Effects of The Computer Use for Children and Teenagers From Romania

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Abstract - The purpose of this study is to investigate how the computer is used by children and adolescents. The second goal is to explore the beneficial and harmful effects of computers use on children's mental and physical health. The studied group of samples comprised 439 subjects aged between 11 to 18 years old, who answered a questionnaire. Data has been processed statistically by using the Statistical Program for Social Sciences (SPSS). The school children spent usually much time on computer (more than 3 hours/day), while is some evidence of pathological use.

Key-words: Computer, Addiction, Children, Parents, Health, School, Physicians.

1. Introduction:

The computer has provided some wonderful opportunities for our children. Never before have had they had access to such a powerful tool for conducting school research, learning about new things, finding new recreation and entertainment, and communicating with their friends both around the corner and around the globe.

As a parent, you have probably thought at some point that your children know more about the computers that you do. Growing up with the technology, children sometimes adapt to the computers much more rapidly those adults. But having experience with the computer and the Internet is not the same thing as having experience in life. Although research on the effects of children's use of computers is still ambiguous, some initial indications of positive and negative effects are beginning to emerge [1],[2].

Studies of general computer users suggest that some children's may experience psychological problems such as social isolation, depression, loneliness, and time mismanagement related to their computer use and failure at school [3], [4].

The American Academy of Pediatrics advises parents to limit time spent with media and to emphasize alternative activities, such as athletics and physical conditioning, as well as imaginative play.

However, appears to corroborate parents' perceptions that home computer use is related to better academic performance. For example, early home computer use studies found that high school students who used educational software at home scored significantly higher than other students on computer literacy tests. Home computer use has been linked to improvements in general academic performance as well.

If in Romanian 2000 only 3, 6% of people had one computer in 2003 this number increased to 10%, conform report of Communication and Technology Minister. The report PricewaterhouseCoopers looks that rate increased of number of use by internet from Romanian it is one million/year. But, in 2006 5, 5 million people will access to internet.

Present study presents a descriptive analysis of the aspects of computer use by school children and the attitude of their parents in these matters.

2 METHODS
2.1 Design:
For collecting data concerning this issue we used a two questionnaires, one for the school students and one for the parents of the children included in the study.

The parents of children's answered too another questionnaire whit same subject in order to assure a certain degree of validity. These were aimed at highlighting: 1. Frequency of computer use by the students; 2. Interference of excessive use with school grades and social life; 3. Identification of a possible computer addiction. The data were processed using the SPSS statistics software, 11.0 version.

2.2 Participants
The survey included a representative sample of 439 school students. All the students come from 3 schools and 5 high schools of Easy, Romania. Among the 11 to 14 years old students, 47.3% were boys and 52.7% were girls. The 14 to 18 years old students included 42.3% boys and 57.7% girls.

2.3 Materials and procedure
All 439 school students were asked to answer the 34 questions from questionnaires. Most question suppose to rate on a scale the frequency of occurrence of a certain event or issue; some questions solicited an open-answer or to choose an answer from a list. The themes was chosen according to the objectives of the study and based on the previous research concerning the interests and needs of the school student at this age.

Usually, the questions addressed self appreciation behavior, cognition, opinion, or of the social relation of the respondent.

Survey method: the students answered to a questionnaire comprising 34 questions related to computer activities. Their parents answered a similar questionnaire including 35 questions,

addressing some open behaviour intended for comparing data collected from their children.

3. RESULTS
The results show that:
- Both the boys and the girls think that the computers are absolutely essential in today's society (90%); parents have a similar opinion (over 94%).
- More than 65.7% of the students have a computer at home, and, of these, over 50% are connected to the Internet. Table 1:

Ages	11 to 14 years old		15 to 18 years old	
Sex	GIRLS	BOYS	GIRLS	BOYS
have a computer	61.8%	65.2%	61.5%	75.9%
are connected to the Internet	32%	52.2%	53.5%	56%

- The frequency of computer use by the students shows that most of them use computers.
- Daily computer use time: Table 2:

	11 to 14 years old		15 to 18 years old	
	girls	boys	girls	boys
< 1h	33.8%	21.7%	32.7%	17.9%
1h - 3h	50.6%	52.2%	39%	34.2%
3h - 5h	10.4%	23.2%	18.2%	27.4%
over 5h	5.2%	2.9%	10.1%	20.5%

- As concerns the location where the students access the Internet, results show that over 60% of the prestigious junior high school and high school students have home computers, while the others go to Internet Cafés. Few of them, less than 10%, say they use computers at school.
- As for their spare time favorite activities, computer use ranks at the top, while sports activities, which play an important role in their development, are favored to a smaller extent.

Table 3:

	11 to 14 years old		15 to 18 years old	
	Boys	Girls	Boys	Girls
Meeting friends	II	I	V	I
Computer use	I	II	I	II
Sports	III	IV	II	IV
Films	IV	III	III	III
Other activities	V	V	IV	V

- More than 70% of the parents admit they do *not* or only *occasionally* discuss computer use with their children. This proves the fact that, although they bought a computer for their children, they do not supervise the way it is used. There are significant correlations between answers for equivalent items regarding parents-children communication and the frequency of their talks ($p<0.01$). When answering the same question, children confirm that they do *not* talk with their parents about their computer activities. Moreover, they admit that their parents do not even try to reduce the time they spend in front of the computer, although table 2 shows how many students use their computer for more than three hours every day.

We could not say that the family is not present when 11 to 14 year-olds and 15 to 18 year-olds use their computers, but this is rather a ***passive presence, vaguely responsible and lacking involvement.***
- Students aged between 11 and 14 prefer to use their computer between 14 and 18h (57.3% of the girls and 64.8% of the boys), which means that they are probably home alone in that time interval. Students aged between 15 and 18, prefer to use it after 23h.
- As for the purposes they use computers, they all prefer computer games, boys to a larger extent.
- Parents consider that, for better school results, their children should use their computers about 1.5h/day, but that 4.8h/day may result in negative school results. These same figures also appear in international surveys.
- This survey tried to identify aspects of computer addiction in junior high school and high school students, as well.
- Students prefer to spend more time alone with their computers, giving up their social or family duties; the survey also identified some situations close to school leaving by students.

4. DISCUSSION

We live in the age were computer and digital technology are always on the cusp of the great things. Using time-diary data, social researchers explored the impact of home computer use on school-age children. Students with home computers spent about three hours each week playing computer games and merely thirty minutes a week on instructional computer activities.[1] We find that more 30% of gymnasium student spent 3-5 hours per day and more 5% over five hours. But, 30% of high school students spent over 5 hours per day. Last studies show that only 2 percent of the children studied averaged more than eight hours of computer use per week. [1]

In another study — a three-year project known as HomeNetToo — University of Michigan researchers investigated the impact of providing home computer access to low-income families. As in the study described above, computer-using youth did not suffer any of the feared social effects, such as diminished family communication or lack of participation in social groups. [5]

In children's interactions with parents and other adult authority figures, one obvious effect has been the frequent reversal of the traditional parent-child relationship with the computer-savvy child taking on the role of teacher to the parent. With respect to interactions with peers, the effects of computer use again appear to depend as much on the type of activity engaged in while on the computer as on the amount of time spent in front of a screen.

Because of the importance of interacting with others to gain social competence, concerns have been raised that children who form "electronic friendships" with computers instead of friendships with their peers might be hindered in developing their interpersonal skills.

More than one-fifth of all children between ages 11 and 18 report having a computer in their bedroom, suggesting that the computer often may be used in solitude, robbing children of time for other social activities and interfering with the development and maintenance of friendships. Indeed, in our study we found that, among junior high and high school students, more than 60% of all their computer time is spent alone. However, much of children's "alone time" on computers appears actually to be spent extending social relationships by connecting with others through interpersonal communication applications via the Internet. An overview of the research examining the social effects of children's use of computers— from the impact of game playing on friendships and aggressive behavior to the impact of the computer on relationships and psychological well-being. [6] Most of the pupils from survey consider that the school performance is not affected when they are staying longer on computer. However, reviews of this literature typically conclude that the results are inconclusive. [7] Although benefits of computer use have been observed, they typically depend on a variety of factors (e.g., subject matter) in reading.[7],[8] As yet, there is no official psychological or psychiatric diagnosis of an "Internet" or "Computer" addiction. The most recent (4th) edition of Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) - which sets the standards for classifying types of mental illness - does not include any such category. In general, non-chemical disorders are not considered addictions. But, Internet Addiction or Computer Addiction is a growing concern in the Information Age.

Like addiction to drugs, alcohol, cigarettes, or caffeine, internet addiction or computer addiction is marked by symptoms of increasing tolerance, withdrawal, mood changes, and interruption of social relationships. Children and adolescents who have become addicted to the internet or computers will require increasing amounts of time online in order to feel satisfied. When they do not have access to the internet, they may have symptoms of withdrawal, which include anxiety, depression, irritability, trembling hands, restlessness and obsessive thinking or fantasizing about the internet.[8],[9]

There is, in many cases, a need for parents to learn a new range of skills, to be able to control the environment and use of the PC. If parents understand how to use the PC and the internet then they will be better placed to protect the children in their care from the more unpleasant aspects of the internet or the PC. As with other aspects of controlling the development of children, it may be necessary to develop a set of rules regarding the use of the PC and access to the internet. For examples: the parent may need to set times, durations, content, sharing etc., that the child should "sign up to" at the outset. Depending on the age of the child, it may be necessary for the parent to be present to act as a moderator when the child is on line.

The various sectors of the IT industry should continue to research better, cheaper and more user-friendly technical solutions to the potential dangers of computer. A focused education and awareness programme should be aimed at parents and other carers to advise them of the potential risks to children using computer and the internet and appropriate steps they can take to protect them.

Industry, user groups and children's organisations should jointly explore the possibility of introducing a scheme which would offer a simple way for parents to identify services committed to providing an enhanced standard of care for young users.

There are many ways parents/guardians can protect children when they are using a PC: advising and teaching them appropriate conduct on the computer; filtering and screening out undesirable material depending on the age of the child; monitoring the people that the child communicates with through the internet;

encouraging the use of the PC as a family activity, comparable with a trip to a museum, library, football game or cinema; reporting incidents where they feel the child or the family has been exposed to inappropriate material; communicating and liaising with education authorities when appropriate.

Physicians should encourage families to do the following:

- Families should be encouraged to explore media together and discuss their educational value. Children should be encouraged to criticize and analyze what they see in the media. Parents can help children differentiate between fantasy and reality, particularly when it comes to sex, violence and advertising.

- No child should be allowed to have a television, computer or video game equipment in his or her bedroom. A central location is strongly advised with common access and common passwords.

- Older children should be offered an opportunity to make choices by planning the week's viewing schedule in advance. Ideally, parents should supervise these choices and be good role models by making their own wise choices.

- Families should limit the use of television, computers or video games as a diversion, substitute teacher or electronic nanny. Parents should also ask alternative caregivers to maintain the same rules for media use in their absence. The rules in divorced parents' households should be consistent.

5. Conclusion

There is little doubt that children can at times become captivated by the intrinsic opportunities afforded by the technology of computers and the Internet. This may sometimes come at the expense of other healthy activities such as homework or normal social interchange. Although most children seem to innately correct the problem, parents and educators must be watchful for signs of misuse. Despite the alarm, research indicates most children are doing fine. Computers are certainly intriguing and captivating, and the Internet is most assuredly alluring with its research and communicative capacities.

But overall, technology can be considered a positive enhancement to growth. All the information emphasizes the need for more thorough studies on computer use.

References:

[1] Attewell, P., Suazo-Garcia, B., & Battle, K. "Computers and young children: Social benefit or social problem?", *Social Forces, 82*(1), 277-296, 2003; HomeNetToo Project Web site.

[2] Linda A. Jackson, Alexander von Eye, Frank Biocca: Children and Internet Use: Social, Psychological and Academic Consequences for Low-income Children. Available: http://www.apa.org/science/psa/sb-jackson.html

[3] Greenfield D.N. : The Net Effect : Internet Addiction and Compulsive Internet Use, 2000. Available: http://www.virtual-addiction.com

[4] Young K. et al..: Cyber-Disorders: The mental Health Concern for the New Millennium: CyberPsychology and Behavior, vol.3, nr.1,1999

[5] Subrahmanyam, K., Greenfield, P., Kraut, R., & Gross, E. The impact of computer use on children's and adolescents' development. Applied Developmental Psychology, 22, 7-30, 2001.

[6] Pew Internet and American Life Project: Tracking online life: How women use the Internet to cultivate relationships with family and friends, 2001. Available: http://www.pewinternet.org

[7] Roschelle, J. M., Pea, R. D., Hoadley, C. M., Gordon, D. N., & Means, B. M. :Changing how and what children learn in school with computer-based technologies. Children and Computer Technology, 10(2), Fall/Winter, 76-101, 2000. Available: http://www.futureofchildren.org.

[8] Subrahmanyam, K., Kraut, R. E., Greenfield, P. M., & Gross, E. F.: The impact of home computer use on children's activities and development. The Future of Children, Vol 10, pp.123-144. 2000. Children and computer technology. Los Altos, CA: The David and Lucille Packard Foundation. Journals/Publications Department. Available: http://www.futureofchildren.org