Contents lists available at SciVerse ScienceDirect

Computers & Education

journal homepage: www.elsevier.com/locate/compedu

Attitudes and parenting dimensions in parents' regulation of Internet use by primary and secondary school children

M. Álvarez*, A. Torres, E. Rodríguez, S. Padilla, M.J. Rodrigo

University of La Laguna, Department of Developmental and Educational Psychology, Campus de Guajara, 38205 La Laguna, Santa Cruz de Tenerife, Canary Islands, Spain

A B S T R A C T

In keeping with the growing expansion of Internet use by children at home, this study examines the impact of parental attitudes and parenting dimensions on the parental regulation of this use. Parental attitudes include ideas about who decides what the child is to see on the Internet and motivations for Internet use. Parenting dimensions involve control and warmth. Parental regulation involves assessment of time, concerns about content, and guidance about its developmental adequacy. Participants were 711 Spanish parents of children in primary and secondary school. Results showed that the parental attitudes and child-rearing dimensions mostly differ according to the parent's age, education and place of residence, mirroring the variables that modulate the parents' digital divide. The child's schooling level and gender also modulate parental attitudes and parenting dimensions. When controlling for parent's age, child's schooling level and amount of time spent on line, the child's decision on Internet use positively predicted the assessment of time (Adj$R^2 = .31$), whereas the parental decision on Internet use, more learning and less social motivation, and more control and warmth positively predicted both concerns (Adj$R^2 = .25$) and guidance (Adj$R^2 = .40$) about content. These results may help to design parent education programs to help them discover not only the risks but also the opportunities for learning and leisure that the Internet opens up to the family.

© 2013 Elsevier Ltd. All rights reserved.

1. Introduction

In recent years, we have been witnessing a massive increase in the use of the Internet in day-to-day family life. The results of The EU Kids Online survey (Livingstone, Haddon, Görzig, & Ólafsson, 2011) showed that Internet use is now thoroughly embedded in children's daily lives: 60% of 9–16 year old Internet users in Europe go online daily, and a further 33% go online at least weekly. The proportion of use varied considerably across Europa: 84% children in Sweden use the Internet daily, while only 33% in Turkey. In Spain 58% go online daily or almost daily, 34% use it once or twice a week, leaving just 9% who go online less often. The most recent data from the Spanish National Statistics Institute indicate that in Spain, Internet use among children aged 10–15 has already reached 87% (Instituto Nacional de Estadística, 2011) and that there are virtually no differences between girls and boys. This trend is similar to what is found in the rest of Europe, and it runs parallel to the increasing use of the Internet by parents and their degree of awareness of the risks related to Internet use by children (Livingstone et al., 2011).

Studies generally distinguish between five areas of risk related to Internet use (Valcke, Bonte, De Wever, & Rots, 2010). These are: *1. Social relations,* as contacts made online may favor involvement in risky behaviors such as cyber-bullying, sexual overtures or threats to privacy. On average in Europe, 6% of 9 to 16-year-old Internet users (4% in Spain) report having been bullied online, 30% of 9–16 year olds (21% in Spain) have had contact online with someone they have not met face to face, and 15% of 11–16 year olds (9% in Spain) have seen or received sexual messages online (Livingstone et al., 2011). *2. Negative emotional impact* due to unwanted exposure to pornographic, violent, racist or sexist content. In Europe 14% of 9–16 year olds (11% in Spain) have seen sexual images online (Livingstone et al., 2011). A compilation by Livingstone and Haddon (2008) of 235 European studies of the most common online risks concluded that risks related to inappropriate online content were those most cited in these studies. *3. Physical health,* with effects related to obesity, reduced concentration and muscle pain being those most frequently reported (Barkin, Ip, Richardson, & Klinepeter, 2006; Wang, Bianchi, & Raley, 2005). *4. Problems related to personal time*

---

* Corresponding author. Tel.: +34 922317535; fax: +34 922317461.
E-mail address: malore@ull.es (M. Álvarez).

management, where excessive Internet use is related to serious problems in finding time to study or participate in family activities or other forms of leisure (Kerbs, 2005). *5. Vulnerability to consumerism or commercial exploitation* due to uncontrolled exposure to misleading or abusive commercial offers. Parents are generally not aware of the potential risks to their children linked to commercial activities on the Internet (Chisholm, 2006; Livingstone & Bober, 2004) The likelihood of risk exposure increases with age since 46% of 9–16 year old Internet users had experienced at least one risk online, rising from 17% 9–10 year olds to 69% 15–16 year olds (Livingston et al., 2011).

The present study focuses on the parental side by examining the parents' regulation of children's Internet use. Given the magnitude of the problem and the important role that the family plays for a positive child development we consider parental regulation to be a useful strategy for risk prevention and control. We are dealing with a singular form of socialization since, as stated by Grossbart, McConnell-Hughes, Pryor, and Yost (2002), it is a case of "reverse socialization", where children have developed greater skills and abilities in an area than their parents. However, as in all other forms of socialization, it is very important to identify which of the parents' child-rearing ideas and practices have an impact on the decisions that they take in day-to-day life and, in particular, in relation to their regulation of their children's Internet use. Indeed, research into parenting styles and regulation of Internet use has been inspired by traditional socialization models such as the one developed by Baumrind (1966, 1967) and revised by Maccoby and Martin (1983). These models distinguish between the dimension of control/demandingness, defined as "the extent to which parents desire children to become integrated into the family whole, by their maturity demands, supervision and disciplinary efforts and willingness to confront the child who disobeys" (Baumrind, 1991, p. 61); and the dimension of parental warmth/responsiveness, defined as "the extent to which parents intentionally foster individuality, self-regulation, and self-assertion by being attuned, supportive, and acquiescent to the child's special needs and demands" (Baumrind, 1991, p. 62). These dimensions combine to define the four different styles: high control and warmth correspond to the authoritative style, high control and low warmth correspond to the authoritarian style, low control and high warmth correspond to the permissive style and low control and warmth correspond to the negligent style.

Eastin, Greenberg, & Hofschire (2006) found that parenting styles were related to the strategies employed to mediate children's Internet use. They defined three types of mediation: *factual* (explaining how Internet programs and content are created), *evaluative* (assessing the existence of these programs and content while viewing them with the child and discussing their possible effects on people) and *restrictive* (promoting parental rules governing their use). Thus, parents with an authoritative style were more likely to use the evaluative strategies of watching and discussing Internet content with their children, while authoritarian and negligent parents were more likely to use restrictive techniques, such as blocking access. However, parenting style had no influence on the amount of time children spent on the Internet. It was also observed that parents employed more controls with boys than with girls. With respect to age, Mitchell, Finkelhor, and Wolak (2005) found that parents of pre-adolescent children (aged 10–12) tend to control and supervise their online behavior more (by restricting online time and using filters) than parents of teenagers (aged 12–17). In fact, parents of teenagers tend to adopt the permissive and negligent styles more than parents of pre-adolescent children (Rosen, Cheever, & Carrier, 2008). Interestingly, the fact that parents were acutely aware of the risks of the Internet was not associated in this study with the use of more controlling styles, such as the authoritarian or authoritative styles. However, the authoritative style was linked to lower levels of online risk behavior by children (see also Fleming, Greentree, Cocotti-Muller, Elias, & Morrison, 2006).

Similarly, in their study of parental mediation strategies and potential Internet risks in adolescence, Lwin, Stanaland, and Miyazaki (2008) distinguished between strategies of *restrictive mediation* and *active mediation*, similar to the distinction between reactive and proactive parenting in other socialization domains (Padilla-Walker, Fraser, & Harper, 2012). In the first strategy, parents attempt to establish a number of rules for Internet use, related to the amount of time spent online and the location of the computer in the home. In the second strategy, parents adopt an active role during online time, remaining close to their children or even talking to them about the content being accessed or looking directly at the screen. Results showed that the simple act of a parent talking to the child about not supplying personal information online greatly reduces the likelihood that children will disclose personal information. In addition, setting rules for Internet use (how much time children can use the Internet, which sites they can and cannot visit) is not as effective as talking to children about the dangers of giving out such information.

The results of The EU Kids Online survey (Duerager & Livingstone, 2012) showed that 89% of parents impose rules about whether their child can give out personal information online; most parents talk to their children about what they do on the Internet (82%) and stay nearby when the child is online (58%). Over half of parents also take over positive steps such as suggesting how to behave toward others online (56%) and talking about things that might bother the child (52%), and third have helped their child when something arose in the past (36%). Parents also restrict children's disclosure of personal information (85%), uploading (63%) and downloading (57%). The use of technical safety tools is relatively low: just over a quarter of parents blocks or filters websites (28%) and/or tracks the websites visited by their child (24%).

In Spain, 87% of parents report the use of active mediation of the child's Internet safety, 91% use active mediation of the child's Internet use, 93% use restrictive mediation of the child's Internet use, 67% use monitoring of the child's Internet use and 28% of parents report use of parental controls or other means of blocking or filtering websites (Livingstone et al., 2011). These data coincide with the findings of the Eurobarometer 248 (European Commission, 2008) for Spain, showing that 85% of parents reported talking to their children about the Internet (the percentage for all 27 member states was 74%); 74% reported that they always or frequently remained close to their children while they were online (61% in the rest of Europe). Paradoxically, it was also found that 48% of parents reported that they impose no restrictions on online access (compared to the Europe-wide average of 25%). When children are consulted about these aspects, there is considerable discrepancy in the percentages for parental control and supervision (Wang et al., 2005). The EU Kids Online survey (Duerager & Livingstone, 2012) showed that two thirds of children (68%) think their parents know a lot or quite a bit about their children's Internet use. However, 29% say they ignore their parents a little and 8% of children say they ignore a lot what their parents say about using the Internet. Less than half (44%) of children think that parental mediation limits what they do online, 11% saying it limits their activities a lot.

In Spain, 89% of the children report their parents' use of active mediation of the child's Internet safety, 89% use of active mediation of the child's Internet use, 88% use of restrictive mediation of the child's Internet use, 48% use of parental monitoring of the child's Internet use and 20% of the children say their parents use of parental controls or other means of blocking or filtering some types of websites (Livingstone et al., 2011). In a qualitative study conducted in 29 European countries (European Commission, 2007) where respondents were children aged 9 to 14, Spanish children reported that the Internet supervision they perceived on the part of their parents simply took the form of controlling the amount of time they spent online, and that this was often arbitrarily decided. Similar results were obtained in the study by Garitaonandia and Garmendia (2007), where it was found that the main concern of parents was the amount of time children spent online,