany and The Netherlands), playing online games, children's concerns and frustrations, and identity play. The least frequent topics were civic and political participation, interpreting online content, creating online content, online learning, seeking advice online and search strategies. Also lacking is much empirical research on media literacy - the interpretation, creation and critique of online content.

Even in countries with a stronger research tradition in this field, there are notable gaps (e.g. in the Netherlands, several key areas are not covered, and Germany also has significant gaps). Online gaming, identity play and seeking online advice are more researched in the Nordic countries, and these have also shown more interest in civic/political participation and social networking online, although in terms of numbers of studies, the UK has covered many of these issues also.

Significant for policy makers, we found rather little research on parents' experiences of the internet and how they mediate their children's experiences. The most common topic here was parental styles of regulating their children's internet use, with less research examining either children's responses to regulation, or the effectiveness of such regulation. Nonetheless, all countries had some studies concerned with parents' knowledge of their children's internet usage and parents' style of regulating their children use. Further, all had some studies of parents' awareness, attitudes and concerns regarding online risks, with quite a few studies in the UK on this topic. There was more mixed coverage of the effectiveness of filtering software, with about half the countries researching this.

What are the risks for children of going online?

EU Kids Online was specifically interested in identifying research on online risk in relation to children. The available research was coded for its inclusion of a range of possible risks. These risks were classified into four broad categories, as follows, with the frequencies of studies identified noted in brackets:

- Content risks – exposure to illegal content (34 studies), exposure to potentially harmful content (43), encountering sexual/violent/racist/hate material (38), misinformation (18) (problematic) user-generated content (14), challenging content (e.g. suicide, anorexia, drugs, etc.) (8)
- Contact risks – contact with strangers (44), cyber-bullying (28)
- Commercial risks – advertising/commercial exploitation (21), illegal downloading (20), gambling (9)
- Privacy risks – giving out personal information (37), invasion of privacy (24), hacking (14)

Thus, notwithstanding considerable national variation, it seems that the most researched risks are content-related and the least researched risks are commercial. Generally, research on risks tends to be more concerned with mapping and quantifying risks than asking why children exhibit risky behaviour online. And there is little on the consequences of risk experiences online.

Do the risks researched vary by age of respondent? Of the 18 studies researching very young children (0-5), few have addressed risk. For 6-8 year olds, there is more work on privacy and content risks, though less than for older children and teenagers, and there is little on contact risks. Contact risks are particularly researched for 12-17 year olds. For those aged 9+, privacy is a concern for research across the age range, as are content risks (which receive more attention). Overall, given the policy attention currently being paid to questions of online risk and of both children's and parents' media literacy (or safety awareness), the scarcity of research on these issues is noteworthy. Though we cannot here consider the nature and depth of the research conducted, it appears that in many countries, research is relatively 'thin' in terms of considering forms, contexts and consequences of online risk exposure by children in Europe.

Conclusions

There are still some significant gaps in the evidence base. First, children of primary school age, and even younger, are increasingly gaining access to the internet, yet most research concerns teenagers and disproportionately little of that on younger children addresses questions of online risk. Second, researchers have focused overwhelmingly on the fixed internet: as children gain access to the internet and online opportunities through other platforms than the PC - such as via mobiles and games consoles - it will be vital that research quickly examines their practices, addressing questions of risk and safety, parental mediation and media literacy. Third, most studies examine the nature and use of websites rather than more interactive, peer-to-peer, multi-user applications (i.e. most evidence is largely focused on web 1.0 rather than web 2.0).

Research on content and contact risks is lacking in some countries, and it requires updating and deepening in most or all countries. While there is a fair body of research on content, contact and privacy risks, there is much less on commercial risks. Yet, for audiovisual and other media, exposure to advertising, product placement, sponsorship and other commercial

messages has long been of concern. This expertise should now be developed for children's exposure to online commercial content. Certain risks have still been little relatively researched, despite their importance on the public agenda. These include exposure to challenging content (e.g. suicide, anorexia, drugs, etc.), risks associated with user-generated content and online gambling. There is also relatively little research on how children (or parents) cope with or respond to online risk, with effort devoted to the incidence more than the consequences, or coping strategies, or long term effects of exposure to risk. Thus it is difficult at present to determine how far the risks associated with exposure to potentially harmful content or contacts translates into an increase in, or change in, the nature of, actual harms experienced by children (Millwood Hargrave & Livingstone, 2006).

Research on the role of parents in mediating children's internet use is lacking in a number of countries, and research on the effectiveness of parental mediation is lacking in most. Too often, questions are asked regarding parental regulation only of parents, neglecting children's responses to such regulation. Yet when research addresses both parents and children, the discrepancies in their accounts highlights the importance of understanding children's own experiences (Greig & Taylor, 1999). Where research charts parental and children's attitudes or concerns in general, it rarely explores the effectiveness of particular safety measures (e.g. use of filtering software or, even, parental media literacy). In the future, research should examine whether and when parents put safety guidance into practice, along with an evaluation of the any benefits (or otherwise). Similar observations may be made regarding the mediating role of teachers – more research is needed on teachers' skills and literacy, their mediating practices in the classroom, and the effectiveness of their role in improving children's risk awareness and online safety.

Last, we note some of the emerging issues and challenges for this new and often demanding field of research. First, time-sensitivity: research in this field becomes quickly out of date, as the technologies, institutions that promote and manage them, and children's own practices all continue to change. Consequently, even where substantial amounts of research exist, the findings must be regularly updated. It may be argued that this is a particularly transitional moment, as today's children are growing up with web 2.0 at the same time that much of adult society is still struggling with some basic issues of access and use. We greatly need multi-national research, in which one country may learn from another where appropriate, but in which the specificities of diverse economic, cultural and social contexts are also recognised. We found only two, current, longitudinal studies. Some studies are repeated a few years apart, providing the possibility for trend analysis. But more tracking studies are required to understand the wider implications of online technologies in the long term. The research agenda remains also at some distance from the policy agenda: many studies identify problems and conclude that something must be done, but they often do not focus on, or evaluate the options for, particular policy solutions. While this creates a generalised sense of concern without effectively guiding the policy agenda, we note also that determining exactly what policy windows are open at any point in time is not always easy for or accessible to the research community.

Second, challenges of theories, methods and standards of research. Children's internet use, especially regarding online risks, is a complex phenomenon. Regarding research theories and methods, we advocate the importance of multiple theoretical perspectives and multiple methods, so that the various dimensions of children's internet use can be understood in the round – including both the incidence of certain practices in the population, as well as children's own perceptions, those of their parents, and how both these fit within the context of everyday internet use. Although multidisciplinary, multimethod, contextual, and longitudinal research is particularly demanding, it remains sorely needed if we are to understand not only what children encounter online but also why, how and with what consequences. Research is sometimes poorly reported, with key information missing, or difficult to gain access to. There is scope for improving the quality, rigour and public accessibility of research evidence in this field. Interpreting findings in this field commonly draws on comparisons between offline (real-world) and online activities or risks when, say, arguing that the former are migrating to the latter, or that the latter are increasing faster than the former. Yet in the vast majority of cases, research on online activities and risks pays little attention to children's lives offline (e.g. their social networks, their parenting, their attitudes to risk-taking or coping with psychological

distress). This greatly impedes our ability to draw conclusions from the research that exists, and so represents a methodological, practical and theoretical challenge.

The final challenge is that this is a sensitive and difficult field of research. The risk agenda remains largely led by adult society, even by media-spread moral panics, and so focuses on pornography, stranger contact, violence, etc. It is insufficiently led by objective evidence of actual harm, whether criminal (e.g. incidence of sexual abuse or criminal abduction) or medical (e.g. incidence of youth suicide or self harm attempts). It is also insufficiently reflective of children and young people's own agenda of concerns (in which viruses, bullying, identity abuse, fraud spam and race hate figure much higher than pornography or even stranger danger). Moreover, it is inherent to childhood and especially adolescence to take risks, push boundaries and evade adult scrutiny, challenging both the research process and the uses of the research findings. It must be recognised that the need for more research on younger children raises some significant challenges regarding research funding, methodology and research ethics (e.g. regarding exposure to 'adult' content), as does research on the private nature of much online activity. More discrimination is needed regarding the nature of children's online activities and resources to differentiate, notably, different kinds of pornographic or violent content, and to identify the contexts within which harassing or unwelcome contact (e.g. within a chatroom, a multiplayer game, a social networking site, by email, etc) is experienced. Research must follow use – tracking online activities for new populations, younger users, new risks, and so forth, and much depends on the researchers' grasp of children's experiences, including their approach to risk.

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Endnotes

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[1] EU Kids Online is funded by the EC's Safer Internet plus Programme as a network of academic researchers and some NGOs sharing knowledge across 18 (soon to be 21) European countries (see www.eukidsonline.net)

[2] In addition to open-ended descriptions of each study, we coded whether the study was conducted in one or more countries, its funders, date of fieldwork, methods used, target group, age of children, topics covered, scope (e.g. whether a representative national sample), the language and accessibility of the report and whether the datasets is available.

[3] These are included in an online data repository which can be accessed and searched by researchers, policy makers and practitioners (on the project website). A collection policy describes what is included in the repository and the quality control criteria applied. The repository aims to be as comprehensive as possible, and the work of updating it will continue for two years.

[4] While cross-national studies were counted once in the total of 235 studies, this distribution of studies by country counts each cross-national studies several times, to capture the number of studies about each country. The repository includes a few studies from other European countries.

[5] Covering Belgium, Denmark, Finland, France, Germany, Israel, Italy, Spain, Sweden, Switzerland, The Netherlands and the UK.

[6] Bulgaria, Romania, Croatia and Turkey.

[7] Belgium, Denmark, Estonia, France, Greece, Italy, Poland, Portugal and the UK.

[8] Research users must be both able locate a research report and to read it. The norm is for reports to be published in the national language(s), but in some countries there is a trend towards publication in English.

[9] As noted earlier, this paper does not examine reports of findings that do not meet acceptable standards of research.