INTERNET THROUGH THE EYES OF 11-YEAR-OLD CHILDREN: FIRST-HAND EXPERIENCES FROM THE TECHNOLOGICAL ENVIRONMENT CHILDREN LIVE IN

Harri Oinas-Kukkonen
Department of Information Processing Science
University of Oulu
Finland

Heli Kurki
Department of Information Processing Science
University of Oulu
Finland

Abstract: *The aim of this research is to obtain a deeper understanding of children's own views and experiences of using the Internet, and their attitudes towards parental supervision and the technological environment in which they are growing up. This article reports on a survey of Internet use among the fifth-grade pupils in ordinary Finnish schools. The population studied was a selected sample, and the data were analyzed both statistically and by qualitative methods. Nine out of ten children are regular Internet users, and every second child uses the Internet daily. The contemporary Internet seems to be a means for social interaction for girls and for playing games for boys. In more general terms, the Internet serves as a different kind of information vehicle, depending on the user.*

Keywords: *Internet use, Web, children, survey.*

INTRODUCTION

The Internet can serve as a source of information and entertainment, a place for creating and maintaining personal contacts, as well as a way to add a new dimension to studying and learning. However, children can unexpectedly face undesirable content on the Internet. At the same time, new ways of advancing the harmful aspects of Internet technology are taking place continuously. In public discussion, children's Internet use is frequently linked with topics such as pedophilia, Web addictions, declining social skills, emotional impoverishment, failure to distinguish between fact and fiction, aggression, and introverted behavior. It has become clear how important it is for children to learn from an early age to be critical in evaluating and interpreting the credibility of sources of information. Most studies on children's use of the Internet to date have approached it from an adult viewpoint, for example, from legal restrictions. Less attention has been paid to children's own views and experiences. The anxiety of the general audience still lies predominantly in the dangers posed by the Internet's content *per se*, whereas only a few seem to regard children's welfare as being the primary matter (Friedman, Hurley, Howe, Felten, & Nissenbaum, 2002). The aim of this research is to obtain

a deeper understanding of the *children's experiences* of using the Internet and their attitudes towards parental supervision and the technological environment in which they are growing up.

Previously, scientific research has concentrated largely on examining the technical aspects of the regulation of Internet content (Ho & Lui, 2003). Although various technological applications exist for filtering or blocking certain forms of Internet content, parents do not take advantage of these, probably because they either do not know enough about the dangers of the Internet or their technical skills are inadequate for such applications (Shoniregun & Anderson, 2003). In any case, technologies are evolving so quickly that many of the solutions to these concerns available today are quickly becoming outdated.

Chat and instant messaging, for instance, are especially challenging technologies, since they easily lead children to make new friends via the Web while, at the same time, may offer a false sense of security that may induce children into meetings in the real world that are detrimental or even dangerous for them in one way or another (Shoniregun & Anderson, 2003). The content found on the Internet can pose greater dangers to children than even that offered by television, movies, or music; the latter media are subject to at least some degree of supervision and legal regulation, whereas the Internet is largely unsupervised, unrestricted, and open to users of all ages. It also seems that by virtue of its interactive nature, the Web is capable of binding the user to it more efficiently than the traditional media (Mustonen, 2001).

This article will report on a survey seeking a deeper understanding of Internet use among children about 11 years old (fifth-grade pupils in Finnish schools, which corresponds with the 6th grade in the United States) and the dangers that they perceive in it. This article is structured as follows: The related research is discussed in the next section. Next, the research design will be explained, followed by the results regarding opportunities and uses of the Internet and skills in doing. Then, children's experiences of Internet use are recounted. The final two sections address the results, compared with those from related research, and draw conclusions.

RELATED RESEARCH

Rideout, Roberts, & Foehr (2005) studied both quantitatively and qualitatively the media use of 8- to 18-year-olds in the United States.[1] They report that the kids and teens go on-line for an average of 48 minutes per day, spending most of the time playing games, instant messaging, and visiting Web sites. They seemed to identify a significant divide in the quality and nature of the Internet use between major racial and socioeconomic groups. In general, the youth live media-saturated lives, spending daily an average of 6 hours and 21 minutes with media, such as watching television, listening music, using computers outside schoolwork, and playing video games. According to Rideout et al., those who received the poorest grades in school spend more time with video games and less time in reading than their peers. In spite of this, the majority of young people say that their parents do not impose any rules on them regarding their use of computers or other media. Overall, Rideout et al. suggest that not only are all the aspects in the media space constantly changing, but the pace of change is accelerating as well. Media and technology seem to be morphing and merging, forming an ever-expanding presence throughout daily environments. For instance, oftentimes children may be watching a television program or playing a video game while simultaneously working on the computer. Today's youth seem to become masters of multitasking.

Ito et al. (2008) studied qualitatively young people's participation in the new media ecology.[2] Young people seem to use friendship-driven and interest-driven practices in their on-line participation, which have very different social connotations. The friendship-driven practices extend the friendships of their familiar contexts, such as schools and organizations, whereas interest-driven practices aim at finding new peers outside the boundaries of their local community. The friendship-driven practices, which might be called "hanging out," is always-on communication with existing friends, and it may, for instance, encourage teens to initiate the first stages of a relationship. The integration of friends into the infrastructure of social network Web sites has transformed the meaning of friendship. On the other hand, the interest-driven practices may help distribute the young people's works to on-line audiences and to develop new forms of visibility and reputation. Adult participation is more welcome in the interest-driven practices. In both practices, however, the youth create and navigate new forms of social behavior. In this process, they may start "messing around" with new forms of media and technology, using trial and error approaches to create, share, and customize content, and to receive feedback from others on-line. This immediacy and breadth of information seems to lower barriers in self-directed learning. Messing around is often a transitional stage between hanging out and more interest-driven participation. Others "geek out" and dive into an interest or talent. This is highly social and engaged participation in Internet communities, but primarily not driven by local friendships. Adults are not automatically considered as experts in Internet communities. In general, participation in these social activities seems to have special powers to shape on-line behaviors, and peer-based learning, and development of social norms in negotiation with their peers seem to characterize the modern use of the Internet by young people.

Hagen (2007) discusses questions related to "negotiations" on media use, in particular between children and their parents. Such negotiations involve how much and for what purpose the children seek to use television or the Internet. According to Hagen, new media intensifies the pressure on parents to monitor and regulate their children's media use.

Staksrud, Livingstone, & Haddon (2007) studied European children's use of on-line technologies. They note that most European research concerns teenagers. A high proportion of the research on younger children is qualitative in nature, whereas little research on younger children addresses questions of on-line risk. Too often questions are asked regarding parental regulation only from parents, neglecting children's responses to such regulation. Children's Internet use is a complex phenomenon and children's own perceptions deserve more research. Moreover, research on social networking appears to concentrate on just a few countries. Most research is largely focused on the older generation of the Internet, whereas there seems to be little evidence thus far regarding the Web 2.0 or platforms other than personal computers for Internet access. Even if the field commonly draws on comparisons between off-line and on-line activities, the vast majority of research on on-line activities focuses attention on children's lives off-line. Most importantly, there are still only a few longitudinal studies. Based on the same research project, Lobe, Livingstone, Olafsson, & Simões (2008) suggest best practices for research into children and on-line technologies.

Staksrud and Livingstone (2009) discuss teenagers' learning to anticipate and cope with on-line risks. They suggest that most children seek help from their friends or ignore the bad experiences, in most cases also excluding any adult involvement. Gender and age seem to affect risk management strategies. In another study conducted in the United Kingdom, Livingstone and

Helsper (2007) provide quantitative evidence for the existence of the digital divide, stating that age, gender, and socioeconomic status affect the quality of access to and use of the Internet.

Dunkels (2007) studied qualitatively the perceptions of the Internet use by children in grade six. She concludes that the Internet seems to enhance children's lives rather than to have a negative impact on them. Many children see their opportunities and affordances increase rather than express a great deal of anxiety; other children simply are not as impressed with the Internet potential. Children know what the dangers are but do not express much fear for themselves and think that these downsides are not immediately present in everyday use of the Internet. Negative aspects of on-line activity include unwanted content and technical problems, but children seem to have developed implicit counter strategies against the various downsides. Most often these are developed together with peers or alone, with very little adult input. Young people's Internet use seems to be dominated by local applications linking up with people geographically close to them.

RESEARCH DESIGN

This research focused on the fifth-grade pupils, aged approximately 11 years, at several Finnish schools. Students of this age can be expected to be capable of coping with a written questionnaire and expressing themselves in response to open-ended questions. Before this survey was applied, the conceptual validity of the survey vehicle was addressed by making a careful study of earlier works and the concepts used in them.

The survey was carried out during February and March 2006 in the city of Raahe in Northern Finland. Raahe has 12 elementary schools, with a total population of 264 fifth-grade pupils. The principals (rectors) of these schools were contacted by phone or e-mail and asked about their willingness to take part in the research. Their reactions were favorable and encouraging. They reported that use of the Internet had been discussed frequently at their schools and that it was regarded as both extremely valuable and highly problematic. Eleven of the 12 schools agreed to take part in the study, implying a potential sample of 242 pupils for our survey. Any child, or his or her parents, could opt out of the survey. Thus, the sample is a selected sample rather than random sampling. The data were analyzed both statistically and by qualitative methods.

Instructions were prepared for the teachers and an accompanying letter for the parents. Every effort was made to ensure that the questionnaire was easy to understand and relatively quick to answer. The wording and layout were pretested on a separate group of respondents and then tested on the pupils at one of the sample schools in January 2006. This pilot test demonstrated that the questions were fully understandable.

The survey was conducted after the teachers had obtained signed consent forms from all parents. This was regarded as particularly important in view of the young age of the pupils. It was decided that the children should complete the questionnaire during school time so that the teachers could ensure that the students answered the questions independently. The teacher double-checked the signed consent forms received from the parents and asked the pupils individually whether they were willing to take part. One of the authors attended the questionnaire completion in six of the schools, whereas the teachers took care of this in the other five schools.

The questionnaire contained 19 main questions, most of which included subquestions. The 15 structured questions were aimed at eliciting quantitative information on experiences of Internet use, employing a 5-step Likert scale for the assessment of attitudes, while the 4

open questions were designed to obtain a more profound insight into the children's experiences and to give the children an opportunity to express their views in their own way.

The pupils were encouraged to ask for help if there was anything in the survey that was unclear. They were also told that the authors of the questionnaire were interested in the pupils' own experiences and opinions, and that it was not necessary to answer all the questions. They were assured that it would not be possible to identify individual pupils in the final report. All answers were treated confidentially and they went directly to the researchers without the teachers examining them.

All of the completed surveys were included in the analysis. The few unclear points in the replies concerned mostly situations in which the pupils were asked to choose just one alternative. We deleted from analysis those responses to individual questions in which more than one alternative was indicated. The other challenge in interpretation was mainly isolated cases of illegible handwriting. In general, the pupils managed to answer the questionnaire very carefully. The replies to open questions were copied word for word into a separate program and then categorized by using qualitative methods of content analysis. The questionnaire was in Finnish, and all the children were fluent in Finnish. The responses presented in this article as results are English translations from Finnish completed by one of the authors, but they attempt to be faithful to the students' meanings.

We could not find evidence that the teacher or researcher in the classroom influenced the results. The metrics employed appeared to be well-suited to the group of subjects and thus to measure what had been intended. Although the children did not appear nervous at the data collection time, it is impossible to exclude the influence of this or of occasional carelessness. Admittedly, some factors connected with the measurement of children's opinions, attitudes, and beliefs in numerical terms can detract from the reliability of the results to some extent. Children are not always conscious of their own feelings and perhaps have never stopped to think about their feelings with regard to certain matters prior to seeing them in the questionnaire. Their interpretations of their own opinions can also vary with their moods, their environment, or the point in time. Children may also be inclined to consider whether their answers are socially acceptable, whether they conform to the expectations of the person designing the questionnaire, or whether they might prove too shocking. Thus, the results should be regarded as indicative of trends rather than as the basis for deriving far-reaching conclusions.

OPPORTUNITIES, SKILLS, AND USE

The questionnaire was completed by 229 pupils, giving a response rate of 94.6%. The responses were fairly equally divided between girls (50.7%) and boys (49.3%).

Opportunities

Almost all respondents (94.8%) had access to an Internet connection at home, mainly somewhere other than their own room (72.2%). Four of five students (80.3%) used the Internet primarily in a room that was open to the whole family.

Almost half of the respondents (48.2%) used the Internet at least once a day, and 88.9% did so at least once a week. Only 6.2% claimed that they rarely ever used it. The most typical

duration of use was 30–60 minutes a day (44.6% of the respondents), while 8.6% spent more than 2 hours a day on-line. The duration of use was slightly lower with girls than with boys ($\chi^2 = 8.969$, $p = 0.030$).

Even if the Internet is most often used in a room that is open to the whole family, most of the kids report being alone when using the Internet almost always (54.4%) or at least rather often (79.9%). Nevertheless, some of them also use the Internet at times with their friends (39.2%) or with siblings (24.2%). Very few of them use it often with their father (3.3%) or mother (3.3%).

Parents' absence from their children's Internet use simply may be related to parents being busy with work or home-related activities. Another partial explanation would be that parents feel that they have not yet learned to use the Internet well enough.

Skills

The children often claimed that they were better at using the Internet than their parents. Two thirds of them (66.8%) believed that they were more skilled than their mother, and half (50.9%) were of the opinion that they were more skilled than their father. Moreover, 93.8% of respondents claimed that the Internet was easy to use; 92.0% felt that it was easy to learn to use.

The respondents had a fairly clear picture of what content was not appropriate for their age and what details about themselves they should not reveal. Many of them were wary of contacts with unknown people. A few also realized that safe Internet use involved proper data protection in a technical sense, including virus elimination, firewalls, and careful handling of spam e-mail. A selection of opinions on this is presented in Table 1.

Use

The pupils were well versed in using the latest forms of communication to contact their friends. While little use was made of e-mail, a great deal of communication took place via instant message services, such as MSN Messenger or the ii2 community.[3]

More than half of the children (52.1%) talked to their friends via chat or message services daily, whereas 73.0% talked to their friends over the Internet at least twice a week. The median was twice or more times per day. One fourth (27.0%) talked with their friends over the Internet once a week or less. Meanwhile, girls made more frequent use of e-mails ($\chi^2 = 11.600$, $p = 0.003$). More than a half of the respondents (53.2%) used e-mail less than once a week, comprising 42.5% of the girls and 64.5% of the boys.

Practically every second child (48.0%) played games on the Internet on a daily basis, whereas three out of four did so at least on a weekly basis (72.6%). The boys played Internet games more frequently than the girls ($\chi^2 = 14.200$, $p = 0.001$), with 60.4% of the boys playing daily as compared with 35.7% of the girls. Thus, the boys would appear to lean towards social interaction through game playing, whereas the girls use the Internet more often for communication purposes than for games.

Almost half of the respondents (47.3%) surfed the Internet at least once a day. About one fourth (24.1%) surfed the Internet less than once a week.

A fourth of the respondents (25.2%) listened to music on the Internet on a daily basis, including one in three of the boys (33.3%) and one in six of the girls (17.0%). The boys made more use of the Internet for their music interests than the girls ($\chi^2 = 10.333$, $p = 0.006$).

Table 1. **"**What things do you think you should bear in mind so that using the 'Net will be as safe as possible?"*

Girls: *"I would follow the rules of the Internet and not go to all kinds of pages."*

"I don't give my contact data to anyone else."

"I don't talk to strangers."

"I only go to pages that I know are not shocking."

"Switch the continuous anti-virus program on to check the computer when using the net."

"I mustn't download anything that seems suspicious or which I know nothing about without permission."

"Whenever I go anywhere I must know how to get out again."

"I mustn't give any data on myself, and Mommy comes to look from time to time to see what pages I'm on."

"My parents should keep an eye on what I'm doing."

"I mustn't go to stupid or dangerous pages that might have viruses."

"I mustn't promise to meet people I don't know."

"I don't go chatting; I only talk with friends I know."

Boys: *"I don't give names, addresses or passwords."*

"I only visit pages I know."

"I mustn't download games, music or programs from the 'Net, because of viruses."

"I mustn't go to pages that are unsuitable."

"The child lock, firewall, and anti-virus program."

"I mustn't go to strange pages or open spam mail."

"I mustn't go to foreign pages."

"Keep hackers under control, viruses away and avoid information from the wrong places"

"I mustn't give away personal data or go looking at violent pages or videos."

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* In Finnish, the word *'Net* is often used to refer to the Internet. In practice, this most often refers to the Web.

One in five (19.8%) searched for information not related to schoolwork on the Internet on a daily basis and almost a half (46.2%) did so at least once a week. Here again the frequency of use appears to be sex dependent, the boys searching for information slightly more frequently than the girls ($\chi^2 = 7.404$, $p = 0.025$).

The children nevertheless made relatively little use of the Internet to obtain information related to their hobbies or interests. Only 15.5% did this once a day or more frequently, and they did this less than once a week in 69.1% of cases. Finding information related to hobbies or other interests was more common among the boys ($\chi^2 = 10.999$, $p = 0.004$) than among the girls (21.7% vs. 9.6%, respectively).

Children of this age made rather little use of the Internet to support their schoolwork, with only 5.9% of the respondents doing so on a daily basis. The vast majority, 79.0%, did so less than once a week or not at all.

A small number of pupils discussed the other uses they made of the Internet. In doing so, the girls mentioned the construction and update of home pages, and searching, storing and editing of pictures, as well as their interest in horses. Meanwhile, the boys mentioned game and software development as well as watching videos.

EXPERIENCES OF INTERNET USE

Enjoyable Experiences

The activities that the children evidently enjoyed most were chatting with their friends, looking at picture galleries, playing games, e-mail, searching for facts, listening to music, and watching videos. Table 2 provides some of these interests in the students' own words.

Frightening and Shocking Experiences

One in five children (19.7%) said that he/she had found some frightening material on the Internet. Some (4.5%) reported that they had been in this kind of a situation often. Thirty-three children replied to the open question on frightening experiences (i.e., "I was frightened when …"). For representative replies, see Table 3. Most of the frightening experiences were connected with death, violence, and crime, often in the form of videos, but also stories circulating as e-mails. Some had been frightened by seeing edited pictures of themselves or others that they know that had been placed on the Internet without permission. The boys were also worried about viruses and the fact that using the Internet costs money.

Almost a third of the children (29.9%) had found some shocking material on the Internet, but they reported this was a rare occurrence. There were 53 children who replied to the question "I was shocked by the fact that …" (see Table 4). The greatest numbers of shocking experiences

Table 2. "What is there about using the 'Net that is pleasant, amusing, or interesting?"

Girls:
"There are lots of things especially for young people: picture galleries, games pages, the Messenger and so on."

"Games and chatting with friends are fun when you know the people.

"You can look for information about things that interest you."

"It's great fun to chat on the MSN Messenger, play games on the 'Net and search for pictures and edit them. PS. I don't mean making fun of them."

"You can visit your own pages and your friends' pages or open your e-mail."

"Games and the Messenger, ii2 and the Habbo Hotel."

"You can watch videos."

"Amusing games, interesting stories, you can find information, and it's fun to do extra exercises for school."

"You can listen to music and find the words to the songs or other information, and you can play games."

"You can find out all sorts of things / learn to use the net better."

Boys:
"Watching films, watching sports etc., playing games, looking at the sports pages

"You can download music, find things out, learn things and chat with your friends."

"The Messenger and ii2, and games."

"You can go and look at funny pictures and videos."

"Well, the games, for instance, and the forums where you can meet other people."

"Habbo Hotel, for example, where you can have fun or chat with friends."

"Among other things I read the news and look at my own e-mail."

"When you can learn English and find out information for school."

Table 3. "I was frightened when …"

Death, Violence and Crime:	*"When a horror video came."*
	"When people kill each other and things like that."
	"It showed pictures of accidents in which people died."
Stories Circulating as E-mails:	*"There were some chain messages that were frightening."*
	"An e-mail in which you had to find differences between pictures and then a monster suddenly appeared, but I'm not frightened of it any longer!!! ☺
	"A man appeared in the middle of an e-mail, for instance, and his mouth was bleeding."
Edited Pictures Placed on the Internet Without Permission:	*"There was once a picture of a car that was driving along when suddenly an awful head appeared on it."*
	"Some sort of awful wallpaper picture."
	"A monster attacked the screen, and it was a girl who had been attacked by an animal."
	"When some pictures had been edited without permission."
Viruses and the Fact that the Internet Costs Money:	*"When I thought the computer had a virus, but it was only a joke."*
	"When the computer got a virus."
	"That it might cost money to look at something."

were reported in connection with random browsing, in particular, related to sex and pornography. The girls had also been affected by accounts and pictures of cruelty to animals, and some children had been shocked by attempts at bullying and other forms of unnatural behavior. Many had suffered surprises due to Web addresses that closely resembled each other.

Altogether, 125 children answered the question "What is there that is shocking, frightening, misleading or unpleasant about using the 'Net?" A representative selection of replies is given in Table 5. Although this question was not asked directly in connection with the one on the frequency of shocking and frightening experiences, the pupils still mentioned sex and pornographic material as the most unpleasant things. The boys had more experiences of this kind than the girls. They also mentioned viruses and other forms of computer crime as disturbing features. Unexpected or unnatural behavior, such as bullying, death, violence, and crime, often in the form of video material, were once again reported.

Telling Others About Unpleasant Experiences

The children clearly wished to share their unpleasant experiences of Internet use with someone. Only one in eight of them (13.2%) said that they would not tell anyone about the things that frightened or horrified them. The pupils preferred to share their unpleasant experiences with their friends (82.2%), the girls much more often ($\chi^2 = 20.379$, $p < 0.001$) than the boys (93.5% vs. 69.1%). It may well be that these 11-year-old boys were behind the girls in their social development to such an extent that unpleasant experiences were not an "acceptable" topic of open conversation among them. Most of the children were also prepared to tell their parents about such experiences, even though 60.2% of the parents had not

Table 4. "I was shocked by the fact that …"

Pornography:	*"Disgusting pictures, that is, all those porn pictures and the like."* *"When I was playing games with a person I didn't know he offered me sex on the 'Net."* *"Once when I sent out a search for my own name on the Google I suddenly got a porn picture. I shut it off straight away and haven't gone there since."* *Even ordinary pages have porn on them, if you search under 'animals' or 'the world of animals,' for instance."*
Other graphics:	*"There were horrible, violent pictures there."* *The pictures were crude."* *"They show such stupid pictures on the 'Net."*
Cruelty to animals:	*"I got a chain e-mail telling how to put kittens into bottles for the rest of their lives to make decorations out of them."* *"Some sort of pictures of cruelty to animals."* *"It was about having fun murdering and being cruel to animals."*
Bullying or unnatural behavior:	*"The pages belonging to people who had been bullied at school had stories with threats to kill somebody."* *"Some people are bullied in the conversations."* *"One weirdo asked me personal things that don't concern other people, and there are pedophiles there."*
WWW addresses:	*"I was going to one picture page but made a mistake in the address and got a lot of really stupid pictures."* *"When I was going to ii2 I wrote iii2 by mistake and it was some kind of sex page."*

asked their children to tell them of unpleasant experiences connected with Internet use. Three fourths of the children (74.0%) indicated that they would tell their mother, the girls more often than the boys ($\chi^2 = 7.264$, $p = 0.007$). Slightly fewer were willing to share these experiences with their father (65.8%). Only one out of twelve of the children (8.2%) thought that they would inform the police about illegal material discovered on the Internet, whereas one out of ten (10.6%) would be prepared to tell about this to their teacher. For some reason, the Internet seems to be thought of as a virtual world only in which illegal or harmful deeds become more acceptable than in the real world.

As many as 78.8% of the respondents reported visiting very rarely or not at all pages that their parents would not have wanted them to visit, and even the others only infrequently or sometimes. The girls visited these pages less often than the boys ($\chi^2 = 13.683$, $p = 0.008$). Four of five children (82.2%) visited very rarely Web pages that, in their own opinion, were not worthwhile visiting, and nine out of ten (89.9%) reported that they would very seldom return to such pages of their own accord.

The more frequent Internet users told their mothers about their experiences less frequently than did those who used it less often ($\chi^2 = 8.917$, $p = 0.030$). About two thirds (65.6%) of those who used the Internet on a daily basis told their mothers of their shocking or frightening experiences, as opposed to 80.2% of those who did so on a weekly basis and 90.9% of those who did so one to three times a month.

Table 5. "What is shocking, frightening, misleading, or unpleasant about using the 'Net?"

Pornography:	*"There are also things on the 'Net that are not for people of our age.*
	"All the stupid adult things, like the over-18 pages."
	"It's unpleasant and upsetting to go by accident to a page where there is someone naked."
	"Sex (pages), porn pages, stupid pages, viruses.
Viruses:	*"Spam mail and viruses."*
	"Viruses are unpleasant, for example, and sometimes frightening."
	"Hackers, viruses, and hidden advertising."
	"Viruses can come from there."
	"There are people on the net that copy other people's pictures and spread viruses.!
Unexpected or unnatural behavior:	*"Someone could fool me into giving my own name or address or something by pretending to be someone else."*
	"Deception, at least, and pointless messages."
	"There can be people who might take advantage of my data."
	"Some people on the ii2 make nasty remarks."
	"One frightening thing about the net is that there are strange people around who can send nasty messages and so on."
	"All the people who ask for pictures and the like on the net, that's something unpleasant."
Death, Violence, and Crime:	*"If you go to the games pages they can lead to other pages that are frightening or violent."*
	"There are frightening videos on it.
	"Horror games."
	"Horror films such as those for people over 15 or over 18."
	"You sometimes find brutal videos or wrong information."
	"There are pedophiles around and all sorts of drug pushers."

There was also a difference in reporting based on the duration of an average use situation. Six of seven (86.5%) of those who used the Internet for less than half an hour at a time told their mothers of their experiences, whereas only every second (50.0%) of those who used it for more than 2 hours at a time would do so ($\chi^2 = 9.083$, $p = 0.029$). Those who spent less than a half an hour on the Internet told their fathers more often about their experiences than those spending more than two hours ($\chi^2 = 12.015$, $p = 0.007$), the figures being 74.3% and 30.8%, respectively.

PERCEPTIONS OF PARENTAL ATTITUDES AND CONTROL

Parental Controls

According to the children, a little less than two in five parents (37.6%) at least sometimes taught their children about using the Internet, whereas only 9.2% of the parents taught them frequently. Meanwhile, less than a half of the respondents (47.5%) fully agreed that that their parents knew what they were doing on the Internet, whereas four of five (79.8%) agreed fully

or to some extent. Most of the children (78.9%) reported having discussed their Internet use with their parents rarely (extremely rarely 50.2%, rarely 28.1%), whereas only 6.3% reported such discussions to have taken place rather often. Only 5.1% of the children had a parent with them rather often when they were on the Internet. For 80.5% of the children, this happened rarely (extremely rarely 60.6%, rarely 19.9%).

Finally, 11.4% of the children indicated that their parents frequently checked what pages they had visited on the Web, while 56.2% said that this happened extremely rarely or not at all. These checks were more common among boys than girls ($\chi^2 = 15.989$, $p = 0.003$).

Restrictions of Internet Use

Almost half of the children (45.5%) reported that their parents restricted some of their Internet use, whereas 28.6% said there were no restrictions at all for them. Every second child (48.8%) was convinced that they could, in practice, decide for themselves how they used the Internet.

Two thirds of the children (65.0%) reported that a time limit had been placed on their use of the Internet. Quite interestingly, on-line time was restricted more often for girls than for boys ($\chi^2 = 8.253$, $p = 0.004$; 73.9% vs. 55.6%, respectively). Half of the respondents (50.2%) reported that their parents allowed them to contact only people on the Internet whom their parents also knew. However, in conjunction with another question, more than half of the respondents (55.3%) reported that their parents allowed them to communicate with unknown people for them on-line but not to meet them in real world. The girls (62.2%) reported this latter situation slightly more often ($\chi^2 = 4.310$, $p = 0.038$) than the boys (48.1%).

According to the children, 80.3% of their parents had forbidden their children to visit certain pages, and almost a third of the respondents (29.4%) reported that their parents used filters on the browser on the home computer to prevent access to pages of certain types. Most of the parents (79.5%) had forbidden them to give any personal details, this being more common ($\chi^2 = 9.519$, $p = 0.002$) for the girls than the boys (87.6% vs. 70.8%, respectively). The children were relatively well aware of the risks involved in revealing their identity on the Internet: As a result, 88.7% of them said that they very rarely or never gave information that they felt to be personal, the remaining 11.4% having done this rarely or sometimes.

According to the children, less than half of the parents (44.4%) expected their children to tell them when they were going to use the Internet. And only about one in five (22.5%) said that they were expected to tell the reason why they were going to use the Internet.

Opinions About Restrictions

The question eliciting the children's opinions of their parents' attempted restrictions resulted in 184 replies (see Table 6). The majority of the comments were in favor of some form of restriction. The children understood that using the Internet should not be the focal point of their lives and that they should do other things as well in their free time. The children also mentioned both security issues and health concerns, such as the danger of headaches and insomnia from excessive computer use. Many of them also understood the reasons behind the restrictions, even in cases where they felt that they were motivated partly by prejudices of their parents. The children who were against restrictions on Internet use justified this in terms

Table 6. "What do you think about attempts at restricting children's use of the 'Net?"

"It could be restricted. It's not a good thing to be hanging around on the net all the time."
"It's quite right that children shouldn't go to pages that are unsuitable for them!"
"It's not a bad thing at all, as the computer produces radiation and can damage our growing brains."
"Quite right that we should be able to do just what we like on the 'Net."
"Quite right, because a lot of children spend many hours a day on the 'Net.
"It's a good thing, because otherwise you get a headache and your brain cells die off."
"Quite reasonable, but annoying that you can't play whenever you want."
"It's a good thing, but I don't always obey it."
"It's good that there's a restriction, as there's some time left for other things, like reading and sports."
"It's a good thing, as you can't get to sleep afterwards and then school suffers…."
"It's necessary, of course, but sometimes parents get prejudices about quite harmless things.
"It's nice when you can play every day until late into the night. ☺ … It's a bad thing if you can only play a little and even that is restricted… ☹."
"It's a good thing, otherwise the world would be full of idiots."
"No! I don't approve. I think all the pages on abuse and that sort of thing should be taken away."
"I think children should be able to go to whatever pages they like, but we should think a bit first because they're not all worth going to."
"There shouldn't be any restriction, except if a child never does anything else but surf the net or play on the computer."
"Down with it!!"
"A WASTE OF TIME"

of retaining the power to decide on what they do and proposed that the restrictions should be on the content placed on the Internet rather than on the use of the Internet.

Every fourth child would have liked his/her parents to be more interested in their Internet use (27.0%), whereas two of five (39.2%) only agreed to some extent with this idea. The boys hoped for their parents to be more interested in their Internet use slightly more ($\chi^2 = 10.494$, $p = 0.033$) than the girls (31.5% vs. 22.8%, respectively, and with those that fully agree 15.7% vs. 5.3%, respectively). Children may have their own reasons to avoid having their parents know what they are doing on the Internet, fearing that parents will remove or add more restrictions to their access.

DISCUSSION

Our study revealed that eight of nine of the 11-year-olds (88.9%) use the Internet on a weekly basis. This figure has grown rapidly in recent years. In comparison, only 37% of Finnish children less than 11 years had been weekly Internet users in 2003 (Spedaro, 2004).

According to our study, 19.7%–29.9% of the children had been faced with frightening or shocking experiences when using the Internet, and one in nine children (11.4%) had revealed personal information that they regretted sharing. Results show that older children have higher incidents of such experiences. In their study of 9–19-year-old British young people, Livingstone and Bober (2005) found that over half of them had seen harmful material on the Internet, and 46% had given their personal details to someone whom they had met only on the Internet. This seems to demonstrate that the dangers of the Internet grow when one becomes a teenager.

In our study, two of three of the children (65.0%) reported having time limits on their Internet use, which is in line with the European parental survey conducted in 2006 (SAFT, 2006), which reported 54% in this regard. However, according to our study, only one in nine children (11.4%) reported that their parents regularly checked the Web pages where their children visited. This finding, which is based on the children's own perceptions, is in sharp contrast with the result from the European parental survey (SAFT, 2006), according to which 56% of the parents reported that they checked from the browser what pages their child had visited. This may be partially explained by the fact that parents do not inform their children every time they check the history. Notwithstanding this likelihood, the difference between the results in these two studies is so remarkable that simple unawareness that their parents are checking cannot explain fully the discrepancies in the statistics. So, even if parents are doing many things proactively in controlling their children's access to and behavior on the Internet, the actual control is probably less than the parents think it is. On the other hand, 80.3% of the Finnish children reported that their parents had forbidden them to visit certain pages, whereas the European parental survey reported only 25% in this regard. There may also be some differences between the Finnish and other European regions in parental control attitudes toward and practices for Internet use.

This study suggested that four in five children (79.9%) were often alone when using the Internet. This is in line with the survey among Finnish schoolchildren of 8–10 years of age by Suoranta, Lehtimäki, and Hakulinen (2001), according to which 84% of children usually use their computer alone. According to Oksanen and Näre (2006), the Finnish children differ from their counterparts in Norway and Sweden in their predominantly solitary use of the Internet.

Oksman (2002) suggests that families consider the computer as one of the instruments of the information society, a command of which will help their children to manage in their work when they are grown up. In many cases the command of computers and networks originally obtained through playful on-line behaviors may lead into an important know-how in the modern information society. In our study, the children typically regarded the Internet as easy to use and easy to learn and more of a toy than a tool. Moreover, many of the children, both boys and girls, perceived that they could use a computer better than their parents, with 66.8% regarding themselves as better users than their mothers and 50.9% better than their fathers. However, parents do not lose their authority over their children's activities merely because their Internet skills are not up to the standard of their children (Parikka Altenstedt, 2004).

CONCLUSIONS

The Internet has become an integral part of the daily and weekly activities of young children. A deeper understanding of children's own views and experiences of using the Internet and their attitudes towards parental supervision and the technological environment in which they are growing up is badly needed. This article reported on a survey of Internet use among the fifth-grade pupils in Finnish schools, that is, children about 11 years old.

Most of the children seem to have an Internet connection at home and most of them tend to use the Internet at least on a weekly basis. More than half of the children chat with their friends on the Internet at least once a day, the median being at least twice a day. About a half of the children play games on the Internet at least once a day, this being more common

among the boys than among the girls. Children of this age seem to make relatively little use of the Internet to support their schoolwork or search for other information. To simplify, the contemporary Internet seems to be a means of social interaction for girls and of playing games for boys.

The majority of the children claim that they are better at using the Internet than their parents. They teach their parents to use the Internet more often than the parents teach them. However, this happens still only occasionally.

Less than a half of the children think that their parents really know what they are doing on the Internet. Some of the children would like their parents to be more interested in their use of the Internet, whereas some do not want their parents to show an increased interest. About half of the children are convinced that they could, in practice, decide for themselves how they will use the Internet. Yet, the majority of the children are in favor of some form of restriction. Many of them also understand the reasons behind the restrictions, even in cases where they feel that they are motivated partly by prejudices.

The children have a fairly clear picture of what content is not good for visiting and what details about themselves they should not reveal. In spite of this, many of the children have found some shocking material on the Internet. The shocking experiences are oftentimes reported in connection with surfing the Internet, and they are related in particular to sex and pornography. Most of the frightening experiences are connected with death, violence, and crime, often in the form of videos.

The children clearly wish to share their unpleasant experiences of Internet use with someone. They prefer to share them with their friends rather than with their parents. Nevertheless, most of the children are also prepared to tell their parents about such experiences, even if most of the parents have not explicitly encouraged them to do so. Those who use the Internet more often are less willing to tell their parents about shocking or frightening experiences than those who use it less often. Unfortunately, this suggests that children gradually get used to the shocking, frightening, misleading, and unpleasant material found on the Internet.

In sum, the Internet appears to be a different kind of information vehicle for different individuals. Most of the use experiences are perceived to be positive, even if also negative experiences do exist. Recently, social networking applications and mobile appliances have become popular among the youth, which has changed the way that they perceive the Web. Further research should be carried out with longitudinal approaches and with regarding the many facets of these new kinds of Web-based systems and services.

ENDNOTES

1. Rideout et al. (2005) studied media use more broadly, including the Internet use as a part of their study.
2. Ito et al. (2008) nicely depict the trends among the young people's Internet use, even if much of the research reported in it concerns older than 11-year olds.
3. See http://www.ii2.org/

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Authors' Note

All correspondence should be addressed to
Harri Oinas-Kukkonen
Department of Information Processing Science
University of Oulu
Postal address
PO Box 3000, Oulu, Finland
Harri.Oinas-Kukkonen@oulu.fi