

# Chapter XXIX

## Towards Safer Internet for Students with the Aid of a Hypermedia Filtering Tool

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### ABSTRACT

*Internet as a new medium offers unlimited opportunities to education and knowledge sharing but it can also shape specific improper attitudes and cultivate erroneous and potentially dangerous ideas. As more kids go online worldwide so do the concern increases about the safeness of the websites they visit. In this chapter a list of potential online risks is presented. Then, the safeness of the favorite Web sites of 270 Greek high school students is assessed in connection with these online risks. Inappropriate content was found in more than 30% of the evaluated Web pages, although specific security policies apply to computer labs of Greek schools. Last, a filtering tool for analyzing and restricting the access to improper Web sites is presented and evaluated.*

### 1. INTRODUCTION

According to new research from Nielsen/NetRatings ([www.nielsen-netratings.com](http://www.nielsen-netratings.com)) the number of children online in Europe has grown by three million during the last years. There are now 13.1 million kids online; four million under 12 years old, and nine million between 12 and 17 year olds. Analogous figures are true for the other continents as well. Some recent statistics showed that for a

growing portion of the online teen population, schools have become an important venue for Internet use for a significant number of teens (Raine & Hitlin, 2005). More than three in five online teens who use the internet from multiple locations list school as the location where they go online most often.

The aforementioned statistics prove that Internet has penetrated the everyday school life. Several teachers re-engineer their courses to be

technology based (Roblyer, 2005). Teachers ask and encourage their students to go online for additional resources and to search for specific information, in an attempt to help them gaining extra knowledge and understanding (Nachmias & Gilad, 2002; Lazarinis, 2007a).

It has been observed that when students navigate the Internet without supervision they often visit sites with inappropriate and potentially dangerous content (Dreyfus, 1999; Hope, 2006). Various tools prohibit access to sites related primarily to adult material but restrictions are based mainly on the visited URL (i.e. internet address). Also these tools are not customizable and this may cause problems especially in non-English sites as they cannot identify the awkward and inappropriate terms found in the text.

Initiatives like “Safer Internet” ([www.safer-internet.org](http://www.safer-internet.org) - [ec.europa.eu/information\\_society/activities/sip/index\\_en.htm](http://ec.europa.eu/information_society/activities/sip/index_en.htm)) aim to promote safer use of the Internet and new online technologies, particularly for children, and to fight against illegal content and content unwanted by the end-user, as part of a coherent approach by various government and social organizations.

As students and adults become addicted to Internet (Chou & Hsiao, 2000; Young, 2004) we need to identify and classify the direct and indirect online risks and to discuss potential workarounds. The basic aim of this chapter is to promote the discussion of safer Internet in the school environment and to discuss how some of the unsafe content can be mechanically recognized. At first relevant papers are reviewed and then a class of potential online risks is developed and analyzed. Then the Internet access log files of a school’s lab are analyzed to identify the students’ favorite sites. A percentage of these sites was randomly selected and analyzed both qualitatively and quantitatively to realize if they undermine safe internet access. Finally, a customizable tool is presented which rates Websites according to their content and prevents access to the Websites which are below a specific limit. Rating of sites is based on the frequency of the inappropriate contents.

## **2. BACKGROUND**

As the use of the Internet in schools increases, so too do anxieties over inappropriate access, often fueled by a popular media focus upon the dangers of children’s exposure to pornographic or extremist material (Lawson & Comber, 2000). Teachers and school managers, attempting to weigh such hazards against the education potential of access to global information sources, are caught in the crossfire between those who call for rigid controls and those who argue for freedom and access. The paper of Lawson and Comber (2000) concludes that there is a need to educate students to become more responsible users because simply preventing them from viewing specific sites might cause the opposite results.

The misuse of the Internet by paedophiles is a problem from the early Internet days (Durkin, 1997). The author discusses the various ways in which paedophiles utilize the Internet and present their messages in chats or Web pages and also discusses the implications that these deviant activities have for law enforcement and probation practice. In (Arnaldo, 2001) the problem of child abuse on the Internet is discussed and the legal implications and some technologies for reducing the problems are presented.

Young (2004) takes a closer look at how the Internet can create marital, academic, and job-related problems to adult users. This article outlines a workable definition of Internet addiction and as a clinical new phenomenon, explores the major consequences created by Internet addiction, including online affairs, student Internet abuse, and employee Internet abuse.

Hope (2006) discusses the introduction of Web access into UK schools and argues that a new dimension to the hazards that might exist in schools was added. It mentions that students can now access pornography, be the subject of online harassment, learn how to make bombs/drugs or be influenced by hate groups all through the medium of the Internet. This discussion was

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