

MODERN INFORMATION AND COMMUNICATION TECHNOLOGIES AND THEIR IMPACT ON CHILDREN AND YOUTH HEALTH

*Janka PORÁČOVÁ, B. TAYLOROVÁ, M. ZAHATŇANSKÁ,
I. ŠUTIAKOVÁ, M. BLAŠČÁKOVÁ*

Abstract: *The purpose of our study was to investigate the frequency of the use of modern information and communication technologies in relation to children and youth health problems. The research of girls and boys ages 13–14 and 17–18 was conducted at the Secondary Grammar School in Presov District. The results obtained via questionnaire suggest that all observed children and youth have been using computers for longer period than four years. The final outcomes showed no significant increase in health problems of 13–14 year-old children, the youth at the age 17–18 indicated the increase in problems related to bad posture, a need of glasses or feeling of eye fatigue.*

Key words: *information and communication technologies, health, education proces*

Introduction

Modern information and communication technologies have been introduced in all scopes of communication, marketing, banking industry as well as in education system. Multimedia computer with a suitable didactic software has been a natural part of educational programs providing the access to new information. Learning proces is then more attractive and interesting for both students and teachers. Functional literacy, ability to use modern information and communication technologies has become an integral part of life of an individual and society. (Dargová, 2001).

Technological conceptions emphasize the improvement of information intermediation via suitable technologies that supply human interaction with the real-world. Educational technology studies the proces of organization of pedagogical environment. Technological theory focuses on the application of a theory of learning system as well as the use of hypermedia tools and methods in education realm mostly in the area of interaction variety, creation of open models, environment independent on mediated content, cooperative education and multimedia presentation of information. (Ganajová et al., 2006).

The integration of ICT depends on certain didactic situation, certain subject field throughout which using appropriate methods set goals are achieved. How the personal development of a student will be affected depends on the use of computer didactic functions – motivational, informative, managerial and rationalistic (Schellenberger, 1991).

Together with the proces of ICT implementation in schools as well as at homes increase also the problems concerning the effects of such technologies on health condition of young generation. (Kimáková, 2003). It is also the result attributed to dipropionate amount of time devoting to ICT usage during the whole day.

Our study focused on investigation of a frequency of computer usage as well as health problems related to prolonged use of ICT equipment.

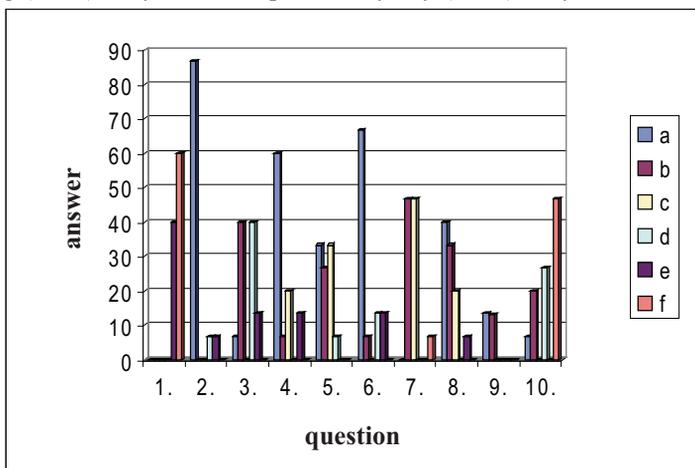
Materials and Methods

Students in our study were considered and evaluated according to their age (13–14 and 17–18) and gender (boys and girls). The questionnaire was provided to 15 girls and 38 boys (total number of 53 students) ages 13–14 and 48 girls and 32 boys (total number of 80 students) ages 17–18 years. Questionnaire consisting of 10 questions focused on investigation of work extent and time to which a computer was actually being used among observed children and youth in the last four years as well as health problems related to computer usage.

The survey was conducted on students of Secondary Grammar School in Poprad (Prešov District). The final results were expressed at percentage.

Results and Discussion

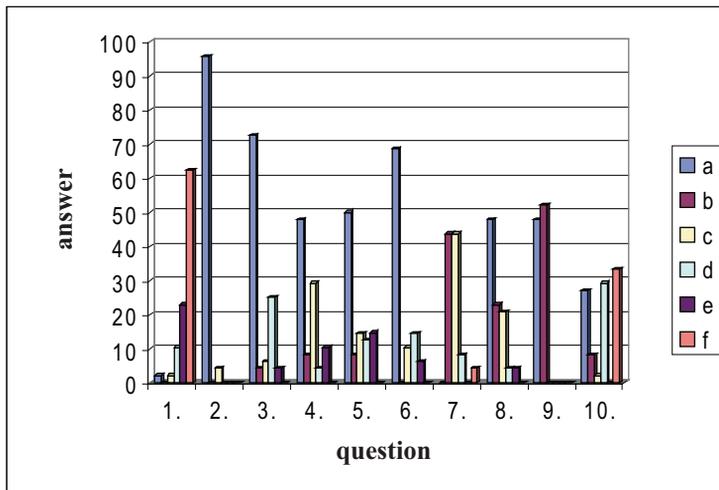
The results were obtained via questionnaire (Enclosure 1). Girls at the age of 13–14 have been using a computer for longer period than 4 years (60%), mostly they have computer acces at school (86.6 %), at home they use computers for playing games and chatting (40 %), they use a computer every day (60 %), they use the Internet daily



Graph 1: Results for girls ages 13–14 years

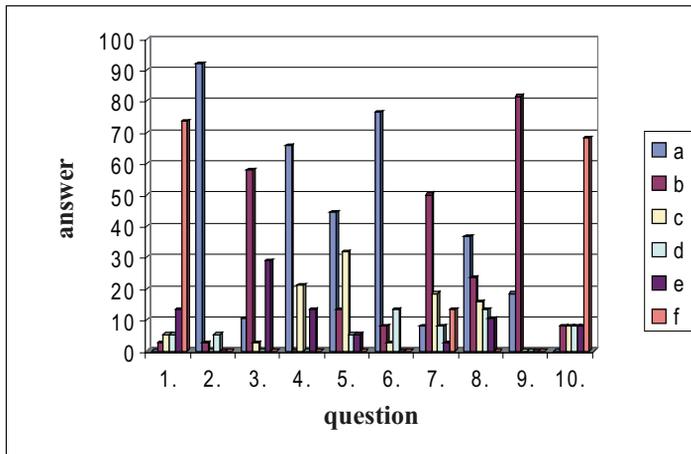
(33.3 %), once a week (26.7 %) or several times per week (33.3 %), mostly they connect to the Internet (66.7 %), at school they use a computer mainly in classes of physics (46.65 %) and biology (46.65 %), 40 % of girls usually spend on a computer for one hour per day, most of the respondents do not wear glasses (86.7 %) and have no health problems (46.6 %) – graph 1.

Girls ages 17–18 years have been using computers for more than 4 years (60%), mostly they have computer access at school (86.6 %), 64.6 % of girls use a computer for learning , 47.9 % of girls work on a computer daily and 29.2 % of them at least few times per week only during working days. They use the Internet every day (50 %), few times per week (14.6 %) or per month (14.6 %). Mostly they have internet access at home (68.7 %) or at their relatives‘ or friends‘ home (14.6 %), at school they use a computer in the classes of physics (43.7 %) and biology (43.7 %), they work on a computer one hour per day (47.9%), there is a minimum difference (4.2%) between the number of girls ages 17–18 who wear glasses (47.9 %) and who do not (52.1 %). 27.1 % of questioned girls indicated postural changes, 8.3 % girls suffered from a headache, 29.2 % girls feel eye fatigue and 33.3 % of girls mentioned no health related issues (graph 2).



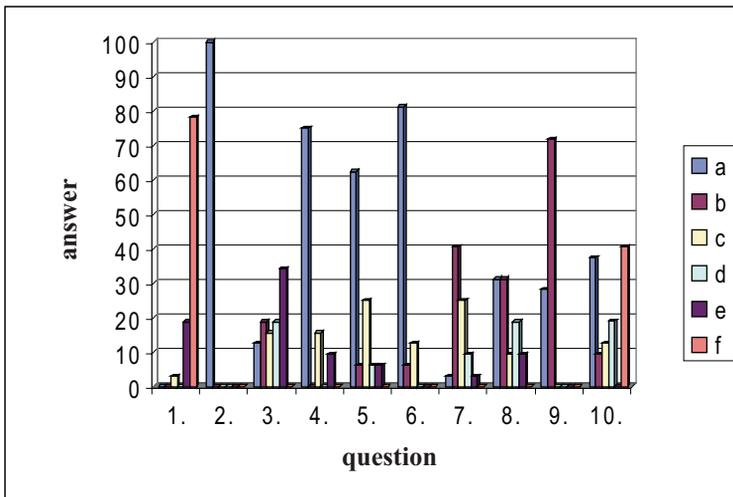
Graph 2: Results for girls ages 17–18 years

Boys ages 13–14 years reported computers usage for more than 4 years (73.6 %), mostly they have computer access at school (92.1 %), at home they use a computer mainly for playing games (58 %), they work on a computer every day (65.8 %), they use the Internet daily (44.6 %), few times per week (31.6 %). 76.3 % of boys access the Internet at home, 13.2 % of boys at relatives‘ or friends‘ homes . At school they perform a task on a computer mainly in physics (50 %), less in biology classes (18.4 %). 36.8 % of boys use a computer for one hour per day, most of the respondents do not wear glasses (81.6 %). The majority of the questioned boys did not complain about any health problems (68.4 %), 7.9 % boys recorded equal complaints about watering of eyes, headache and eye fatigue (graph 3).



Graph 3: Results for boys ages 13-14 years

Likewise in the previous groups, boys at the age 17-18 years (n=32) have been using a computer for more than 4 years (78.1 %), 100 % of boys work on a computer at school, the majority of boys use a computer for other activities than learning (34.3 %), they work on a computer daily (75 %), they use the Internet every day (62.4 %), 81.2 % of boys usually access the Internet at home, they use a computer at school in physics (40.6 %) and biology lessons (25 %). They work on a computer for 0-1 hour per day (31.2 %), the same percentage (31.2 %) of boys use a computer for 1-2 hours per day. 28.1 % of questioned boys wear glasses, 71.9 % do not need glasses. 28.1 % boys reported problems concerning postural changes, 6.3 % boys suffered from a headache, 9.4 % noticed the increase of watering of eyes, feeling of eye fatigue occurred in 18.8 % of questioned boys, 37.4 % of boys reported no harmful effects related to computer usage (graph 4).



Graph 4 : Results for boys ages 17-18 years

Conclusion

Our survey via questionnaire suggests that all questioned girls and boys have been using computers for longer period. There are no significant changes in health condition of 13–14-year-olds. 17–18 year-old youths indicate the increase in problems related to the postural changes and eyes problems resulting in a need of glasses and feeling of eye fatigue.

Literature

- DARGOVÁ, J. Tvorivé kompetencie učiteľa. Prešov: Privatpress, 2001, 204 s. ISBN 80-968608-1-X
- GANAJOVÁ, M.; KUKĽOVÁ, L.; KOŽURKOVÁ, M.; ORIŇÁK, A.; LICHVÁROVÁ, M.; PORÁČOVÁ, J. Nové technológie vo výučbe chémie a biológie u žiakov základných a stredných škôl k trvalo udržateľnému rozvoju. Kraków: Akademia Pedagogiczna im. Komisji Edukacji Narodowej, 2006, s. 122–126. ISBN 83-85886-12-5
- KIMÁKOVÁ, T. Úloha antioxidantí – vitamínov. Bratislava: Životné podmienky a zdravie, 2003, s. 172–174. ISBN 80-7159-138-6
- SCHELLENBERGER, G. Didaktické funkcie počítača vo výučbe. *Informatika v škole*, č.4, 1991, s.15–16

Work was realised by financial supporting of the grant KEGA č.3/3004/05.

MODERNÉ INFORMAČNÉ A KOMUNIKAČNÉ TECHNOLÓGIE VO VZŤAHU K ZDRAVIU DETÍ A MLÁDEŽE

Súhrn: V práci sme sa zamerali na zistenie intenzity využívania moderných informačných a komunikačných technológií vo vzťahu k zdravotným problémom detí a mládeže (chlapcov a dievčat) 8- a 4ročného gymnázia v Prešovskom kraji, vo vekových kategóriách 13-14 a 17-18 rokov. Dotazníkový prieskum poukázal na viac ako 4ročné využívanie výpočtovej techniky vo všetkých sledovaných vekových kategóriách. U dievčat a chlapcov vo veku 13-14 rokov sa zatiaľ nevyskytujú vo zvýšenej miere zdravotné problémy, u 17-18ročných chlapcov a dievčat narastajú problémy súvisiace s nesprávnym držaním tela, prípadne používaním okuliarov a pocitom únavy očí.

Kľúčové slová: informačné a komunikačné technológie, zdravie, edukačný proces