

# Children and the Internet: Vulnerability or Opportunity?

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## Abstract

*As a member of the implementation team of the Cyberex RO Project - Improving, cooperating and preventing in the fight against cybercrime, I conducted a survey among students aged 10 to 18 on the topic of online security. This paper discusses the results of this survey regarding children's habits on using the Internet, the safety measures they know and use, their level of information and their need to learn about Internet safety issues.*

**Index terms:** digital skills, level of information, information needs, online behaviour, online safety

## 1. Introduction

For children, the Internet is an important resource for learning, personal development or socializing and entertainment, but it is also an environment where risks are present to the same extent, if not to a greater extent, than in real life. As previous studies have shown, "online activities are not in themselves beneficial or harmful to children" and "opportunities and risks go hand in hand" [1].

Both the rapid development of Internet-connected devices and the easy and quick access to the Internet, and the growing interest of children in using them, wanting to reap all the benefits of a "connected" life [2], contribute to the presence of the growing number of minors on the Internet, while also exposing them to the risks involved by the online environment, from infecting their devices with malicious software and stealing information from them, to more serious acts such as blackmail and online child pornography [3].

As some previous studies show, the transnational dimension of cybercrime, in addition to the ineffectiveness of regulatory enforcement mechanisms in this area [4], makes it difficult to investigate and prosecute those responsible. Thus, the importance of informing and educating children in order to behave responsibly on the Internet is once again emphasized [5], [6].

In this paper I discuss the results of a survey conducted among young students between the ages of 10 and 18 on the topic of Internet safety. This survey was part of a larger study, *Risks and Vulnerabilities of Students in the Online Environment*, conducted by the Institute for Crime Research and Prevention in 2021, as part of the RO Cyberex Project - Improvement, Cooperation and Prevention in the Fight against Cybercrime, funded by the European Union from the Internal Security Fund - Component for Police Cooperation.

Within this project, I was part of the implementation team, as a research expert, carrying out both the research methodology and the analysis, interpretation of data and drafting of the research

report. I took care of the results of the survey exclusively, and those of the interviews conducted with specialists in collaboration with the other expert from the Institute.

The study aimed, first of all, to identify the main risks and vulnerabilities faced by young students aged 10 to 18 in Romania in the online environment (mainly child pornography and cyberattacks), in order to substantiate, on a scientific basis, the activities of preventing online crime against children.

A component of the study consisted of conducting a survey on a sample of 1445 young students, nationally representative for the population of students aged 10-18 years (a random, multistage, stratified sample). The sampling error was  $\pm 3\%$ , at a 95% confidence level, and the data were collected between 16.11 - 03.12.2020. For more details on the research methodology, it can be consulted in the research report, fully available online [7].

The objectives of the survey included the description of children's usage habits and their behaviour on the Internet, the assessment of the level of knowledge and use of safety measures in Internet use, and identifying risk factors and vulnerabilities to cyberattacks and child pornography. We also considered identifying the need to inform this segment of the population about online safety measures.

## **2. The results of the survey**

### **2.1. Children's habits when using the Internet**

The results of the study show that more than a third of students started using the Internet at a very young age, when they were less than 7 years old (14% less than 5 years old, to which is added about 25% between the ages of 6 and 7).

It is also observed that the self-taught method is the defining learning path for most of the respondents, so that 40% of the students state that they have learned on their own how to use the Internet, without any help, to which is added those who claim to have learned on their own, but were also guided by other people (27%). As a result, 67% of students say that they have found out how to use the Internet mainly on their own.

The vast majority of students surveyed (96%) used the Internet every day, but depending on the age group, we noticed that the percentage was slightly lower for students under 14 (93%) compared to those aged higher (over 98%). While there were no significant differences between girls and boys in terms of Internet usage, urban students connected more often than rural students (97% compared to 93%).

In general, minors access the Internet from multiple devices, depending on their availability. Thus, most (approximately 76%) have access to the Internet from their own mobile device (smartphone or tablet), but they also connect from home, from their own computer or laptop (48%), from a computer or laptop used by family (25%), on TV (23%), on a game console (11%), on the phone or tablet of an adult family member (e.g. parents, grandparents - 7%), on a tablet received from school (4%), on the phone or tablet of another minor family member (e.g. brother, cousin - 4%) or from school, on a school device (computer, laptop, tablet - 3.5%). Depending on their age, the results show that students over the age of 14 have access to the Internet from their mobile device in a higher percentage than those who are younger (82% over the age of 14, compared to 69% at a younger age).

Given the suspension of physical education in schools and the conduct of online teaching activities due to the COVID 19 pandemic, the most frequently mentioned Internet activity was online schooling (82% of respondents). However, the favourite online activities of minors were, in order, the use of social networks (64%), writing, reading, checking emails (61%), instant messaging (59%),

watching movies or online series (59%) and voice or video calls using applications that use the Internet (57%).

Online games are also one of the favourite activities of students in the online environment, with 54% of students saying that they spend time with online games with other people, and 47% say that they play such games alone.

Boys are much more interested than girls in online games that they can play with other people (67% vs. 42%), as well as in online games that they can play alone (58% vs. 39%). In contrast, girls are more interested than boys in using social media (69% vs. 59%) and watching movies or series online (66% vs. 51%).

In general, students under the age of 14 have a much greater interest in posting on their own vlog (e.g. on YouTube, TikTok) compared to other age groups (31% compared to 14% of those aged 14-15 and 18% over 15 years). In contrast, both 14-15 year olds and 16-18 year olds show a greater interest in purchasing goods or services online (e.g. books, concert tickets, train tickets, sports equipment, clothing, etc.) - 49% and 46%, respectively, use of social networks (76% and 78%, respectively), instant messaging (72% and 67%, respectively), entertainment (e.g. watching videos or audio-videos on YouTube, including watching vloggers) - 61% and 56%, respectively, as well as downloading movies, series or music (41% and 33%, respectively).

The biggest differences between urban and rural students are in the use of the Internet for online shopping (40% urban, 18% rural), watching movies and online series (65% and 43% respectively), voice or video calls (63% and 43% respectively), instant messaging (64% and 45% respectively) and entertainment (e.g. watching videos or listening to audio files on YouTube, including vloggers) - 57% and 38%, respectively.

## **2.2. Young students' safety on the Internet**

Most of the students between the ages of 10 and 18 say that they feel safe when surfing the Internet (73%). Boys are much more confident than girls about Internet safety, with 81% of boys saying they feel safe on the Internet (to a large or very large extent), while 67% of girls say the same.

As the age of students increases, so does the percentage of those who say they feel safe on the Internet: 71% of those under the age of 14, 74% of 14-15 year olds, and 78% of 16-year-olds and over.

The focus of students on Internet security measures is mainly on blocking people who are bothering them and changing the privacy settings of their profile on social networks.

Thus, most of the students (93%) state that they know how to block a person who is bothering them on the Internet (on social networks, e-mail or online messaging application). Instead, their percentage decreases in connection with settings that require more knowledge, such as changing profile privacy settings on social networks (79%), blocking pop-ups with notifications (66%) or site security checks (63%). Less than half of students between the ages of 10 and 18 (48%) say they know how to enable or change filters (change how their computer or Internet browser selects which sites or content to view).

Boys are more likely than girls to check that the sites they use are safe (71% of boys versus 56% of girls), to activate and change filters (54% of boys compared to 43% of girls) and block pop-ups with ads or other annoying notifications (69% of boys compared to 63% of girls).

On the other hand, girls are more interested in changing the profile privacy settings on social networks (83% of girls compared to 75% of boys).

There are no significant differences between boys and girls in the skills of blocking people who bother them on the Internet (instant messaging, social networking or email), deleting the history of the sites they have visited or searching and finding information on how to use the Internet safely.

In terms of age, the number of younger students (under 14) with a higher level of knowledge of Internet safety is lower than the number of older students. The most significant differences are in the case of skills such as blocking pop-ups with ads or other notifications, deleting the history of the sites they have visited and changing the privacy settings of the profile on social networks. In contrast, the degree of knowledge of these measures by students aged 14-15 is comparable to that of older students (16-17 years).

Minors in rural areas differ from those in urban areas by the fact that there are fewer children who know how to use security measures on the Internet, the biggest differences being found in changing the privacy settings of the profile on social networks (69% rural compared to 83% urban) and blocking pop-ups with various advertisements or notifications (55% rural compared to 71% urban).

### **2.3. Students' knowledge on Internet safety and online risks**

89.4% of respondents considered that they are sufficiently well informed about the risks on the Internet, approximately the same degree of confidence being felt by both students studying in urban and rural areas.

Considering the age of the students who took part in the opinion poll, there is a decrease in confidence in their own risk-avoidance skills on the Internet as they get older. Thus, 44.6% of respondents under the age of 14 consider themselves well informed, while only 24.4% of those over the age of 15 state that they have sufficient information.

Most of the students said that they knew that they could report the unpleasant events they encounter on the Internet to the police or directly on the site. 53.2% of them said they knew a phone number they could call if needed. Only about a third of students were aware that they could report disturbing behaviours on the Internet via email, websites, or online forms.

The age group that has most stated that they know how to report crimes or other behaviours that bother them on the Internet is that of students under 14 years of age. Of those who said they were informed about how to report, about 75% were studying in urban schools.

Regarding the information needed to be safe on the Internet, most of the respondents appreciated the need to assimilate details about social networks, mentioning elements such as the security of accounts related to various services, exploitation of personal data and identity theft.

Another significant share of the answers referred to the need to acquire IT-specific notions: protection against viruses, methods used by hackers, as well as in-depth elements such as creating dedicated protection software, using VPN, protection against flooding threats. At the same time, they emphasized the importance of knowing the elements that differentiate the safe content from the potentially harmful one.

Last but not least, they highlighted the importance of information on the types of offenses related to the online environment, their consequences, as well as the competent institutions they can turn to in case they become victims of such offenses.

The answers given by the students show an increased interest in the use of social networks to the detriment of other types of information, applications or sites. In fact, a large number of respondents stated that they had enough information to be safe, using the resources available online to update their knowledge in the field.

### 3. Conclusions

The results of the survey show a very large share of daily Internet users among young students, their own mobile devices being the most accessed equipment, and the self-taught method being the defining learning path for most respondents. At the same time, the entertainment (social networks, vlogs, movies or series) occupies the agenda of young users of Internet.

As they grow older, youths engage in the purchase of goods and services on the Internet, but there is also a growing sense of security for the online environment, while becoming aware that they are not sufficiently informed about how to protect their devices and themselves in the virtual world.

Social networks play a key role in students' discourse, as these are mentioned by respondents in topics such as the main ways of using the Internet, concern for account security (e.g. regular password replacement) and potential risks, such as breaking their accounts, indecent conversations or various illegitimate requests from strangers.

The information that the students aged between 10 and 18 years want to receive from the authorities, as well as from other organisations with concerns in the field, aims, as we have previously shown, first of all, how to secure their accounts on social networks, but they also show interest in learning how to exploit personal data securely, highlighting both the concern of becoming a victim of identity theft and the desire to find out how to protect themselves from it.

They have also expressed the need of learning about the elements that differentiate safe content from potentially harmful content, as well as the desire to learn more about specific types of offenses related to the online environment and their consequences.

Last but not least, the students were interested in receiving information about the institutions they can turn to if they become victims of these crimes and what is the concrete way in which they can be helped to overcome the situation of victimization.

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