

## Monitoring of Children Online Activities

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**Abstract:** *The information and communication technology has passed the territorial and geographical borders. Nowadays we live at the time where every part of the society is influenced from the rapid development of information technology. Taking this into consideration, almost in every home there can be found different technological devices, and it is normal to expect a big influence of these devices into the life of every individual person. In this direction, the most sensitive part of the society are children. All of us, especially parents, are very interested for the health education of the new generations. Therefore, we must be aware about the influence of information technology, in particular to our children. In this paper we investigate the level of influence of the information technology and its consequences to the development of children. The question that appears here and which we want to answer, is to detect the level of actions taken from the responsible institutions such as schools, other institutions, parents, etc, in order to improve this field, which is very important for healthy upbringing of children. Also we want to detect what are the negative consequences of the use of these technologies. What is the impact of these consequences. What actions are taken in order to improve and to stop the negative phenomena. In order to prevent the society from these negative phenomena, in the beginning we must define and detect the direction and the form in which they appear. To achieve this, first we must have sufficient and relevant information. All the above mentioned questions can be analyzed if in the beginning we get an information about the reason of pushing the children to use these devices with such an intensity. Therefore, monitoring these activities of children is of big importance. Actually, these aspects are the subject of the research in this paper. In the beginning we detect the opinion of the parents. Then, we continue with the next step which is the identification of different forms of such a monitoring. Finally, we give some significant dependencies among the factors which are defined as variables.*

**Index Terms:** *Information and communication technology, Monitoring of online activities,*

### I. INTRODUCTION

Computer games, e-mail, internet in general, smart phones are integral part of our lives. [2]. “Our brain” is influenced from the virtual world. The new technology devices, games, social networks etc, have a big impact on the life of every individual, in particular children [3]. This reflects a new behavior of teenagers [2]. The studies have shown that between 93% and 97% of teenagers who use internet, are using it every day. Teenagers use digital devices for different purposes [4]. In Great Britain 100% of children of the age from 12 to 14 use internet. In Israel this number is 98%, in Check Republic 96%, in Canada 95% and in the USA 88% [5]. We want to analyze the form and the level of the monitoring of these activities by parents. Also we want to find out is there any kind of support by parents in order to achieve the proper use of online resources. Do they give advices and do they check the web-history of their children.

From the research done in [7], one can conclude that children of age from 8 to 18 are passing approximately 6,5 hours per day in front of the desktop. Adding few more hours one can achieve the

time which is the official daily working time. Our aim is to analyze the level of presence of children in the virtual world, its influence to their behavior, and the role of parents in this process. 1 from 3 people consider internet as important as the air, water, food and home [8]. Internet dependence can touch everyone, regardless their age, gender, economical and social status [9]. The time that we spend using internet has negative impact on realizing other activities [10]. Studies done in [11, 6, 10] have shown that the social interaction between teenagers is one of the most important activities, which is actually replaced by using internet. This implies no active sport life, no interaction between them, no direct communication between teenagers which actually forms virtual picture for the life, etc. In [6] one can find a study that shows that using internet is followed by the process of losing friends, increasing the depressive reactions etc.

Parents can play an important role in monitoring the online activities of their children. They can monitor the digital activities in different forms. In the research done in [1], one can find an information that there are taken different activities from parents in order to monitor the online activities of their children of age between 13 and 17. From this study one can discover that 61% of the parents have made some kind of control regarding the WebPages that their children are visiting. Actually, 60% of the parents have made the control of social network of their children, 56% have followed the children on facebook, Twitter etc, and 48% of the parents have known the password of their children. An interesting fact is that 39% of the parents have used the methods for blocking or monitoring the online activities of their children.

## II. METHODS

The population of the study consisted from parents of teenagers from the region of Presevo and Bujanovc, Republic of Serbia. We surveyed 190 randomly chosen parents from 10 different schools. For this purpose we prepared a questionnaire, which consisted of four sections. Section A was about the general information, section B consisted from questions about teenagers and internet, section C was about teenagers and the social networks and the last section, actually section D, was about perceptions and opinions. In order to evaluate the use of internet were used specific scales as (i) Every day; (ii) Every week; and (iii) Every month, and each of these scales had its subscales. In order to evaluate the perceptions about different factors of using internet there was applied the Likert scale with options: (a) never; (b) sometime; (c) maybe; (d) often; and (e) always. In order to get a clear illustration concerning the interpretation of the gathered data, making conclusions and decisions, we have used the Statistical Analysis Software SPSS. In the beginning we analyzed some elements from the descriptive nature, then we continued with an analysis concerning some other statistical values and dependencies. For analyzing the obtained data in this research we used Cross Tabulations. This is done with the purpose to get clearer picture for the topic of discussion. We have used the chi-square test, the so called Pearson value in order to find the significant dependencies between different factors. The 0 hypothesis is that the variables are dependent. If the obtained value is less than the referent value of 0.05, then we can conclude that the hypothesis 0 is fulfilled, which means that there exists a significant dependence between the variables. Otherwise, we can conclude that variables are independent.

## III. RESULTS

In this research from all parents who have answered the questionnaire, 65% were men and 35% women. 52.2% were of the age from 31 to 40 years old, 41.1% from 41 to 50, 2.2% were under 30 years and 4.4% were above 50 years old. Concerning the education, 11.1% of parents had just elementary school degree, 54.4% had high school degree, 33.3% had Faculty degree and 1.1% had

master degree. Concerning employment, 55.6% of the parents were employed and 44.4% of the parents were not employed.

Concerning the age of the children, 15.6% of them were under the age 10, 45.6% were between 11 and 12, and 38.9% were above 13. 43.3% were boys versus 56.7% of girls. 95.6% are user of internet versus just 4.4% who have declared that they do not use the online resources. Concerning the use of social networks, 70% of children are users of at least one network versus 3.3% of answers that they do not use such a network. It is an interesting fact that 26.2% of parents have no information about this issue.

Concerning the time that they spend using internet 36.5% of parents did not answer the question and 5.6% answered that they do not know. Using this fact, one can conclude that maybe parents do not have that kind of information about their children. Concerning this question we have answers that 14.4% spend between 3 and 4 hours and between 7 and 8. 12.2% have answered more than 9 hours and the dominant answer was about the option between 5 and 6. In total one can conclude that approximately 60% of children spend more than 3 hours on internet.

On the table below we show the obtained chi-square result about the dependence between the gender of the children and the time that they spend by using internet. The obtained Pearson coefficient is 0.492. This number is bigger than the referent value of 0.05. This means that these two factors are independent. So, there is no relation between these two variables.

Fig 1. Chi-square test between the gender and the time spending in internet

|                              | Value              | Df | Asymp. Sig. (2-sided) |
|------------------------------|--------------------|----|-----------------------|
| Pearson Chi-Square           | 3.406 <sup>a</sup> | 4  | .492                  |
| Likelihood Ratio             | 3.525              | 4  | .474                  |
| Linear-by-Linear Association | .108               | 1  | .742                  |
| N of Valid Cases             | 58                 |    |                       |

Same is about the age and the time they spend using internet. There is no dependence because the Pearson value is 0.19. This means that with the accuracy of 81% the use is dependent on the age.

Concerning the frequency of use, 64.4% have answered that they use every day, and 35.6% have not given any answer to this question. Even there were answers indicating that the internet is used few times per day. This means that internet has a big influence to the life of the children.

Just in 34.4% of cases parents and children have the common online communication. This is an alarming fact because it shows that parents do not have enough control on how their children are using the internet. This is confirmed also from the answers concerning the question: do they have control what their children do when they use internet. 70% of answers were that they do not have any control versus just 25.6% who have answered that they do control.

In the table below we give the chi-square value concerning the dependence between the level of education of parents and the variable of controlling the work of children.

Fig. 2. Chi-square testi between the level of education and having information

|                              | Value               | df | Asymp. Sig. (2-sided) |
|------------------------------|---------------------|----|-----------------------|
| Pearson Chi-Square           | 27.232 <sup>a</sup> | 3  | .000                  |
| Likelihood Ratio             | 28.466              | 3  | .000                  |
| Linear-by-Linear Association | 23.899              | 1  | .000                  |
| N of Valid Cases             | 86                  |    |                       |

From Fig. 2 one can conclude that there is a very big dependence (100%) between these two factors. Hence, the level of education increases the monitoring level of parents.

Concerning the desire of their children to be online, the dominant answer was the option “often” with 36%, followed by the option “sometimes”. Concerning the fact do they feel anxiety using internet, just 22.1% of parents have answered that they have not noticed any kind of anxiety. This means that the dominant percentage of children have that kind of feeling and reaction, which is very concerning. 35% of children “often” do not tell the truth about the time spending online. Just 2.3% of parents have answered that they have not noticed such a reaction. Just 3.5% have answered that their children does not lose the sense of time when uses internet. 29.9% of parents have answered with “often” and 46.5% with “sometimes”. In 100% of cases there is a moment where they decide to refuse to be with friends as a result of wanting to be online using internet. 54.7% of parents have answered that internet has a negative impact for achieving good results at school. 45.3% of parents have answered that “sometimes” they have experienced with emotional reactions of their children as a result of using internet. 30.2% have answered with “often”. Just 15.2% have answered with “never”. Also in 79% of cases there is an opinion that internet has a negative impact on the normal sleep of their children.

47.7% of parents have an opinion that internet “often” has an informative role for their children, 19.8% of them have answered with “always”, etc. There was no answer with the option “never”. This means that parents in general think that internet has an informative role for their children. On the other hand, 43% of parents agree that internet “often” has an entertaining role for their children. 26.7% have answered using the option “always” etc. For this question also as for the previous one, there was no answer with the option “never”. Hence, each parent has an opinion that, somewhere more and somewhere less, internet has an entertaining role. Concerning the possibilities for creating a new relationships with friends and family members, 44.2% of parents have answered choosing the option “often” and 25.6% have used the option “always”, etc. Again there was no answer with the option “never”. Thus, we can conclude that internet also has an important impact in creating a new relationships.

Concerning the behavior of their children, 42.2% of parents think that “sometimes” internet has an influence to their behavior, 39.5% have answered with “often”, the option “rare” and “always” are chosen with 7% and 9.3%, respectively. There is no answer with “never”. So, the general opinion is that, somewhere less and somewhere more, internet has an influence to the behavior of children.

Very concerning is that 97.7% of parents have not done any kind of monitoring activity to check how their children use internet. Just 2.3% of them have answered with “Yes”. This fact shows that parents do not have any picture about the use of internet by their children. Similar percentages have appeared for monitoring the quality of WebPages that their children use, about the issue if they have blocked some activity of their children, about checking the history of WebPages, etc. So, the general conclusion is that parents have no control about the online activity of their children. From this, one can conclude that the monitoring of online activities of children is not in a satisfactory level.

Concerning the case of giving suggestions, remarks etc., we have the following results: 57% of parents have answered that they have gave suggestions to their children versus 43% of parents who have answered with the option “never”. 55.8% of parents have discussed with their children about internet, versus 44.2% who have answered negatively. From the results one can conclude that more than half of parents have not done any kind of discussion with their children concerning the internet.

#### IV. SOME SIGNIFICANT DEPENDENCES

There is a very strong relationship between the age and level of surfing in internet by using cell phones. questionnaire he Chi-square coefficient is given at the Fig. 3:

Fig. 3 Chi-square test between the age and the level of using the cell phone

|                              | Value   | Df | Asymp. Sig. (2-sided) |
|------------------------------|---------|----|-----------------------|
| Pearson Chi-Square           | 17.012a | 6  | .009                  |
| Likelihood Ratio             | 14.742  | 6  | .022                  |
| Linear-by-Linear Association | 10.179  | 1  | .001                  |
| N of Valid Cases             | 52      |    |                       |

One can conclude that the Pearson coefficient is 0.009. So there exists a very strong dependence. This means that by the age is increased the level of usage of the cell phones. The same is about the use of internet outside home versus the age. In this case the Pearson value is 0.000 which means that the dependence is at a maximal level of 100%. The result is given in Fig. 4.

Fig. 4. Chi-square test between the age and the level of using the cell phone

|  | Value | df | Asymp. |
|--|-------|----|--------|
|--|-------|----|--------|

|                              |         |   | Sig. (2-sided) |
|------------------------------|---------|---|----------------|
| Pearson Chi-Square           | 56.559a | 8 | .000           |
| Likelihood Ratio             | 14.428  | 8 | .071           |
| Linear-by-Linear Association | .022    | 1 | .881           |
| N of Valid Cases             | 52      |   |                |

There exists a strong dependence between the level of education of parents and the fact if they have discussed with their children about internet usage. As higher is educational level of parent, more they monitor the online activity of their children. This dependence is 100% because the Pearson coefficient is 0.000.

Fig. 5. Chi-square test between the level of education of the parent and level of discussions concerning online activities

|                              | Value   | Df | Asymp. Sig. (2-sided) |
|------------------------------|---------|----|-----------------------|
| Pearson Chi-Square           | 34.046a | 3  | .000                  |
| Likelihood Ratio             | 37.125  | 3  | .000                  |
| Linear-by-Linear Association | 30.361  | 1  | .000                  |
| N of Valid Cases             | 86      |    |                       |

The same is obtained if one correlates the level of education versus giving suggestions concerning internet. The Pearson value is 0.000. So, more education, more suggestions and advices. These results confirm that the educational level of parents is very important for monitoring the online activities of their children.

Concerning the importance of internet and the concern of parents about negative effects of internet, the Pearson value is 0.000. So with a very high probability one can conclude that importance and the concern are in direct proportion. This strengthens the idea that taking the activities for education of children for proper use of internet is of very big importance. From this one can conclude that advices and discussions with the children as well as the monitoring the online activity, increases the responsibility of using internet and social networks.

Dependence exists also between the opinion about the importance of internet and the level of monitoring. The chi-square table is given in Fig. 6.

Fig. 6. Chi-square test between the importance and the level of monitoring

|                              | Value  | df | Asymp. Sig. (2-sided) |
|------------------------------|--------|----|-----------------------|
| Pearson Chi-Square           | 8.955a | 3  | .030                  |
| Likelihood Ratio             | 11.153 | 3  | .011                  |
| Linear-by-Linear Association | 8.423  | 1  | .004                  |
| N of Valid Cases             | 86     |    |                       |

The Pearson coefficient is 0.030. The conclusion is that as more a parent monitors the activity of children, deeper is the feeling that the internet has an important role in the life of their children.

The dependence about the level of monitoring and the frequency of discussions is also significant by the Pearson value 0.043. This means that monitoring the online activities increases the probability that the parent will discuss and advise their children about the use of internet. This confirms that advices and regular control by parents, has positive impact and increase the level of responsibility.

A logical dependence exists between the level of monitoring and the variable which describes for what actually children use internet. The Pearson value is 0.000. This means that increasing the monitoring the security of positive usage of internet is increased.

There is a significant dependence between the time spending online and the achieved success at school. The chi-square table shows that the Pearson coefficient is 0.048 which is less than 0.05.

Fig. 7. Chi-square test between the achieved success at school and the time spending online

|                              | Value               | df | Asymp. Sig. (2-sided) |
|------------------------------|---------------------|----|-----------------------|
| Pearson Chi-Square           | 18.643 <sup>a</sup> | 12 | .048                  |
| Likelihood Ratio             | 20.666              | 12 | .055                  |
| Linear-by-Linear Association | 2.132               | 1  | .144                  |
| N of Valid Cases             | 58                  |    |                       |

So, one can confirm that the time spending on internet is disproportional by the success achieved at school.

The same can be concluded about the time spend online and the problems that the children may have with friends and other members of family. The Pearson value is 0.006.

Fig. 8. Chi-square test between the time spending online and the problems with others

|                              | Value               | df | Asymp. Sig. (2-sided) |
|------------------------------|---------------------|----|-----------------------|
| Pearson Chi-Square           | 33.526 <sup>a</sup> | 16 | .006                  |
| Likelihood Ratio             | 34.342              | 16 | .005                  |
| Linear-by-Linear Association | .932                | 1  | .334                  |
| N of Valid Cases             | 58                  |    |                       |

Hence, more time children spend on internet bigger is the risk of having problems with friends and others. This confirms the fact that increasing the level of use of online resources has a negative impact in creating a good relations in society and family.

A strong dependence exists between the time that they spend using internet and the variables concerning the anxiety, telling lies, problems with sleeping and having emotional blast as the result of using internet. The Person's coefficients' were 0.001, 0.027, 0.031 and 0.047, respectively. All of these values are less than 0.05. This means that more time they spend using internet, bigger is the possibility to have anxious reactions, to tell lies, to have problems with sleeping, and to have emotional blasts. This confirms that excessive use of internet causes problems which reflects negatively in social aspect but also on the health.

There were also some independence relation. Such a relation is between the educational level of parent and their concern. One cannot say that parents with higher level of education are more concern. The concern is on the same level for each parent. This is due to the fact that the Pearson's coefficient is 0.815 which is bigger than 0.05; see the table below.

Fig. 9. Chi-square test between the educational level of parents and concerns

|                              | Value              | df | Asymp. Sig. (2-sided) |
|------------------------------|--------------------|----|-----------------------|
| Pearson Chi-Square           | 2.955 <sup>a</sup> | 6  | .815                  |
| Likelihood Ratio             | 3.229              | 6  | .780                  |
| Linear-by-Linear Association | .411               | 1  | .522                  |
| N of Valid Cases             | 86                 |    |                       |

## CONCLUSION

In this research we have analyzed the situation with online monitoring of activities of children by using the parents perspective. In the beginning we considered some concerns and at the end after

analyzing the results we tried to give some answers about them. For this purpose, besides the methods of descriptive statistics and frequency analysis, we have used also the crosstabulation and the correlation analysis in order to strengthen the conclusions. After each result we have given conclusions about the existence of dependence and the level of this dependence. The analysis covers a big range of aspects which can be implied by using internet, such as the advantages, consequences, benefits, disadvantages, etc.

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