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## Long-term study of safe Internet use of young children

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## ABSTRACT

The Internet is an evolving medium that continuously presents new functionalities. Accordingly, also children's Internet usage changes continuously. This requires being vigilant about related Internet risk behavior and safe Internet use. The present article presents a structured overview of Internet risks and summarizes approaches to foster safe Internet behavior. Based on a long-term cross-sectional study, Internet usage of young children has been researched. The focus is on contact risks and content risks. Based on the analysis of survey data from 10000 children, trends in their (un)safe Internet usage are studied in the years 2005–2006, 2007–2008, and 2008–2009. An Unsafe Internet Usage Index (UIUI) is calculated. The average results point at a rather low level of unsafe Internet usage. But these average results hide between-subject differences and a number of children clearly reflect risky unsafe Internet usage. Also, no consistent reduction in unsafe Internet behavior is being observed over the years. Parental and teacher control hardly increase, and hardly seem to impact the level of unsafe Internet behavior. Considering a number of limitations of the present study, directions for future research are discussed.

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## 1. Introduction

During recent years – in developed countries – a continuous increase in Internet access at home can be observed. At a global level, an increase of 342.2% in Internet access is noticed since 2000 (Internet World Stats, 2009). When focusing on the particular geographical context for the present study (Flanders, the Dutch speaking area of Belgium), Internet access has increased with 250.3% since 2000, resulting in 67.3% of the population in Belgium having access to the Internet.

The former is reflected in the proportion of children having access at home. A recent study of Walrave, Lenaerts, and De Moor (2008) points out that 92.8% of the children between 12 and 18 years old have access to the Internet at home. Additional research indicates that Internet usage is mainly a home-based activity. Up to 91.2% of primary school children surf on the Internet at home; in contrast to about 66% at school (Valcke, Schellens, Van Keer, & Gerarts, 2008). According to research of Valcke et al. (2008), up to 36% of the children between 8 and 12 years old have access to the Internet in a separate room. 17.6% of the children use the computer in their bedroom (Valcke & Decraene, 2007). Other studies confirm this observation and point at an increase in Internet access in a separate room such as a study or bedroom, without parent supervision. Walrave et al. (2008) notice that 56% of the teenagers between 12 and 18 years old use the computer in this setting. International research of Livingstone and Helsper (2008) is in line with this finding and shows that in only 41% of the cases a computer with Internet access is placed in the living room.

In the present article, we focus on the characteristics of current Internet use of primary school children and more in particular we focus on the extent to which Internet use at home reflects unsafe behavior. The role of parents is critical in the context of increased access to the Internet. Livingstone (2007) points, against this background, at a generational divide. Children know more about computers and the Internet as compared to their parents. Grossbart et al. (2002) introduce in this context the concept of “reversed socialization” to mark this difference in expertise levels between children and parents. The current generation of youngsters is also the first generation that has not known a world without computers and the Internet, hence the label “digital natives” (Prensky, 2001) or “the net generation” (Oblinger & Oblinger, 2005). Despite the fact that young children are often called “whiz kids” (Lee & Chae, 2007), other authors, however, point at potential negative side-effects of intensive computer usage and Internet access and prefer the label “risk-kids” (see for example, Kuipers, 2006).

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Lastly, although Internet usage and the related potential and risks have to be studied from an international perspective, we have to stress that localized studies are necessary. The level of Internet access, the nature of the user experience, and the impact of local policies and legislation seem to differ widely between countries and continents. It is therefore not unexpected that results from studies – even set up within a comparable time frame – can differ widely; see for example the comparison of Internet usage in China and the UK (Li and Kirkup, 2007) or the within-country and between-country differences in Internet access and usage as reported by Orviska and Hudson (2009).

## 2. Internet usage of young children

According to Livingstone (2003), typical Internet usage of young children can be described following three dimensions: (1) entertainment, (2) education, and (3) edutainment. We prefer to add a fourth category that stresses the consumer role of children via the Internet. Young children are more and more considered as active consumers via the Internet and engage in e-commerce or are addressed by e-advertising (Tufte, 2006). Research in the geographical context of the present study confirms this Internet usage typology (De Moor et al., 2008; OIVO, 2008; Valcke & Decraene, 2007; Vandebosch, Van Cleemput, Mortelmans, & Walrave, 2006). According to the study of the OIVO (2008), the focus on gaming is dominant in 10–12 year olds and decreases after this age (Flanders,  $N = 2662$ , 6–18 years old). The focus shifts to chatting, social networking and commercial usage from the age of 11 years on. Social networking dominates all types of Internet usage from 13 years on. The increase in the usage for commercial objectives is strange, against the background of the legislation stating that youngsters can only open a bank account – without their 'parents' consent – at the age of 18 and that only 18 year olds can make autonomous use of payment modalities via the Internet. The OIVO study (2008) shows already 15% of the children of 11 years, 20% of children of 12 and 40% of 13 year old children report using the Internet for commercial purposes. In these cases, the children build on the support of the parents to pay for the goods.

Next to differences in Internet usage depending on age, researchers also stress differences related to gender. Gros (2004), for instance, observed no significant differences in Internet use of boys and girls of the 7<sup>th</sup> and 10<sup>th</sup> grade ( $N = 261$ ). However, she noted significant differences between boys and girls in older children; older boys used the Internet to a longer extent. This difference was not observed in the younger children. The latter suggests the emergence of a “generation” effect in Internet usage. In addition, she noted that girls use the Internet significantly more for social networking or chatting; boys tend to focus more on games and entertainment-related activities. Nevertheless gender differences seem to become less relevant (Brandtze, Heim, & Karahasanović, 2011).

It is critical to note that the observed types of Internet usage evolve with the changing faces of the Internet. The Internet has become an environment that allows constructing a personal social space online (Anderson, 2007). The growth in Web 2.0 applications such as MySpace and Facebook, the sharing of pictures, videos and the use of webcams, have affected the types of popular Internet applications picked up by children.

The usage of the Internet will be discussed in the next sections from the perspective of potential threats to young children. After a discussion of literature about unsafe Internet usage and the potential consequences of unsafe Internet use, we discuss the design and results of a research study adopting a long-term perspective. Given the observations above that Internet usage has increased and the nature of its usage keeps changing, we have to be vigilant when building on less recent research data about Internet use of youngsters. This also implies that measures taken at a certain moment in time may no longer be that adequate when newer Internet applications have been adopted.

## 3. Unsafe Internet use

De Moor et al. (2008) present a synopsis of Internet risks for young children. Fig. 1 gives a structured graphical overview of these risks. In the literature, next to the terms (un)safe Internet use, and Internet risks, also the concept Digital Safety is regularly used (Gasser et al., 2010).

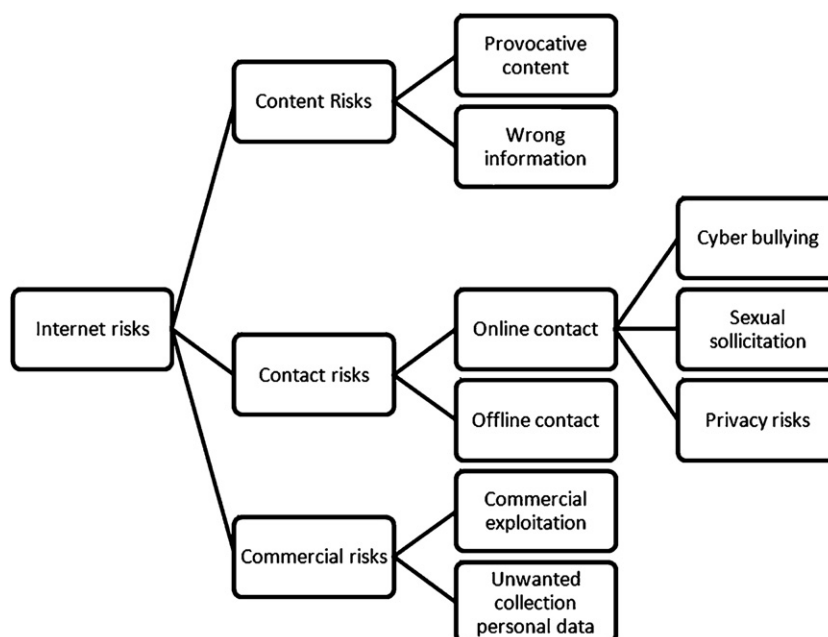


Fig. 1. Overview of Internet risks (based on De Moor et al., 2008).

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