Changes in Safer Internet Use of Children in Turkey between 2010-2015 and Impact of Contextual Issues*

Alper ASLAN [1], Türkan KARAKUŞ YILMAZ [2]

[1] Munzur University, Çemişgezek Vocational High School, Department of Computing Technologies, alperaslan@gmail.com

[2] Atatürk University, Kazım Karabekir Faculty of Education, Department of Computing and Instructional Technologies, t.karakus@atauni.edu.tr

ABSTRACT

The purpose of this study is to reveal the changes that occurred between 2010 and 2015 in the Internet activities performed, Internet use skills, online risks, and coping strategies related to such risks of children between the ages of nine and 16 in Turkey as well as the impact of the contextual issues on such changes. An explanatory design using mixed research methods was used for this study. In the quantitative part of the study, the data were collected from 784 children between the ages of nine to 16 who were selected, via a survey, from 12 regions in Turkey in 2015. The data were compared to 2010 data which used similar sampling method and instruments and which collected from 1018 children. In the qualitative part of the study, 84 participants were interviewed, including two children, two parents, two teachers, and a school administrator from each of the 12 regions. The results showed that the Internet access age for children has gradually decreased and that children's Internet access time has increased. An increase has also occurred in regard in the activities performed by children online, such as social networking and watching online movies or video clips, which adds up to an increase in the entertainment factor related to the Internet for children. A significant increase has also occurred in the number of children who feel uncomfortable when they are not online, seek new friends online, and receive general sexually explicit messages over the Internet due to the long hours that they spend online.

Keywords:	Computer-mediated communication; country-specific developments; navigation; media in education

INTRODUCTION

With the development of Internet technologies, the number of people accessing the Internet worldwide is increasing exponentially. As the Internet has begun to be used in many occasions in daily life, habits have also changed; these factors have combined with decreases in access costs to the Internet, which, predictably, have caused the use of the Internet to increase, a trend that is expected to continue (Domoff et al., 2019; TurkStat, 2018). It can be said that the increase in the rate of children's Internet access as well as the increase in the number of children having devices with Internet access have affected the rate of activities performed on the Internet activities. The Internet offers many possibilities for children in terms of information, entertainment, communication, education, and creativity (Erdogan, Johnson, Dong, & Qiu, 2019). Research has indicated that the Internet is being used less for research or educational purposes and more for entertainment purposes, such as communication, listening to music, and playing games (Akbulut, 2013). In terms of educational purposes, children tend to use the Internet to research their homework and complete school-related projects (Kaşıkçı, Çağıltay, Karakuş, Kurşun, & Ogan, 2014).

One of the important factors for children to effectively and appropriately use the Internet is proper Internet use skills. Internet use skills or Internet literacy may differ from other forms of visual, auditory, and written communication in terms of the experiences, documents, institutions, and cultural values found on the Internet (Livingstone, 2008). In general, using search engines to evaluate results and websites, using appropriate links, making the necessary security settings, recognizing reliable sources, and comparing information between sources can be considered Internet use skills (Asselin & Moayeri, 2010; Furnell & Phippen, 2012; Leung & Lee, 2012). Internet use skills indirectly affect children's activities on the Internet, their Internet access times, and the risks that they may face over the Internet (Akbulut, Sahin, & Eristi, 2010). For this reason, the Internet use skills that children have are an important part of having safe Internet access.

The negative effects of the rapid growth and diffusion of the Internet go hand-in-hand with its positive effects (Lee, 2012; Livingstone, 2013; Livingstone and Helsper, 2013; Park et al., 2013). As a matter of fact, research has shown that many risks that can negatively affect the mental and social development of children can come from information technologies and the uninformed use of the Internet by children (Haddon & Stald, 2009; Livingstone & Helsper, 2010). Livingstone, Mascheroni, Ólafsson, and Haddon (2014) conducted a comparative study of the online risks faced by children in Europe between 2010 and 2014 and found that the risks that children are exposed to for almost all of the risk factors increased over the four-year period. Similar results can be seen in studies carried out in Turkey (Günüç, 2013; Büyükyıldırım & Dilmaç, 2015).

The effects of contextual issues and social environments on children's Internet use and online risks is important (Katz, Moran, & Ognyanova, 2019; Tripp, 2011; Lauricella, 2013). Adults need to have adequate knowledge about and need to check up on and provide guidance to children until the children have a certain level of competence in regard to using the Internet themselves (Arslan et al., 2014). Social support can be considered as being given when the individuals are trusted, valued, caring, and are sincere in their efforts to help others when they have problems (Batıgün & Kılıç, 2011). Mascheroni and Ólafsson (2014) define the support of the social environment as mediation and divide it into four sub-categories.

• Active mediation for the use of the Internet, sharing their experiences with children when they are using the Internet and talking about the contents on the Internet,
• Active mediation for Internet security, encouraging the use of secure internet by making recommendations to children,
• Restrictive mediation, setting rules for restricting children's online activities,
• Mediation for technical restriction, using tools and software to track, restrict and filter children's online activities.

The change in children's Internet use and the activities they perform on the Internet also directly affects the way that children face and deal with online risks. In addition, political and educational implementations have considered effective issues related to providing coping strategies toward online risks (Livingstone, 2007).

The development of Internet technologies and the research findings related to the effects of such development show that the Internet use of children in Turkey is increasing steadily and that the Internet activities that children perform over the Internet are diversified. As a natural consequence of this situation, it can be said that children may be exposed to an increased amount of online risks. The Organization for Economic Cooperation and Development's (OECD) Digital Economy report (2012) stated that it is important to assess and analyze the current risk potential of the current situation in order to find the necessary measures to be taken to protect children over the Internet. It is unlikely that the problems regarding using the Internet safely will be solved with one-dimensional initiatives.

In past studies, the main topic has been the current situation regarding the use of the Internet (Ayas & Horzum, 2013; Hasdemir, 2013; Karahisar, 2014; Soydaş & Uçanok, 2014). However, the reasons for the change in the use of the Internet also need to be examined. For this reason, a wide range of activities and methods should be developed and evaluated together in the current situation. Only this way will more effective practices be developed (O'Neill, 2014).

Consequently, the results show that the rate of use of Internet technologies among children rapidly increase. However, in Turkey, there are deficiencies for scientific data on the Internet use, parental awareness, the frequency of facing Internet risks. Thus, it was determined that there are the following problems on the use of secure Internet:

1. The comprehensive and current data for children's safe and conscious use of Internet do not exist.

2. . It can be said that social environment, especially parents, do not have enough knowledge and skills to guide their children against Internet risks (Kaşıkçı et al., 2014)

3. Today, it can be mentioned that there are lack of available studies to guide and expand awareness for Internet risks (Çubukcu & Bayzan, 2013)

4. The increase of illegal, inappropriate content and illegal actions that can be considered as offenses in the Internet environment turn the protection of children in the Internet environment into an important problem (Lievens, Dumortier, & Ryan, 2006).

The research conducted in this field is also expected to provide an important reference point for the proposal of applications, from the planning of the children's safe Internet-based training to the guidance of their parents. In this context, the purpose of this research is to reveal the changes that have occurred between 2010 and 2015 in the Internet use, Internet activities performed, Internet use skills, online risks experienced, and coping strategies utilized for children between the ages of nine and 16 as well as the effects of contextual issues in regard to the children's perspectives and social environment. For this purpose, the answers to the following research questions have been sought.

Between 2010 and 2015;
1. How have the children's Internet use and Internet skill levels changed?
   a. What have been the influential factors in regard to these changes?
2. How have the children's online risk levels and risk coping strategies related the Internet changed?
   a. What have been the influential factors in these changes?
3. How have the mediation strategies of the social environment regarding safer Internet use changed?
   a. What have been the influential factors in these changes?

RESEARCH METHOD

Research Model

In this study, quantitative data were used to answer research questions and then qualitative methods were used to explain the quantitative results in depth. The quantitative data obtained in the study were longitudinally compared with the data collected from 1,018 children across Turkey in May 2010.

Participants

The universe of the quantitative data were Internet using children in Turkey between the ages of nine and 16. In the context of the research, stratified sampling was used to increase the sample's probability to represent the universe because it was not possible in terms of time and cost to reach each and every child in the universe. In this context, the research sample was composed of 750 Internet using children from 12 regions of Turkey, according to the classification of regional units of Turkey statistics (TUIK, 2005). As can be seen in Table 1, the number of regional samples is representative of population density (TurkStat, 2014).

Within the scope of the study, one province from each of the regions determined by TUIK (2005) was included in the sample. The purpose of including a province from each region in the study is to save time and cost for the study. In the selection of each province, one of the three provinces with the highest population density in the region was also selected in order to increase the ability of the province to represent the region. For the selection of the schools in the provinces which were included in the sampling, an appropriate sampling method was used in order to bring speed and practicality to the study. Accordingly, selected randomly schools located in the central districts of the provinces covered by the study were contacted. The primary schools for children 9 years old, the secondary schools for children aged 10 to 13 years old, and the high schools for children aged 14 to 16 were visited.

In this context, 784 children aged nine to 16 years were ranked in equal numbers related their age groups (9,10,11,12,13,14,15,16) and genders.

Table 1. TURKSTAT 2014 sample distribution in accordance with population rates (i.e., nomenclature of units for territorial statistics)

Code	Regions	Population rate	Sample size	Age group 9-10*	Age group 11-16*	Total
TR1	İstanbul	18,47	144	18F/18M	54F/54M	72F/72M
TR2	Western Marmara	4,28	32	4F/4M	12F/12M	16F/16M
TR3	Aegean	12,91	104	13F/1M	39F/39M	52F/52M
TR4	East Marmara	9,39	72	9F/9M	27F/27M	36F/36M
TR5	Western Anatolia	9,60	72	9F/9M	27F/27M	36F/36M
TR6	Mediterranean	12,73	96	12F/12M	36F/36M	48F/48M
TR7	Central Anatolia	5,05	40	5F/5M	15F/15M	20F/20M
TR8	Western Black Sea region	5,87	48	6F/6M	18F/18M	24F/24M
TR9	Eastern Black Sea region	3,32	32	4F/4M	12F/12M	16F/16M
TRA	Northeastern Anatolia	2,88	24	3F/3M	9F/9M	12F/12M
TRB	Middle East Anatolia	4,93	40	5F/5M	15F/15M	20F/20M
TRC	Southeastern Anatolia	10,57	80	10F/10M	30F/30M	40F/40M
					Total	**784**

* F=Females, M=Males

Within the scope of this research, the data obtained in the research process and the data for 2010 were compared in order to determine the changes between 2010 and 2015 regarding safer Internet use of children in Turkey. The sample of the work in 2010 was composed of 1,018 Internet users between the ages of nine and 16 in Turkey. The sampling method used was a stratified sampling method as it is in the research carried out. The qualitative data was collected under four different groups: children (n=24), parents (n=24), teachers (n=24) and school administrators (n=12) from 12 regions.

Data Collection Tool

The questionnaire used in the research was developed by the EUKO II study group to determine the online risks faced by children and the mediation that they received from their parents (Livingstone, Haddon, Görzig, & Ólafsson, 2011). As shown in Figure 1, the questionnaire consisted of 101 questions and five sub-dimensions: access and use, activities and skills, risks and consequences, social environment, context and background. The questionnaire consisted of two separate forms, one for children aged nine to 10 and the other for children aged 11 to 16, because there were some sensitive questions for older ages. Each form covered the risky behaviors on Internet, harms and coping strategies.
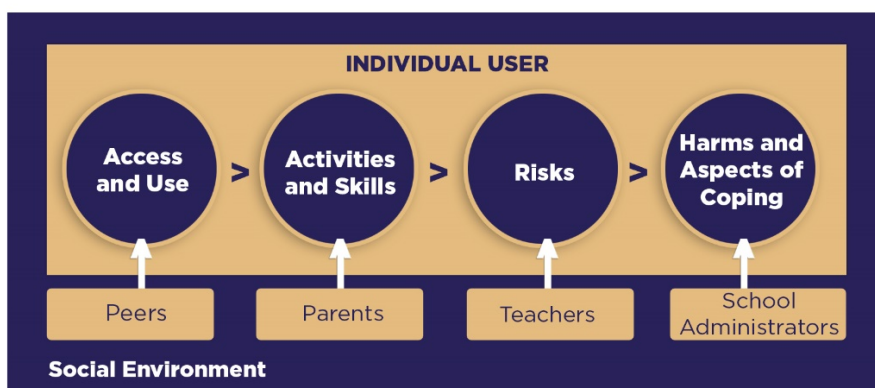

Figure 1. Theoretical framework of the questionnaire [Adapted from Livingstone, Haddo, Görzig, & Ólafsson, 2010]

While the original language of the questionnaire was English, it was translated into Turkish. Language validity tests and pilot studies were conducted by a professional company in 2010. The data were also collected at homes of participant children by a company at that time. In 2013, questionnaire expanded with new questions composing new risk behavior types and mobile Internet use. For the second implementation, researchers of this study adapted the new version of the questionnaire into Turkish and collected the data from schools in 2015. After the cognitive interviews, pilot applications, and permissions from the MoNE, the questionnaire was finalized with 78 questions. Finally, comparisons were made among the matching questions from the 2010 and 2015 survey to see the effect of implementations on safer Internet use.

Individual interviews were conducted during the qualitative data collection process. The interview form was prepared with 15 sub-questions. For validity purpose, it was checked by two doctoral students and two experts working at the EU Kids Online project. A cognitive internet was conducted with four participants to finalize the interview form.

Collection of Data and Analysis

Quantitative and qualitative data were collected within the scope of the research. The process followed in the data collection process is given in Figure 2.

Figure 2. Data collection process

The quantitative and qualitative data collection processes were carried out separately and on a voluntary basis. In order to demonstrate the change between 2010 and 2015 in the children's safe Internet use, the data for 2015 obtained at the end of the process were compared with the data from 2010 using descriptive statistics.

Qualitative data was collected in 2015 only. A content analysis was conducted for the analysis of the qualitative data. In order to increase the reliability of the qualitative findings, the collected data were coded by two researchers and the inter-coding consistency was checked by the reliability formula presented by Miles and Huberman (1994) (Reliability = Consensus / Consensus + Dissensus). With this formula, a reliability score of 70% or higher means that the research findings are reliable (Miles & Huberman, 1994). In the study conducted, the reliability score was calculated at 87.1%. As such, the obtained research findings are reliable.

FINDINGS

The Internet Use Skill Levels of the Children

The descriptive analysis results related to the comparison of the 2010 and 2015 data are presented in Table 2.

Table 2. Children's Internet Use Frequency and Online Activities

Children's Internet Use Frequency	2010		2015	
	f	%	*f*	%
Every day or almost every day	328	32.2	451	57.5
Once or twice a week	534	52.5	253	32.3
Once or twice a month	117	11.5	29	3.7
Less than once a month	34	3.3	16	2.0
Children's Internet Activities	**2010**		**2015**	
	f	%	*f*	%
I used the Internet for homework.	651	92.6	619	83.0
I watched video clips on the Internet.	429	62.3	625	85.0
I watched online movies or listened to music.	295	45.3	638	81.4
I watched / read the news on the Internet.	270	42.1	467	59.6
I received / sent emails.	338	50.6	382	51.6
I used social networking sites.	345	51.7	626	81.3
I visited a chat room on the Internet.	119	18.2	292	41.6
I used it for instant messaging.	323	50.1	506	68.3
I played games with other people on the Internet.	340	51.7	463	61.0
I played my own games on the Internet.	998	98.0	773	98.6
I used a camera for video communication.	256	40.5	378	49.0
I posted or sent a comment to a website.	155	25.1	431	55.0
I posted a blog.	27	4.7	191	28.3
I uploaded photos / videos etc. for sharing purposes.	286	47.0	542	72.2
I created a character, pet, or avatar.	69	11.9	225	33.0

As the percentages of answers such as "I don't know" and "I have no idea" have not been listed, the total amount is not equal to 100%.

Table 2 shows that there was an increase in Internet use among the children between 2010 and 2015. When comparing the activities that the children performed over the Internet, a decline is present in the use of the Internet for school work, while a significant increase exists in the number of activities conducted for entertainment and communication purposes, which is noteworthy. It can be considered that the rate of Internet use for schoolwork declined proportionally as a result of the increase of the other activities participated in on the Internet. The data showed that the children used a significant portion of their time on the Internet for entertainment purposes.

After reviewing the data regarding the children's Internet use and the activities they performed on the Internet, it can be important to tackle their Internet using skills to explore their use of Internet from a different perspective. The descriptive analysis results related to the children's Internet use skills between 2010 and 2015 are presented in Table 3.

Table 3. Children's Internet Use Skills

	2010		2015	
	f	%	*f*	%
Comparing web sites for information accuracy	280	38.5	493	63.4
Using filtering options when searching	123	16.9	262	33.8
Adding a website to favorites	222	30.5	432	56.3
Blocking unwanted ads, spam, emails	219	30.1	471	60.9
Deleting Web browsing history	248	34.1	460	59.6
Changing personal settings in a social networking profile	230	31.6	510	66.0
Blocking messages from unwanted people	283	38.9	522	67.8
Finding information about how to safely use the Internet	319	43.8	553	71.4

Looking at Table 3, it can be seen that the children's Internet use skills increased in all of the categories, which can be seen as a natural consequence of the overall increase in their Internet use. Another important aspect of this point is that these skills can protect children from online risks. For example, considerable increases can be seen in skills related to comparing websites for information accuracy, changing personal settings on a social networking profile, and blocking messages from unwanted people. All of these skills are related to competencies in regard to online risks.

Factors affecting the changes in Internet access and activities

The results of the content analysis from the data obtained from the interviews with the children are presented in Table 4.

Table 4. Causes of the Children's Changes in Regard to Their Internet Use and Skill Levels

	n	*f*
Increased smartphone use	12	14
Enriched content on the Internet	8	9
Increase of Internet use rate of parents	6	7
Spread of Internet use among children	4	4
Increased use of the Internet for educational purposes	3	3

As a result of the interviews conducted with the children, it was observed that the increase in Internet use was due to several reasons, including an increase in smartphone use and a diversification in available Internet activities. The children's Internet access ages and frequency of Internet use are directly or indirectly affected by those factors. While this result shows that the children have increased their personal Internet access and spend more time on the Internet compared to 2010, it can also be said that this increase affects the children in many different aspects of their lives, including the activities that they perform on the Internet and the risks that they encounter.

Risk Factors for Children on the Internet and Coping Strategies

The results of the descriptive analyses of the data related to the risks that the children face on the Internet and the levels of those risks between 2010 and 2015 are presented in Table 5.

Table 5. Risks factors faced by children on the Internet

Viewing nasty content	2010		2015	
	f	**%**	**f**	**%**
Yes	147	14.4	300	51.0
Frequency of viewing nasty content				
Daily or almost every day	14	9.5	104	17.6
At least once a week	28	19.0	78	13.3
Less frequently	95	64.6	178	30.3
Receiving messages with nasty content				
Yes	65	11.5	181	30.7
Frequency of receiving nasty messages				
Daily or almost every day	5	7.7	42	7.1
At least once a week	18	27.7	47	8.0
Less frequently	37	57.0	119	20.3
Communicating with strangers				
Somebody used my personal information in a way that could harm me.	29	4.1	74	13.7
I lost money as I've been the victim of fraud.	12	1.8	9	1.7
Somebody used my password to access my data or pretended to be me.	49	7.1	112	20.4
I sent my personal information to someone I've never met face-to-face.	116	15.4	105	15.8
I've added people I've never met face-to-face to my list of friends.	165	22.0	169	28.6
I've acted like somebody else over the Internet.	136	18.1	156	26.4
I've sent a photo or video of mine to someone I've never met before.	105	14.1	97	16.8
I've contacted someone I've never met before over the Internet.	120	15.9	221	37.6
I've met face-to-face with someone that I first met over the Internet.	18	15.0	125	21.3
Internet Addiction				
I've suffered hunger and sleep deprivation due to Internet.	169	23.2	208	36.8
I've felt frustrated when not online.	204	28.0	313	54.7
I've realized that I've spent time on the Internet for subjects that I'm not even interested in.	263	36.1	295	52.1
I've ignored my family, friends, and/or school work due to the hours I've spent on the Internet.	208	28.6	314	54.5
I wanted to spend less time on the Internet, but I've failed.	241	33.1	298	51.8
I've looked for new friends on the Internet.	180	23.9	292	49.7

Based on the results in Table 5, it can be seen that online risks have increased in many different aspects. For example, the chance of encountering obscenity and nasty content increased. In addition, the proportion of children who have reported communication with people they do not know over the Internet more than doubled between 2010 and 2015. Additionally, when comparing the ratio of children with Internet addiction, it can be seen that the risk of Internet addiction among children increased significantly during those five years.

Another important aspect to study is to whom the children turn when they experience frustrations related to the Internet. This data can be found in Table 6.

Table 6. Coping strategies of children when they face with an upsetting situation on Internet

The experiences of children after a frustrating online incident	2010		2015	
	ƒ	%	ƒ	%
I expected the problem to go away by itself.	4	16.7	84	45.7
I tried to solve the problem myself.	12	50.0	154	62.9
I blamed myself for the things that went wrong.	5	20.8	21	14.8
I tried to persuade the other person to leave me alone.	4	16.7	65	36.9
I tried to get revenge for the incident.	1	4.2	31	20.9
I stopped using Internet for a while.	14	46.7	132	40.6
I deleted the messages of the person who frustrated me.	17	56.7	246	74.5
I changed the privacy settings of my account.	9	30.0	243	71.7
I blocked the person who disturbed me from contacting me.	13	43.3	285	81.9
The individuals to whom the children turn when faced with frustrations related to the internet	**2010**		**2015**	
	ƒ	%	ƒ	%
Parents	15	71.4	145	68.4
Siblings	6	28.6	118	62.8
A friend	8	38.1	260	87.5
A teacher	3	14.3	38	28.8
A social worker with the task of helping children	1	4.8	22	19.0
A reliable adult	2	9.5	121	65.4
Somebody else	2	9.5	41	32.3

Based on the results in Table 6, it can be seen that an increase has occurred in regard to the number of children experiencing frustrations related to the Internet. It can also be seen that the majority of these children attempt to solve the issue themselves and try to take measures to avoid a repeat of the issue. The strategies related to coping with online incidents have diversified and security measures, especially in technical areas, have increased. In regard to the individuals to whom the children turn related to these issues, they are turning to their parents less and turning to their friends and other reliable adults more.

Factors affecting the changes in risky Internet behavior and coping strategies

The results of the content analysis of data from the interviews with the children, their parents, their teachers, and the school administrators to determine the factors that affect the change in regard to the risks (and risk levels) faced by children on the Internet are presented in Table 7.

Table 7. Reasons for the increases related to online risks according to stakeholders

According to the children	n	ƒ
Children sharing their personal information on social networks	13	14
Increase in ill-minded individuals on the Internet	8	8
Ads on the Internet	6	6
According to the parents		
An increase in inappropriate content on the Internet	9	10
An increase in the use of social networks	7	8
Online games popular among children	7	7
An increase of inappropriate ads on page edges	4	4
According to the teachers and school administrators		
Increased Internet use	21	23
Increased inappropriate content and ads	11	13
An increase in the use of social networks	10	11
Children spending more time on computers	8	8
The spread of online games	5	6
The use of the Internet by illegal organizations as a means of propaganda	5	5
A lack of alternative social activities	3	3

Based on the above results, it can be seen that many reasons exist for the increase in risk factors associated with the Internet. Two risks that were stated by all of the stakeholders were improper ads and the increased use of social networking websites. In addition, the teachers and school administrators felt that the increase in online games and the use of the Internet by illegal organizations as a propaganda tool were important causes. One opinion on this subject is as follows:

"There are many risks for us on the Internet. For example, someone can steal our information in social networks [and] people we do not know can communicate with us. For example, how can you know that no one is going to try to [burglarize] your home when you share your home address over the Internet? Children share this kind of information without thinking" (Female, 13, Adana).

According to the parents, the increase in appropriate content on the Internet, increased social networking among children, and the widespread use of online games were the most problematic issues.

"When he [was] met with an immoral image, he immediately closed it and let us know. Such things are not only on pornographic websites, but also on social networks, such as Facebook or Twitter" (Parent, Male, High school, 40).

According to teachers and school administrators, the widespread use of the Internet and the increase in inappropriate content on the Internet have been influential in the change of the risk factors and the level of the risks that children experience online.

"I see a nasty content ads popping up on web pages as a risk while students use the Internet. Children who are not at all interested in such content are [made] being aware of [it]" (School administrator, Female, Bachelor's degree, 32).

In addition, the teachers and school administrators have expressed that many factors, such as an increase in the prevalence of social networks among children, an increase of the time spent by children on the computer, and the spread of online games, have affected the risks that children face in the Internet.

Changing mediation strategies for safer Internet use

The results of the descriptive analysis on how the social environment's guidance and mediating strategies regarding safe Internet use changed between 2010 and 2015 are presented in Table 8.

Table 8. Behavior of the social environment regarding safe Internet use of the children

Parental actions	2010		2015	
	f	*%*	*f*	*%*
Talks to me about the things I do on the Internet	629	61.8	344	44.9
Encourages me to discover new things on the Internet by myself	403	39.6	317	41.0
Sits next to me and watches me without intervening while I am on the Internet	424	41.7	211	27.3
Stays close to me while I am on the Internet	441	43.3	312	40.5
Participates in my activities on the Internet	310	30.5	231	34.2
Helps me with difficult things to be done on the Internet	487	47.8	483	62.0
Explains to me why specific web sites are good or bad	583	57.3	506	65.0
Advises me on how to use the Internet in a safe manner	602	59.1	497	64.0
Suggests ways on how to interact with other people on the Internet	505	49.6	392	50.7
Helps me if something upsets or frustrates me on the Internet	408	40.1	320	41.2
Peer Guidance				
My friends give me advice regarding safer Internet use	538	52.8	362	46.2
Explained to me why certain web sites are good or bad	541	53.1	374	47.7
Give me advice on how to interact with other people on the Internet	494	48.5	260	33.2
Helped me when I was upset or frustrated about something I experienced on the Internet	431	42.3	358	45.7

Parental actions	2010		2015	
	f	*%*	*f*	*%*
Actions of Teachers				
My teacher gave me advice on safer Internet use.	605	59.4	431	55.0
My teacher helped me on the Internet for something which is hard to find/do.	604	59.3	353	45.0
My teacher talked to me about the things that I do on the Internet.	521	51.2	234	29.8
My teacher explained why particular websites are good or bad.	625	61.4	463	59.1
My teacher gave me advice on how to interact with other people on the Internet.	509	50.0	328	41.8
My teacher helped me when I was upset or frustrated about something I experienced on the Internet	429	42.1	159	20.3
My teacher talked to me in general about what to do if something upsets/frustrates me on the Internet	448	44.0	187	23.9

Based on the results in Table 8, it can be seen that some behaviors changed between 2010 and 2015. For example, while parents' assistance rates for passive and external interventions have decreased, they are more involved in their children's use of the Internet. In addition, while no significant change existed in the percentage of peer guidance that the children receive, a decrease was seen in the amount of the help they received from their teachers.

Factors affecting the changes in mediation strategies for safer Internet use

Table 9 presents the results of the content analysis of data from the interviews with the children, parents, teachers, and school administrators that were used to determine the influencing factors related to the change in guidance and mediating strategies of the children's social environments related to safe Internet use.

Table 9. The factors influencing the changes in the guidance and mediating strategies of the children's social environments

According to The Children	n	*f*
Negative incidents that children experience on the Internet	10	10
Increasing Internet access at home	6	7
The underachievement of children at school	5	5
According to The Parents		
Internet-related news published in the national media	15	16
Increased Internet experiences of parents	12	14
Negative incidents that children experience on the Internet	11	11
Safe Internet programs in the visual media	4	4
Promotions in the media about safe Internet use	2	2
According to The Teachers and School Administrators		
Internet-related news published in the national media	22	25
Increased Internet experiences of teachers and school administrators	17	20
Seminars on the subject	10	10
Official memos from MoE	3	3

Based on the above results, it can be seen that the increase in the amount of national news related to the Internet has changed the strategies of the social environment regarding guidance and mediation on the safe use of the Internet.

Additional, some of the teachers felt that the increase in media news related the consequences of online risks influenced their strategies.

> *"Now I think that it is necessary to protect the students from negative situations related to their Internet use, as we see in the news. Apart from that, we also want to protect our students from similar negative experiences that we witnessed." (Teacher, Male, Bachelor's degree, 35).*

Two factors were prominent in regard to the changes in strategies: the increase in Internet access and the decline of academic achievement levels. It should also be noted that almost all of the children stated that neither they nor their parents participated in any seminars or workshops on safe Internet use.

DISCUSSION

The purpose of this research was to reveal the changes that took place between 2010 and 2015 related to Internet use, Internet activities performed, Internet use skills, online risks, coping strategies for such risks, and the impact of the contextual issues on such changes according to social environment. The results showed an overall increase occurred in regard to both Internet use and activities carried out on the Internet. Increasing Internet use by children can be considered a natural result of the developing technology. This situation is not unique to Turkey as similar trends can be seen worldwide. According to Internet Live Stats (2020), Internet use rates have increased worldwide.

Past studies on this topic have shown that Internet use rates in Turkey have consistently increased (Hasdemir, 2013; Yılmaz, Şahin, Haseki, & Erol, 2014), while the age at which children start participating in Internet activities has decreased falling (Kaşıkçı et al., 2014; Karahisar, 2014; Chaudron, 2015; Croll, 2016). This decrease can be assessed from different angles. For example, it can be seen as a positive development when one takes into consideration the positive benefits that children gain from the Internet. However, when viewed in the context of online risks, it has negative results. Many reasons have been shown for the increase in children's Internet use, including increased access (Vincent, 2015), increased use of the Internet for educational purposes (Özyurt & Özyurt, 2016), an increased use of smartphones (Lenhart, 2015; Turgut & Kursun, 2020), a diversification of Internet activities, and the Internet becoming a part of the social communication system (Yaman, Eroğlu, & Peker, 2011).

An overall increase has also occurred in regard to the activities that children perform on the Internet. The most notable increases can be found in watching movies, listening to music, uploading/sharing photos and videos, and sharing social networking (Lenhart, 2015). It is noteworthy that these Internet activities are generally used for entertainment purposes (Chang & Law, 2008). Studies have also shown that children's use of the Internet for school work has decreased (Mascheroni & Ólafsson, 2014; Akbulut, Dursun, Dönmez & Şahin, 2016), which seems to be a natural consequence of the increase in recreational activities on the Internet (Pappas, 2012). The use of media in the direction of individuals' specific needs is supported by the theory of uses and gratifications (Rubin, 2002). However, this decrease might also be due to the increase of devices (i.e., tablets, smartphones) available to children on which they can access the Internet (Aslan, Turgut, Göksu, & Aktı Aslan, 2019; Chaudron, 2015; Park, 2015).

An increase can also be seen in regard to the children's Internet use skills since 2010, which is likely due to the fact that they and their parents use the Internet more often. The internet access rates of children and their access to Internet available devices naturally increase due to parental support (Hasdemir, 2013; Yılmaz et al., 2014), which undoubtedly positively affects the children's Internet use skills. It can be accepted that the Internet use skills of children tend to increase at a limited level as children's Internet use and experience levels increase. Past research has shown that, while children mostly learn their Internet use skills via self-learning (Karahisar, 2014), their receive important support from their social environments, especially friends, regarding their Internet use skills (Numanoğlu & Bayır, 2012). From this point-of-view, it can be said that the strategies used to cope with the online risks faced by children in Turkey will become more important as children's Internet access becomes increasingly commonplace and as the average daily time spent and activities performed on the Internet continue to increase (Huang et al., 2009).

A large proportion of the online risks to which children are exposed have increased since 2010. Children are most exposed to content and messages on social networks (Kwan & Skoric, 2013). When we consider the increase of the time that children spend on the Internet (Hasdemir, 2013) and the increase of activities performed (Topçu, Yıldırım, & Erdur-Baker, 2013), their limited Internet use skills (Kaşıkçı et al., 2014) and insufficient social support (Arslan et al.,2014) may expose them to more potential online risks.

An increase has also occurred in the likelihood of children being exposed to nasty (pornographic) content and receiving nasty messages. The children in this study stated that the sharing of personal information on social networks (Tomczyk & Kopecky´, 2016) and an increase in the number of ill-minded people online are the reason of that. Parents, on the other hand, felt that this exposure occurred due to an increase in the popularity of online games (Arslan et al., 2014), an increase in the amount of inappropriate content on the Internet (Erdur-Baker, 2013), an increase in inappropriate advertisements on the edges of webpages, and the increase in children's social networking use (Sozio et al., 2015).

By looking at the Internet risk coping strategies used by children, it can be seen that a general increase and diversification has occurred. These results can be interpreted as an increase in children's awareness of online risks (Livingstone, Haddon, & Görzig, 2012). In addition, it has been determined that children are often supported by their parents and adults they trust. In fact, the resulted showed that parents were more actively involved and supportive of in their children's Internet compared to the data from 2010, which can be regarded as a positive development for children in the context of online risks (Van Petegem, de Ferrerre, Soenens, van Rooij, & Van Looy, 2019). However, children have difficulties sharing their experiences with their relatives due to their feelings of fear or shame (Karahisar, 2014; Young & Tully, 2019). Less than half of the children who are exposed to online risks and have problems share these experiences with adults (Ayas & Horzum, 2013), which could be caused by the cultural values and many other factors, including how the children are raised (Kaşıkçı et al., 2014). In this situation, the findings suggest that children try to solve the problems that they face themselves. Data also exists to show that Internet education in schools is also effective (O'Neill & Laouris, 2013). In this context, trainings and seminars can be held to directly affect the children's Internet use skills, while, at the same time, informing their friends, their largest circle of support, which will, in turn, further support the children's Internet use.

One of the effective solutions to providing the children with safe avenues for assistance in regard to Internet-related issues is to establish Internet help lines, called INSAFE which is a network of Safer Internet around Europe. These lines already exist in many developed countries of the world. By calling these lines, children can share their problems with specialists without introducing themselves. Then, they can receive advice on how to solve the problems. While children have been known to search for information related to safe Internet use online, they tend to use search engines only and not visit particular websites.

Children who cannot communicate with the people around them use the Internet to acquire new friendships (Akbulut & Günüç, 2012), which can influence the social support that they receive from their friends about safe Internet use. In this regard, it is important that parents and teachers show children sincerity and love in the social environment and communicate with them effectively (Koçak & Köse, 2014). However, research has shown that number of children receiving advice related to use Internet safely from their teachers also declined in the last five years. Several factors might have played a role in this decrease, including that in schools, teachers and school administrators often choose to block children from facing online risks by using restrictive techniques. In individual interviews with teachers and school administrators, they often stated that students learn many things about the Internet by themselves and teachers and school administrators are only involved in cases where students report problems. In addition, the teachers and school administrators reported that the negative situations that they have experienced on the Internet, the negative news that they have read about the Internet, and the seminars organized by the schools usually shape the social support that they provide the children in regard to safer Internet use.

CONCLUSION

In the study, the change in safer Internet use of children in Turkey between 2010-2015 and applications and studies related the safe Internet use carried out in Turkey were examined. Within the assumptions and limitations, the results obtained from this study are as follows:

Between 2010-2015 years:

- Children's Internet access have more personalized.
- Children's social environment play an important role in their Internet use and coping with the risks they face on the Internet.
- Children's use of Internet and the activities they perform on the Internet and the rate of grief due to Internet-based events have increased.
- Children's friendships in social networks have developed and the number of friends in social networks has increased.
- The Internet risks to which children are exposed have increased.
- Nowaday, children share more their personal information that may pose a risk on social networks.
- The children's Internet use skills have increased
- Children were faced with more sexually explicit content while using the Internet, and they were more disturbed by sexually explicit messages on the Internet.
- Children have improved themselves on coping with the risks they face on the Internet.
- Parents gave more permission to their children for their activities on the Internet, but took more precautionson technical restriction for their Internet use
- Children generally consider their own experiences for safe Internet use.
- On the use of secure Internet, the adverse events arising from Internet have an impact on the guidance and awareness strategies of the social environment.

Limitations and Recommendations

As a limitation, length of the survey was a disadvantage for the research. Each student was allowed one hour to complete the survey, which might not have been enough time. The researchers informed the children of the importance of their answers and this process, which was aimed at encouraging the students to provide truthful responses. At data collection sites, researchers observed children during the data collection process. If they felt that a survey was not responded properly, they were left from the data. As a last limitation, the sampling groups and locations for the 2010 (gathered at homes by professionals) and 2015 (gathered in schools by researchers) surveys were different, which might cause comparisons not to reflect the exact differences.

Following recommendations can be given in line with the results of the study:

- Since there is a significant increase in the Internet risks to which children are exposed, information and guidance activities can be carried out by increasing children's awareness on Internet risks on favour of preventing this increase.
- Due to the increase in receiving sexually explicit messages, it may be beneficial to guide children by informing them about the people they communicate with on the Internet or who want to communicate with them.
- Since the use of social networks and the number of friends in social networks increases, children can be informed about the use of social networks and be directed to issues such as security settings, friend requests, the share of personal information so as to prevent potential risks of this situation for them.

- Considering the increase in the rate of receiving sexually explicit messages, children can be informed what to do when faced with this situation.
- Since children generally access information about safe internet use through search engines, it may be useful to carry out the necessary studies for the developed portals to rank high in search engines.
- Due to the increase in the rate of facing sexually explicit content, the user can be informed about the content of the site by determining the profiles on the web sites as in the television programs.
- The reasons for the increase in children's Internet use skills and the effects of the increase in their Internet use can be investigated.
- The impact of the increase in children's Internet use skills on the Internet risks to which they are exposed and their strategies to cope with the Internet risks can be investigated.
- As the filtering softwares has increased the use of the effects of such softwares on children's Internet risks and exposure rates can be investigated
- As children's level of getting advice on safe Internet use have declined, the reasons for this decline and its effects on children's use of Internet can be investigated.

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