Chapter 5
Safety by Literacy? Rethinking the Role of Digital Skills in Improving Online Safety

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Contents

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5.1 Digital Skills and Online Safety: An Indistinct Relationship

It is generally assumed that children can avoid negative consequences from using the Internet by acquiring and improving their digital skills. These skills are part of the broader concept of digital literacy.[1] They encompass several types of skills or dimensions, ranging from basic skills to strategic skills, related to the technology of computers and the Internet, as well as to the use and evaluation of information online.[2] Due to the current characteristics of interactive—Web 2.0—Internet use, digital skills also increasingly comprise social skills and the creative skills needed to produce and upload content to the Web.[3] Some publications do not support the assumption that more skills mean fewer Internet risks. In fact they suggest precisely the opposite, namely that more skills are associated with more risks.[4]

The main questions addressed in this chapter are: To what extent do children acquire the skills needed to use the Internet safely? How do the different types of skills relate to online risk experience? How can children learn to master the skills needed to use the Internet safely?

In this chapter, we focus particularly on the situation in the Netherlands, as this country ranks among the highest scorers for Internet penetration and use, both among the general public and among young people. Dutch Internet penetration increased from 69 % of all individuals aged between 12 and 75 years in 2002 to 95 % in 2011,[5] with virtually all Dutch teenagers accessing the Internet at home.[6] Among Dutch, 9–16 year olds who use the Internet, 80 % do so (almost) every day and 56 % use the Internet in their own bedroom. More than a third of Dutch young people go online using a mobile phone or another hand-held device.[7] These high Internet access figures might implicitly suggest that children are also automatically highly skilled in using the Internet safely. In this chapter, we present some empirical findings about children's mastery of the different dimensions of digital skills. We will then explore the relationship between skills and online safety, as well as the implications for children's acquiring of digital literacy via peers, parents, schools, government and industry.

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[1] Sonck et al. 2012a.

[2] Steyaert 2000; Van Deursen 2010.

[3] De Haan et al. 2011.

[4] Livingstone and Helsper 2010; Sonck and De Haan 2012a.

[5] CBS 2012, p. 104.

[6] Livingstone and Haddon 2009.

[7] Livingstone et al. 2011.

5.2 Mastering Skills

In order to address the question of which digital skills children master, we need to distinguish between different types or dimensions of skills. Broadly, skills can be divided into three dimensions[8]: instrumental, structural/informational and strategic skills.

5.2.1 Instrumental Skills

First, there are instrumental skills, which refer to the ability to use the technology of computers and the Internet. These skills are also called operational skills.[9] They relate primarily to the ability to install programmes and click the correct buttons.

Duimel and De Haan[10] observed that almost all teenagers (13–18 years old) in the Netherlands have a mastery of the basic instrumental skills needed to add pictures to a document (97 %), move sentences within a document (94 %) and compile an e-mailing list (89 %). However, a much smaller proportion of Dutch teenagers have mastered the rather more complex instrumental skills needed to install an anti-virus programme (56 %) or a new version of Windows (54 %) or to install a hard drive in a computer (28 %). Compared with the reports from parents on their own skills, more teenagers indicate they are able to perform these basic and complex instrumental activities. The only exception is that more fathers than teenagers indicate that they are able to install software and hardware on a computer.[11]

International research corroborates the findings concerning the mastery of basic skills. The large-scale European EU Kids Online survey[12] provides an indication of mainly safety-related instrumental skills. For this study, children aged between 11 and 16 years were asked to assess their ability to perform specific tasks on the Internet. Most Dutch teenagers reported that they were able to block messages from people they do not wish to hear from (87 %), bookmark websites (85 %),

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[8] Steyaert 2000; Van Deursen 2010.

[9] Van Deursen and Van Dijk 2010.

[10] In 2001, 2005 and 2008, students from all levels of secondary education (13–18 year olds) were interviewed at an average of 50 schools throughout the Netherlands. About 1,500 children were surveyed in each wave, and in 2005 one of their parents was also surveyed ($n = 1100$). The survey was part of a broader academic research project (Young People and Culture—Jongeren en Cultuur) conducted by researchers from VU University Amsterdam. Duimel and De Haan 2009.

[11] Duimel and De Haan 2009.

[12] In the EU Kids Online survey, a random stratified sample of 25,142 children aged 9–16 years who use the Internet were interviewed during the spring and summer of 2010 in 25 European countries. In the Netherlands, 1,004 children were interviewed, partly face-to-face and partly by means of a self-administered written questionnaire. For more information about this European project, see www.eukidsonline.net. Livingstone et al. 2011.

find information about using the Internet safely (79 %) and change the privacy settings for a social networking profile (78 %). A minority of teenagers reported that they had mastered the skills to change filter settings (30 %), which illustrates once again that they are not very Internet savvy when it comes to the rather more complex instrumental skills.[13]

5.2.2 Structural/Informational Skills

The second skill dimension comprises structural skills, which relate to the unique structure of the Internet, with hyperlinks and dynamic information that need to be accessed and used differently from offline information. On one hand, this set of competences comprises formal Internet skills, or the competency to navigate the Web. On the other hand, it also refers to informational or evaluation skills, i.e. the ability to evaluate the reliability of information found on websites and to cross-reference information correctly (e.g. mentioning the source of information).

Although both teenagers and parents in the Netherlands say they check several search results to verify online information (63 and 69 %, respectively), only a minority of teenagers check more than just the first page of search engine results (32 %) or check who placed the information online when they find useful information (26 %). By contrast a majority of parents (59 and 51 %, respectively) report that they do this.[14] Walraven et al. observed similar findings in Belgium in an actual skill measurement test focusing on informational skills among secondary school students.[15] Although young people report that they are aware of the criteria necessary for evaluating information, they do not apply those criteria very often when searching for online information. The results indicated that the students did not evaluate search results or the source and the content of websites on the Internet very frequently, for example.[16] In another test involving secondary school students, it was found that websites were only evaluated in light of the relevance for the specific task to be performed, not their reliability in general. The researchers found that during the assignments, many students literally overlooked the right answer or missed the link where the answer could be found. Furthermore, students merely scanned the websites rather than reading them in detail.[17] These results suggest that young persons perform particularly poorly on informational (structural) skills. Somewhat rhetorically, the Joint Information Systems Committee concludes that young people have a poor understanding of their information needs, find it difficult to develop effective search strategies and spend little time on

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[13] Sonck and De Haan 2011.

[14] Duimel and De Haan 2009.

[15] Walraven et al. 2009.

[16] Walraven et al. 2009.

[17] Kuiper et al. 2008.

evaluating information, either for its relevance, accuracy or authority.[18] Having a mastery of basic instrumental skills does not guarantee adequate handling of content.

5.2.3 Strategic Skills

Finally, strategic skills relate to the capacity to apply digital skills in everyday life. Examples are benefiting financially from comparing products online, or saving time after checking timetables online (e.g. for trains). In such cases, people need to search for information proactively and take decisions based on this information that have consequences in real life.[19]

A specific example of strategic skills is using the Internet to compare the quality and price of products. Dutch parents, and especially fathers, compare different handsets online when they are looking to buy a mobile phone (73 % of parents; 86 % of fathers), and search online to see whether they can find an item cheaper than in a traditional shop (71 % of parents; 79 % of fathers). Their children (13–18 year olds) say they perform these comparisons on the Internet less frequently (64 % for buying a mobile phone and 52 % for online searches).[20] The differences between generations might be due to adults having more purchasing opportunities, but might also point to a more careless attitude among young people. They certainly do not support the image of young people as 'digital natives' who have an easy mastery of all aspects of digital life, while their parents, as 'digital immigrants', are merely ignorant outsiders.[21] In Dutch research among adults, performance tests revealed that young persons (aged 18–29 years) successfully completed more tasks requiring instrumental skills than older age groups. However, the younger groups performed less well than the older groups in tasks requiring informational and strategic skills.[22] The kind of skills mastered thus clearly differs with age. Children master instrumental skills, but lack capability when it comes to handling information and using online opportunities effectively.

5.2.4 Social Skills

In addition to the three dimensions of digital skills mentioned above, children also need online social skills in order to use the Internet effectively, especially given the

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[18] Joint Information Systems Committee 2008, p. 12.

[19] Steyaert 2000; Van Deursen 2010.

[20] Duimel and De Haan 2009.

[21] Prensky 2001.

[22] Van Deursen 2010.

increasingly social character of children's Internet use due to the popularity of social network sites (such as Facebook, Twitter, etc.). These online skills mainly relate to communication, self-disclosure and privacy. For example, children need to be aware of current 'netiquette' rules, such as which personal information they should and should not post online and who they should allow to see it (i.e. posting on a public website or a private profile).[23]

Although there is a lack of research on the level of children's online social skills, it has been shown (in the EU Kids Online project) that children use the Internet very frequently to communicate with others. For example, 9–16 year olds in the Netherlands go online to send and receive e-mails (77 %), visit social network sites (74 %) and use messaging services (65 %).[24] Frequent social use of the Internet does not imply that all social contacts will go smoothly. On the contrary, many studies have been conducted into the risks children face online and the harm they might encounter from using social media.[25] There is therefore also scope for improving their online social skills.

5.2.5 Creative and Production Skills

Crucial innovations in Web 2.0 include increased interactivity and the possibility of producing user-generated content, which can be disseminated online to a wide public. Consequently, the skills and knowledge to create, produce and upload content have become more important.[26]

Although there are currently a lot of online interactive and creative opportunities, it seems that the general public do not automatically use these possibilities. For example, less than a third of the Dutch adult population (aged 18+) use the Internet actively or creatively to create and upload their self-made pictures, films, music and/or written content.[27] Similarly, among children a relatively small group seem to perform activities online which involve creating new content. For example, only 13 % of Dutch 9–16-year old Internet users write a blog or an online diary, and just 15 % create a virtual character or avatar. Fewer than half (45 %) upload pictures, films or music to share with others, but it is unclear whether or not this content is self-made. In fact, most children use the Internet in a fairly 'receptive' way, in which they do not produce content themselves, for example to watch video clips (89 %) or play games (84 %).

As far as we are aware, creative skills have so far not been taken into account in research on children's online safety, yet a link has been established between basic

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[23] De Haan et al. 2011.

[24] Sonck and De Haan 2012a; Livingstone et al. 2011.

[25] Walrave 2012.

[26] Sonck and De Haan 2011; Livingstone et al. 2011.

[27] Sonck and De Haan 2012b.

digital skills and the level of online creativity. Teenagers who possess good digital skills are more active in creating new content than teenagers with poor skills. These skills are an important factor in determining which teenagers take part in online creation and which do not. This creative activity is influenced more by the level of digital skills than by the social context, the education level of teenagers or that of their parents.[28] Digital skills can thus be quite a powerful predictor of uploading user-generated content, but do they also prevent young people from getting into trouble on the Internet?

5.3 More Skills, Higher Risks

Young people are exposed to Internet risks to a lesser extent than is often generally assumed (based on media reports about ad hoc incidents). Fewer than a quarter of Dutch Internet users aged between 9 and 16 years say they have seen pornographic images online, while 15 % say they have received sexually explicit messages via the Internet (sexting). A third of Dutch youngsters engage in online contacts with strangers, of whom 6 % actually meet those online contacts in person. Finally, less than 5 % of the young people surveyed reported that they had experienced repeated bullying via the Internet.[29]

Only a minority of children who are exposed to risks actually experience harm as a result of those risks. Most young people are not upset by these experiences, but a small minority are. They report being upset most often by seeing sexually explicit images on the Internet, followed by receiving sexually explicit messages and meeting an online contact in person. Being bullied is seen as a negative experience in itself.[30]

There are some striking differences in risk behaviour between groups of young people. Young people are exposed to or elicit risks on the Internet to differing degrees. The extent to which they undergo negative experiences also varies from one group to another. Boys and older teenagers are particularly exposed to online risks, but girls and younger teenagers more often report that they find these experiences negative.

It is generally assumed that a higher level of digital skills reduces the number of online risks children experience, such as cyberbullying, grooming or violation of privacy.[31] Only a handful of studies have investigated the relationship between skills and risks. Livingstone and Helsper,[32] for example, examined the influence of skills on online opportunities and risks among 12–17 year olds in the UK. They

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[28] Schols et al. 2011.

[29] Sonck and De Haan 2011.

[30] Sonck and De Haan 2011.

[31] Hasebrink et al. 2009.

[32] Livingstone and Helsper 2010.

observed that children who have better access, wider usage and more skills seem not only to benefit more from the Internet, but also to exhibit more risky behaviour online. The researchers observed a positive relationship between online opportunities, digital skills and online risks: thus, the more positive experiences children have online and the more skilled they are, the more they also encounter risks online.[33]

Sonck and De Haan reach a similar conclusion based on data collected in 25 European countries.[34] They also investigated to what extent children's self-reported Internet skills influence the degree to which they encounter online risks. It was observed that more experienced and skilled 11–16-year old Internet users also encountered more online risks. For example, young people with a wider online repertoire and a higher level of self-reported Internet skills were found to see more sexual images online or to meet online contacts in person more frequently.[35]

Thus, contrary to the general assumption, both these studies indicate that children with more online experience and a higher claimed level of Internet skills not only benefit more from online opportunities, but also encounter more online risks. This finding should first be placed in a life-course perspective. The diversity of Internet use, the available skills and risk-taking behaviour all increase as children grow older. Young children may encounter more risks by chance, while teenagers may be looking for them consciously. During adolescence, in particular, young people challenge the boundaries of acceptable behaviour and seek the excitement of risk as part of their identity experimentation. As an example, 15-year olds might consider seeing pornography or receiving sexually explicit messages as an opportunity rather than as a risk.

Young people's evaluation of what constitutes risky behaviour is likely to be different from the judgement of adults—first and foremost their parents, but also teachers and researchers who share their evaluation that certain online activities are risky. These differences in risk perception make it difficult to interpret the relationship between risks and skills in an unambiguous way. Digital skills may well be instrumental in prompting teenagers to engage in activities that are positively evaluated by them but disapproved of by parents and others. The positive relationship between the level of digital skills and the risks that young people encounter thus warrants closer inspection.

Not being harmed by what is believed to be risky behaviour is a more clear-cut criterion for assessing negative influences of Internet use, and also for discussing the influence of digital skills. As older children report being less bothered by their experience of risks compared to younger children, the role of online maturity cannot be denied. Older children may be more aware of what they are doing, better able to foresee the potential consequences or more capable of coping with negative outcomes. Awareness, forecasting and coping are relevant capabilities for the

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[33] Livingstone and Helsper 2010.
[34] Sonck and De Haan 2012a.
[35] Sonck and De Haan 2012a.

prevention of harm from online activities. They differ from the usual indicators for digital skills. Instrumental skills, especially, are unlikely candidates for improving online safety; it would be verging on the absurd to suggest that skills such as 'moving sentences within a document' or 'compiling an e-mailing list' contribute to greater safety. Informational skills are also hedged in with ambivalence. These skills might equally well be used to search for educational material, for entertaining music or for pornographic material. At best, what are described here as online social skills would come closest to a skill base that is effective enough to prevent harm. However, these skills have not yet been adequately measured in research. In general, the issue of digital skills in relation to online safety is too ambivalent. Hence, quantitative research shows no clear influence of skills in preventing harm, and the models show very low explained variance. The conceptual issues (What are relevant skills? Can some abilities be regarded as safety skills?) have to be solved first before the effectiveness of these skills can be properly investigated.

5.4 Policy Implications for Children's Digital Safety

Empirical research has thus far produced inconclusive results with regard to the effectiveness of digital skills in keeping young people safe on the Internet. It has been found that more skills coincide with more risks and have no significant effect in preventing unwanted experiences. Based on the empirical findings presented in this chapter, we suggest a rethink of the relationship between digital skills and online risks. Young people prove to have a different perspective on risks compared to parents, teachers and regulators; improving their digital skills might therefore equally well serve as an encouragement to explore online risks further. Educators need to accept that risks exist and that these risks are part of the increasingly digital lifestyles of young people. Risk-taking behaviour is tied up with their identity experiments. Growing up in a digital age entails encountering online risks and also calls for the development of coping strategies when actual harm is experienced. Avoidance of risks might still be an important task of educators for young children, but for older children prevention from harm through coping strategies should be given more prominence. Our recommendation is to broaden the notion of skills to include the empowerment of children on the Internet when they face harm. We will reflect on the different responsibilities in this regard.

5.4.1 Young People's Own Responsibility

Young people mostly manage by themselves when using computers and the Internet. Furthermore, peers have a substantial influence on how they discover new things to do with the Internet. Mutual learning and teaching practices between

peers are common.[36] Such peer-to-peer teaching might improve children's skills in coping with negative experiences online; on the other hand, peers might also encourage each other in undertaking risky online behaviour (e.g. viewing sexual images online).

Exposure of young people to online risks cannot and should not be entirely avoided. However, it is important that if children and teenagers actually feel threatened on the Internet they know where to find help and advice—and, perhaps more importantly, that they should not feel embarrassed about discussing negative experiences openly with others. Offline, they can contact peers, parents or teachers. But online, too, a number of initiatives have been launched to support young people in using the Internet safely. In the Netherlands, for example, there is the website Helpwanted where young people can report online sexual abuse.[37] Additionally, several organisations, including the police, have developed an online reporting button for all kinds of Internet problems. These initiatives can help raise awareness among young people of the opportunity to talk openly about their online experiences.

5.4.2 Mediation by Parents

Children are learning to use computers at an ever younger age, and increasingly also mobile devices, such as tablets and smartphones, by playing with them at home.[38] Consequently, we can attribute a major part of responsibility for children's online safety to parents. Most parental attention is given to 10–11 year old; it is lower before this age and decreases thereafter.[39] Younger children are more susceptible to negative online experiences and more dependent upon their parents for online safety. Exposure to online risks increases during adolescence, but this exposure does not necessarily result in harm. Parents should therefore focus less on avoiding such exposure altogether among older age groups. There are limits to what parents can achieve with these groups, as older teenagers turn away from parents in order to build their own identities and establish their own peer culture. However, this is no reason not to be interested and involved in their digital lives. This involvement and mutual trust can provide a basis for ongoing discussions and thus for improving the online safety of children and teenagers.

Parents can mediate their children's Internet use in several ways. Previous research has found that parents mostly use one or more of the following strategies: active mediation, applying technical restrictions, setting rules about content restrictions and/or monitoring Internet use.[40] By actively mediating children's

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[36] De Haan and Huysmans 2002; Kalmus 2012.

[37] www.helpwanted.nl

[38] De Haan and Pijpers 2010.

[39] Hasebrink et al. 2009.

[40] Livingstone and Helsper 2008; Sonck et al. 2012b.

Internet use, parents can give advice and suggestions on using the Internet safely. They discuss potential risks and the harm that can be experienced online. Applying technical restrictions involves using filter software or other systems that block Internet access. Setting rules about content means that parents restrict which websites their children can access or decide whether their children can have a social network profile. Finally, monitoring entails checking the history of websites visited, what messages children have posted or what personal information they have published online.[41] Most of these mediation strategies contribute to the development of skills. Children learn which situations to avoid, what information to ignore and which persons not to 'like' on social network sites. Successful mediation contributes to more awareness of potential problems, better anticipation of risky situations and improved ability to cope with unpleasant events. In short, it contributes to the empowerment of young people.

A possible impediment for parents in seeking to mediate their children's Internet use adequately might be their own digital skills. A lack of these skills is more apparent in countries that occur late on the Internet diffusion curve, such as Estonia,[42] compared to countries that appear early on the curve, such as the Netherlands, where parents are a better source of advice in learning to use the computer.[43] On the other hand, parents everywhere are becoming more familiar with using the Internet. This increasing knowledge may be sufficient to enable them to guide the Internet use of young children, but probably falls short in guiding teenagers' use. Teenagers are often more familiar with social network sites, games and other platforms than their parents. For these media, parents may need to be more aware of which problems their children might face and need more knowledge about how to help them deal with them.[44]

Another obstacle that applies to restrictive mediation and monitoring strategies, in particular, relates to the rapid spread of new technologies and devices for accessing the Internet. As more and more children use their own computers in their bedrooms, and are able to be online any time and anywhere using tablets and smartphones, it becomes increasingly difficult for parents to check and restrict their children's online activities. Consequently, active mediation may become more important in order to empower children to use the Internet safely. In the same way that children need to learn to cope with negative experiences offline, they also need to learn to do so online.

Supporting parents in protecting minors acquired a stronger legal basis with the United Nations Convention on the Rights of the Child, which came into effect in 1990 and was subsequently ratified by almost every country in the world. The Convention sets out the civil, political, economic, social, health and cultural rights of children. It gave governments a responsibility to engage with child-rearing

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[41] Livingstone and Helsper 2008; Sonck et al. 2012b.

[42] Kalmus 2012.

[43] De Haan and Huysmans 2002.

[44] De Haan and Livingstone 2009.

practices and a formal obligation to support parents. In 2011, the European Parliament and the Council issued and approved a new legislative resolution on combating the sexual abuse and exploitation of children, as well as child pornography.[45] In addition to prescribing higher sanctions for perpetrators, the European Parliament realises that making the Internet safer for children also means raising awareness among children and parents about the dangers of the Internet, and that it is necessary to talk about these issues within families.

5.4.3 Support from Schools

Schools can play a role by teaching skills to children and raising awareness among parents about children's online safety.

Children learn all kinds of skills at school, related to reading, writing and mathematics, but also to safe behaviour in different situations (e.g. traffic, sexuality, etc.). One option would be to integrate all aspects of digital skills in one course, but it would also be possible to cover the various skill dimensions in different courses. Dealing with online privacy issues might require different skills from those needed to deal with cyberbullying or with sexually oriented risks online. It is crucial that schools not only target older (e.g. secondary school) students, but also younger (primary school) children, as the age at which children first use the Internet continues to reduce. In most European countries, online safety is part of the obligatory school curriculum. However, there are exceptions, such as the Netherlands.[46] As a consequence, schools might differ greatly in the extent to which they adopt online safety in their school programmes.

In addition, since it has been found that two-thirds of Dutch parents were not aware of their children's negative experiences online,[47] schools could play a greater role in raising awareness, for example by organising information meetings for parents. It is important to reach not only those parents who are already very aware of their children's experiences, but also those who are not, or to a lesser degree. Schools could also report bullying behaviour among children, as it seems that those who are bullied offline are also often bullied online.[48] Also, the value of peer-to-peer teaching could be more effectively resourced and integrated as part of media education in schools.

One potential impediment to school support for safer Internet use by children is the lack of sufficient knowledge and skills among teachers. Although they seem to

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[45] For more information, see Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on combating the sexual abuse and sexual exploitation of children and child pornography, and replacing Council Framework Decision 2004/68/JHA (OJ L 335/1, 17.12.2011).

[46] Eurydice 2010.

[47] Sonck and De Haan 2011.

[48] Livingstone et al. 2011.

be catching up in terms of their instrumental skills, their more advanced skills may still be deficient. However, there is a lack of research on the mediating role of teachers. New research should focus both on teachers' digital skills and literacy (including their training needs) and on their mediating practices in the classroom.[49]

5.4.4 Co-regulation by Government and Industry

Although governments mostly consider the Internet to be a domain which they cannot or should not regulate closely, the government in the Netherlands explicitly seeks to protect minors from potentially harmful effects of media, including the Internet.[50] For example, under Dutch law, the possession and viewing of child pornography is illegal. Moreover, since 2010, the contacting of minors by adults for sexual purposes (i.e. grooming) has been a criminal offence.

As there are already a lot of ad hoc initiatives to improve digital literacy and online safety of children, the primary task of a government may be to continue, improve and coordinate these initiatives. In the Netherlands, the Ministry of Education, Culture and Science launched a project in 2008 (*Mediawijzer*) aimed at bringing together all the available expertise about media literacy. This turned out to be particularly difficult, since the issue of children's online safety is a responsibility of several ministries, each with a different focus. For example, the Ministry of Security and Justice deals with safer Internet use and illegal behaviour; the Ministry of Education, Culture and Science focuses on media literacy projects and social safety in schools (e.g. protocols for combating cyberbullying); the Ministry of Security and Justice deals with privacy issues; the Ministry of Economic Affairs addresses misleading mobile services and other consumer issues and the Ministry of Health, Welfare and Sport is concerned with youth programmes and problems within families. Such governmental fragmentation does nothing to contribute to an integrated approach to children's online safety.

Given the global character of the Internet, it is crucial that governments and industry cooperate at an international level. Through co-regulation they could and should work proactively on issues concerning online safety. An important development in this regard is the recent establishment by EC Vice-President Neelie Kroes of an industry coalition of 28 leading Internet companies in Europe to take action in five specific areas in a commitment to make the Internet a better and safer place for kids: (1) Simple and robust reporting tools; (2) Age-appropriate privacy settings; (3) Wider use of content classification; (4) Wider availability and use of parental controls and (5) Effective takedown of child abuse material.

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[49] De Haan and Livingstone 2009.
[50] TK 2010.

5.4.5 Conclusion and Discussion

This chapter has shown that although children may have the reputation of being Internet-savvy users, there is substantial doubt about their actual skill levels. On somewhat closer inspection, they seem to rely on their fathers for more complex instrumental skills, and lack sufficient capability to handle information and effectively use a wide variety of online opportunities. Furthermore, their online social skills are in need of improvement and their creative skills need to be strengthened if they are to become content producers themselves. As children grow older their digital skills increase, but so does their online risk behaviour. Living in a mobile youth culture has brought their identity play and associated risk-seeking behaviour to a wide variety of online platforms.[51] Children with more online experience and a higher claimed level of Internet skills not only benefit more from online opportunities, but also encounter more online risks. Empirical research has also found no significant effect of digital skills in preventing unwanted experiences.

These unexpected findings give rise to reflections both on the research methodology and the policy implications. In this chapter we have suggested that a careful examination of conceptual and measurement problems in relation to digital skills is needed. The wide variety of these skills related to participating in different online settings is in need of better definitions. Which safety skills are needed to keep children safe on the Internet, and are these the same for every platform or application? As quantitative research stumbles along with rather crude measurements, a closer examination through qualitative research might shed more light on the protective potential of digital skills. An exploration by way of open interviews seems appropriate and might yield better measurement instruments for quantitative research.

Notwithstanding the outcomes of empirical research, improving digital skills is still seen as a form of empowerment and a possible contribution to online safety. It is still important to strengthen young people's sense of responsibility for their online behaviour. For young children, protection by parents seems more appropriate, although they could also improve the online agency of their children. Most parents mediate their children's Internet use, but many of them might be uncertain about the most appropriate approach. A minority of parents are unable or unwilling to act, and their children might be the most vulnerable online. Luckily, parents are not on their own. A web of advice has been built around parents, raising their awareness and knowledge and skill levels is seen as relevant by both policymakers and industry. Teachers are in a vitally important position, both for improving children's skills and raising awareness among parents and stimulating strategies to keep their children safe. With combined efforts, it seems clear that online safety will benefit from digital literacy.

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[51] Castells et al. 2007.

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