

# Child Online Protection in the Context of Digital Citizenship Perception

Ahmet ÇUBUKCU\*

\* Information and Communication Technologies Authority, Ankara, Turkey  
e-mail: acubuk2@gmail.com

ORCID ID: 0000-0003-0899-4356

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**Abstract-** Child online protection is an important topic in the Internet regulations. The countries and international organizations are conducting many efforts on this matter, as well. A field study was conducted on child online protection in the light of the standards and elements established in the context of digital citizenship so as to contribute to these efforts. As a result of the study, it was tried to arrive at a conclusion on which elements of the digital citizenship should be contributed to more so that more effective means can be pursued in child online protection.

**Keywords-** Child online protection; digital citizenship; digital security; digital rights; digital responsibilities.

## 1. Introduction

Increase in use of the internet for illegal and harmful purposes has resulted in the necessity of regulating the internet in terms of content and for implementation of several sanctions for fighting against the crimes and harmful acts committed in the internet environment [1,2]. Due to different socio-cultural structure and different legal regulations of each country, different content types have been regarded as illegal or harmful content by countries [1, 3]. In addition, the fact that Internet is a global and dynamic network and that the content is accessible all around the world simultaneously has often made it difficult to fight against the illegal content of the Internet.

Since the illegal and harmful concepts may vary by countries in the Internet content regulations, the international consensus on this matter has usually remained limited to child online protection, copyrights and several hate speech and racism crimes [4].

The efforts undertaken around the globe for child online protection have a special and

important place in the Internet regulations of the international organizations and countries. This matter is among the privileged fields under the Internet governance platforms, as well [4].

This study analyzed by a field study to what extent and for what purpose children can use the online technologies on the path of being a good citizen under the 9 elements of digital citizenship defined by Ribble [5]. Here, it was aimed to see whether children connect to the online technologies knowing the appropriate usage norms, thus, to contribute to the efforts undertaken for child online protection.

## 2. Efforts undertaken for child online protection

The first studies on the subject matter started with the request of the European Council for "a summary on the problems caused by rapid development of the Internet" from the European Commission on April 1, 1996. Depending on the report prepared and the developments, an Internet Action Plan supporting safe use of the Internet was

prepared in 1998, and shared with the public as the decision 276/1999/EC of the European Parliament (EP) [6]. This plan remained in effect until 31.12.2002, and then the Safer Internet Action Plan Extension and "Safer Internet Plus Program" came into effect through the years 2005-2008 and 2002-2005, respectively. Lastly, various projects were started to be financed and supported in this field with a budget of 55 billion Euro through the Safer Internet Program, and the program continued until 2013 [7].

During that period, INHOPE (The Internet Association of Internet Hotline Providers) based in Ireland and having its official center in Amsterdam, which receives the illegal content reports about online child abuse, PEGI (Pan-European Game Information), which mainly the EU member states came together with the digital game providers and embedded their rating and classification systems in, the INSAFE (European Safer Internet Network) network established in 2004 to lead the awareness raising activities within the framework of conscious and safe use of the internet, and EU Kids Online which provides situation analyses through the field studies started to be conducted with 25 EU countries in 2006, constituted the most important projects of the Safer Internet Program [8].

28 companies including the major technology companies such as Microsoft, Samsung, Apple, Facebook and Vodafone met under the leadership of the European Commission and agreed upon the action plan 'Better Internet For Kids' prepared. This was the most important initiative established after the Safe Internet Program under the roof of the EU for child online protection [9, 10].

Apart from the EU, there are various efforts undertaken on the subject matter by the international organizations such as OECD [11], UNICEF [12], Council of Europe [13], ITU (International Telecommunication Union) [14], and various countries, primarily the USA. The studies aimed at child online protection occupy an important place in the cyber security agendas of the countries and establishing their social welfare levels.

### 3. A Field Study on Measuring the Digital Citizenship Perception in Children

A digital citizen is one who can inquire the information technologies and communication tools while using them, who is aware of the ethic values of online environment, who does not misuse the technology, who promotes correct conduct in communicating in the digital world, and who is informed of the opportunities and benefits brought by the digital platform. In this respect, Ribble and Bailey have defined digital citizenship as the whole of the norms a digital citizen should satisfy while using the digital tools [15].

Determining the digital citizenship perception is important in the policies to be established for child online protection. Having laid the foundations of the digital citizenship concept and defined its elements, Ribble touches upon the importance of digital citizenship concept in the developing online technologies, and emphasizes the requirement of teaching the digital citizenship at childhood ages and during primary education at schools. In this regard, Ribble has established 3 main themes called REPs (Respect-Educate-Protect) [16]. These are:

1. Respect to yourself and others (Respect)
2. Educate yourself and others (Educate)
3. Protect yourself and others (Protect)

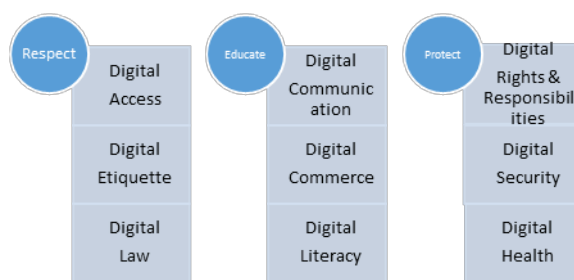


Figure 1. REPs Standards

The field study addressed the 9 elements of the digital citizenship in Figure 1, which were created within the framework of the REPs standards of digital citizenship in measuring the digital citizenship perception of the children in the context of online technologies. At least 1 question involving each element was simplified enough to be answered by the children, and it was aimed that

they answer the questions correctly and effectively. Since this study was modeled within the framework of drawing a policy for child online protection, mainly the 3 digital citizenship elements – digital rights & responsibilities, digital security and digital health – included in the REPs standards under the 'Protect' heading were examined and analyzed.

### 3.1. Scope of the Study and Results

The study was conducted at a private and a state school carrying on their educational activities in a developed province of each region of Turkey. The provinces selected from each region were Istanbul, Ankara, Izmir, Samsun, Van, Diyarbakir and Antalya. The Provincial Directorates of National Education in accordance with the objective of the study determined the schools by selecting from these provinces, and the study was conducted under the coordination of a counselor or technology teacher in charge of the survey of each school. These teachers to their students at their own schools applied the survey questions formed with respect to digital citizenship.

The survey was applied by selecting 100 students from each school within the scope of the study. Performed at 14 schools in total, the survey was applied to a total of 1400 children being students in the age group of 12-14 years.

Among the 1400 students participating in the study, 42.4% stated that they used computer and Internet for less than one hour a day or did not use at all, whereas 36.9% stated that they used for 1 to 2 hours, and the remaining 20.8% stated that used for more than 2 hours.

As for the element of digital rights and responsibilities, about 40% of the children expressed that they did not share any unfavorable situation they come across on the internet with their family. The children are also split virtually by half in regard to whether they have the right to do everything on the Internet. As regards the element of digital health, 42% of the children stated that they suffered various physical disorders depending on use of computer and Internet.

Several questions were asked to the children in respect of digital security, the most important element included in the study. As regards this element, 31% of the children stated that they did not subject the files they download from the internet to virus scan, 33% stated that they shared their personal information, and 18% stated that they did not make their privacy and security settings on the social networks.

### 3.2. Study Analyses and Evaluations

Opinions of two academic experts, who are lecturers in the department of Computer and Teaching Technologies, were received for measuring the validity of the survey. The questions were prepared by finalizing the survey in line with the opinions of the experts. Content validation of the survey was performed by this way. In order to analyze the survey reliability, a pilot study was conducted to a sample of 175 people including 25 children selected initially from each region. The survey was found to be reliable based on the answers given to the questions as a result of the analysis through the pilot study.

Characteristics of the data should be determined first so as to select the suitable analysis type. It was considered appropriate to form the hypothesis tests determined on the basis of distribution type of the survey data used in this analysis from non-parametric methods.

First, it was checked whether there was a significant correlation between the region of living and the duration of using computer and internet. Since the significance value found as a result of the Chi-Square Independence Test (Table 1) meets the requirement of  $p=0.021 < 0.05$ , it can be said that there is a significant correlation between the region of living and duration of using computer and Internet.

Table 1. Example of Chi-square independence test

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	40,138 <sup>a</sup>	24	,021
Likelihood Ratio	46,280	24	,004
Linear-by-Linear Association	4,718	1	,030
N of Valid Cases	175		

a. 21 cells (60,0%) have expected count less than 5. The minimum expected count is ,86.

When looked at the results, only 5.7% of the children in the Eastern Anatolia Region could access computer and Internet all times, whereas this rate rises to 28% in Marmara Region, which is the most developed region of Turkey. Similarly, 28.6% of the children in the Eastern Anatolia Region stated that they could never access computer and Internet, whereas this rate falls to 14.3% in Marmara Region.

Apart from digital access, the power of correlation was checked first by the Spearman Correlation Analysis for the correction between the region of living and the remaining 8 elements of digital citizenship; then, it was tried to examine the correlations of the digital citizenship elements with the region of living through the Chi-Square Independence Hypothesis Test.

The possibility of access to computer and Internet was seen to increase as the development level of the regions increased. Similarly, it was observed in the tests that the children in developed regions share any unfavorable situation they come across on the Internet with their families and teachers more. No correlation was found between the other digital citizenship elements and the region's development level.

It was analyzed that the children who use computer and internet much, communicate more with their friends via social networks, and who share their information on social networks, become victims of cyber bullying more frequently compared to others, i.e. they are harmed during the online communication they establish with their new friends.

Similarly, the questions asked with respect to the digital rights and responsibilities were expected to have a significant correlation with the questions asked with respect to the digital law. Nevertheless, it was observed that the children who believe that internet crimes exist usually share any unfavorable

situation they come across on the internet with their families or teachers, whereas these children did not give similar answers to the question "everybody should be able to do whatever they want at any time on the internet", i.e. they regarded the internet as a right in any case.

The children usually gave the answers "rarely" and "never" to the question "Are there times you feel pain in your hand, back or eyes while using computer and internet?" asked to them with respect to digital health. Even though such disorders are seen less in children due to age, it was found in the analysis that the children who encounter these health problems more are usually those who use computer and Internet more.

As regards digital security, although the children are usually seen to pay attention to Internet security, there is also a considerable group who do not pay attention to online security and privacy. While children who subject the files they download from the Internet to virus scan also pay attention to the privacy setting on social networks, these children are different from the segment of children who pay attention in regard to sharing their personal information on social networks. Children who pay attention to digital security were seen also to be aware of the crime factors in digital environment.

#### 4. Conclusion

Alongside the countless opportunities brought by the internet, the risks and threats it poses has demonstrated the necessity for taking several measures primarily for the children and the young who are vulnerable in this field. One of the rare topics, which the countries agree on in the Internet regulations, is the effort undertaken for child online protection [17,18].

The main objective of this study is to investigate and analyze what could be done for child online protection by measuring the digital citizenship perception of the children. To that end, it was first tried to summarize the efforts undertaken across the world within the framework

of the concepts of online environment and child protection.

Then, a field study was conducted in the light of these efforts. Field study questions were determined using the REPs standards in the study. The REPs standards and 9 elements created within the scope of digital citizenship are a nice model example promoting use of the online technologies in accordance with the intended purpose.

The fact that children started to access IT tools more conveniently increases the duration of using computer and Internet and communication via Internet. As the duration of communication increases, questions such as what children do on computer and internet during that time, with whom and about what they could talk for such long, come to the mind, and this may result in emergence of risk factors such as harmful communication channels, cyber bullying and online communication with strangers. It was seen in the analyses conducted that the children who use computer and internet much, communicate more via social networks, and who share their information on social networks, become victims of cyber bullying more compared to others.

In the questions asked to the children within the scope of other digital citizenship elements, the most problematic citizenship elements were found to be digital etiquette, literacy, rights & responsibilities and security. Although the element of etiquette was not considered under the 'Protect' standard, it is a digital citizenship element that is closely associated with the rights & responsibilities element. This shows that more importance should be placed on the digital citizenship elements within the 'Protect' standard.

It is evident from the results attained that an awareness has originated in children about safe use of the Internet. But still there are security problems with a considerable segment of the children. The element of rights and responsibilities is a greater problem. Because the children still do not know where their online rights and responsibilities start and end. The studies conducted on these matters cannot be underestimated, too [19, 20].

The study results attained show that direction of the child online protection policies should shift to

imposing digital responsibility rather than raising awareness on safe use of Internet. The new generation 'digital natives' use the online technologies very well, and are in fact quite aware of the harmful contents. However, they may lean toward wrong acts since they do not know well their rights and responsibilities at this point. The duties falling to the digital citizens and particularly to the new generation digital natives with respect to digital rights and responsibilities need to be further examined in future studies.

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