Prevention of cyber crime in the primary and secondary school
Prevence počítačové kriminality v základní a střední škole

Klíčová slova: počítačová kriminalita, prevence počítačové kriminality, druhy počítačové kriminality

Keywords: cyber crime, cyber crime prevention, types of cyber crime

Článek pojednává o současném stavu vědomostí žáků základních a středních škol o počítačové kriminalitě a o jejich postojích k ní. Na základě dotazníkového šetření byla získána data o postojích žáků k různým nelegálním činnostem při použití počítačů. Z výsledků vyhodnocení dat pak byly navrženy doporučení pro přípravu výukových materiálů, které by učitelé využívali při každé výuce pomocí počítačů zejména při výuce informatiky.

The article discusses the current state of knowledge of pupils in primary and secondary schools on cyber crime and their attitudes towards it. Based on the survey, data was obtained on the attitudes of students to various illegal activities when using computers. The results of the evaluation data recommendations were then proposed for the preparation of teaching materials that teachers use in every teaching using computers and in computer science.

Introduction

I have been focusing on the influence of information technologies (IT) within the programme School and Health for long time. Currently there is a rising feeling in the society that, especially at universities and at schools, nothing is sufficiently protected and that Intellectual Property is not respected. Is information technology teaching a participant in this rather bad state at school? Does school do enough when educating to improve the said state? And what about the parents of the pupils? How do the school and parents influence the state of the art? What percentage of pupils committing this anti-social acts is alarming? Is the society interested in improving the state or is there a need to chase the attitude of the society to this phenomenon?

School is the one that offers the first official meeting of children with the computer systems. Many children currently have the possibility to use computer at home, however, it is the school that should teach children to use information technologies the right way and instruct them on the dangers that can lead to committing criminal acts by wrong usage. Especially, it is needful to show how easy it is to breach the copyright or commit a criminal act on the Internet.

Within the research School and Health we implemented a research focusing on this problem. We used an Internet questionnaire available on the website:
http://boss.ped.muni.cz/kriminalita, by which we asked 120 pupils of 8th and 9th grades of elementary schools about their attitude to respecting Intellectual Property rights as well as about cyber crime generally. In researching this problem the following question arises: What is the percentage of anti-social acting that we consider serious? Is it 5%, 10%, 50%?

Cyber crime

There are no precise, reliable statistic data on the amount of cyber crime and economic losses of the injured parties, partly due to the fact that many of the said crimes have not been ascertained by the victims, plenty of the crimes have never been reported to the police, and partly due to the fact that the said losses are difficult to calculate.

Currently the term cyber crime does not have any officially defined content, nevertheless, there are more understandings according to which standpoint the authors take. Cyber crime

must be understood as a specific criminal activity, which can be committed with the use of information technology and where information technology is the object of a criminal act and the offender´s tool for committing a criminal act.

Types of cyber crimes

- Sabotage
- Identity card crimes
- Unauthorised usage of computers
- Frauds and forgeries
- Bank computer frauds
- Aircrafts
- Breaching copyright
- Computer viruses
- Abusing personal information of citizens
- Criminal activities connected with the Internet
- Information criminal activities

Research

Hypotheses:

H1. Schools do not educate pupils to correct attitude towards Intellectual Property protection and copyrights.

H2. Most of the pupils do not consider necessary to protect and respect copyright of software producers.

H3. Most pupils think that the existence of pirate servers offering music and films and without paying licence fees is right.

H4. Most pupils do not have proper orientation in the activities which are seriously anti-social.

Research results

H1. Question "**I have been instructed in the lessons what cyber criminality is and what punishments are administered to those who commit the said crimes?**" 85% of pupils answered that they had not been instructed.

**I have not been instructed in the lessons what cyber criminality is**
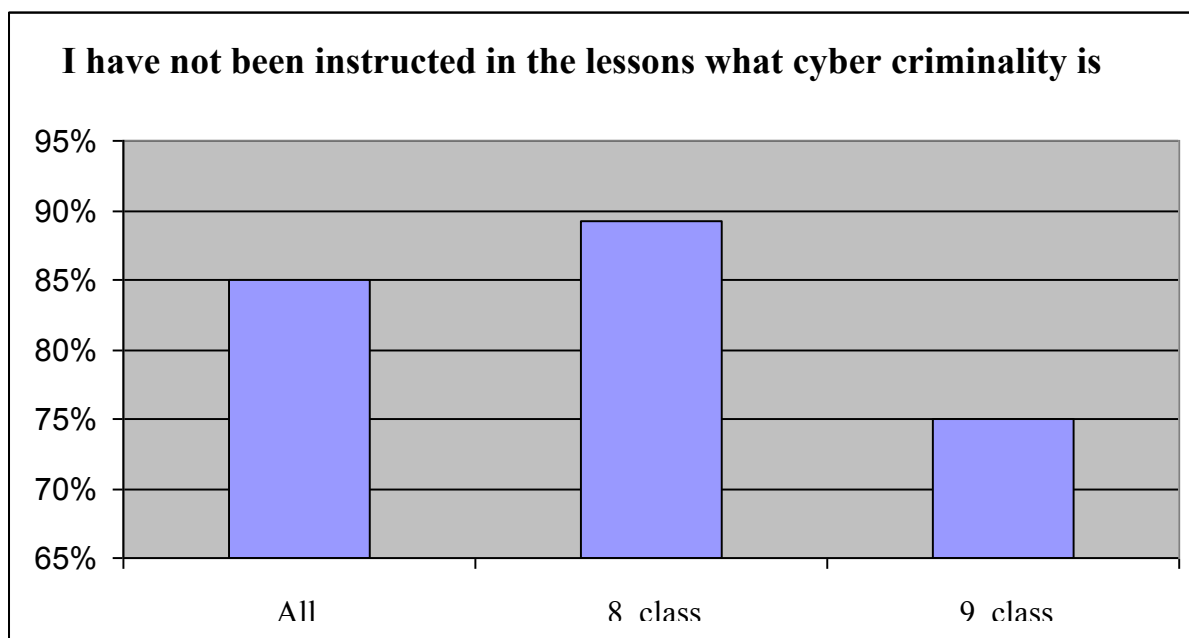
Graf 1.

The above stated result confirms the above mentioned hypothesis even though the difference in the answers of the eight and nine grades shows that the lessons brought certain improvements.

H2. Operatinalization:

- You have the opportunity to secretly copy some software, you have wanted for some time, will you copy it?
- Your parents bought you a new computer, which has only the operation system. How will you get the other needed software?
- What is a more serious act: setting up your computer with software you did not buy or stealing a box of chocolates in a shop?
- You have a software with a time limited licence, for example 60 days, after which the software should be bought otherwise it will stop working. You will find on the Internet that it can be solved without your buying the software. Will you choose this possibility?
- The software installed in your school is dedicated for use in schools only. You will get an offer to produce a paid application for market use. However you need to use the said school software. Will you take this opportunity even in case you know that the software can be used only for teaching purposes?
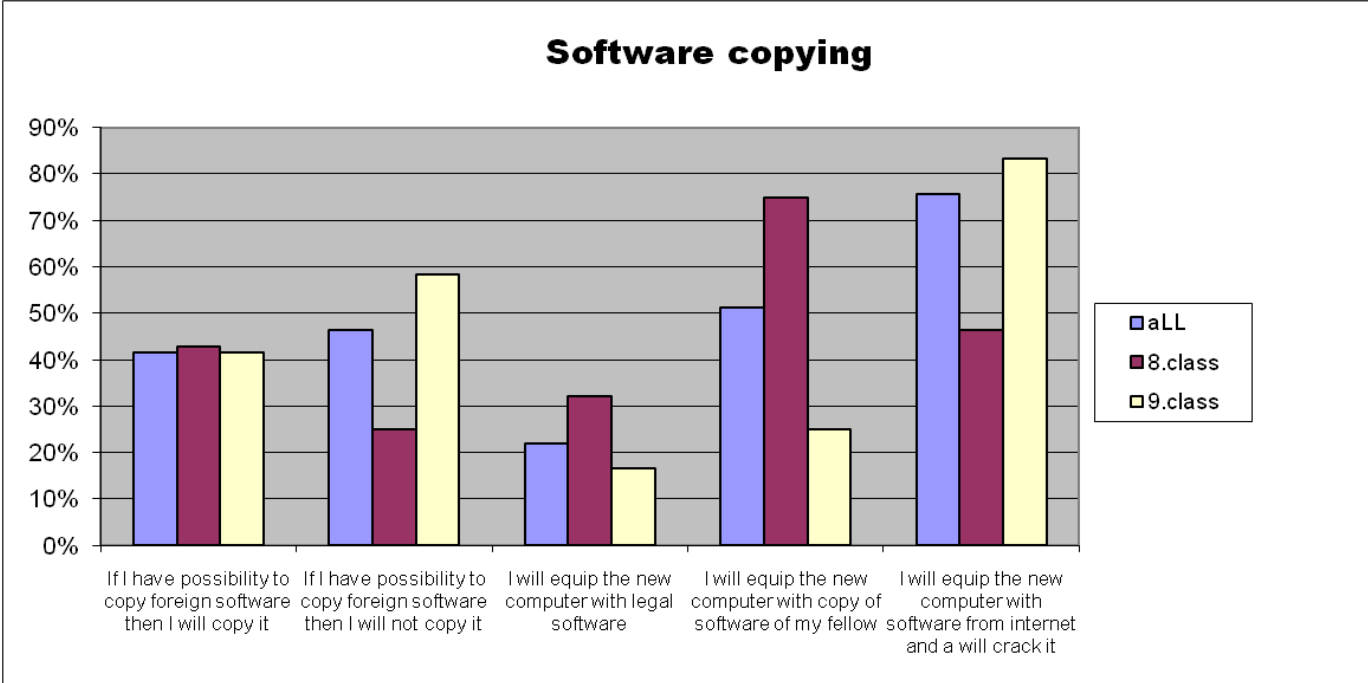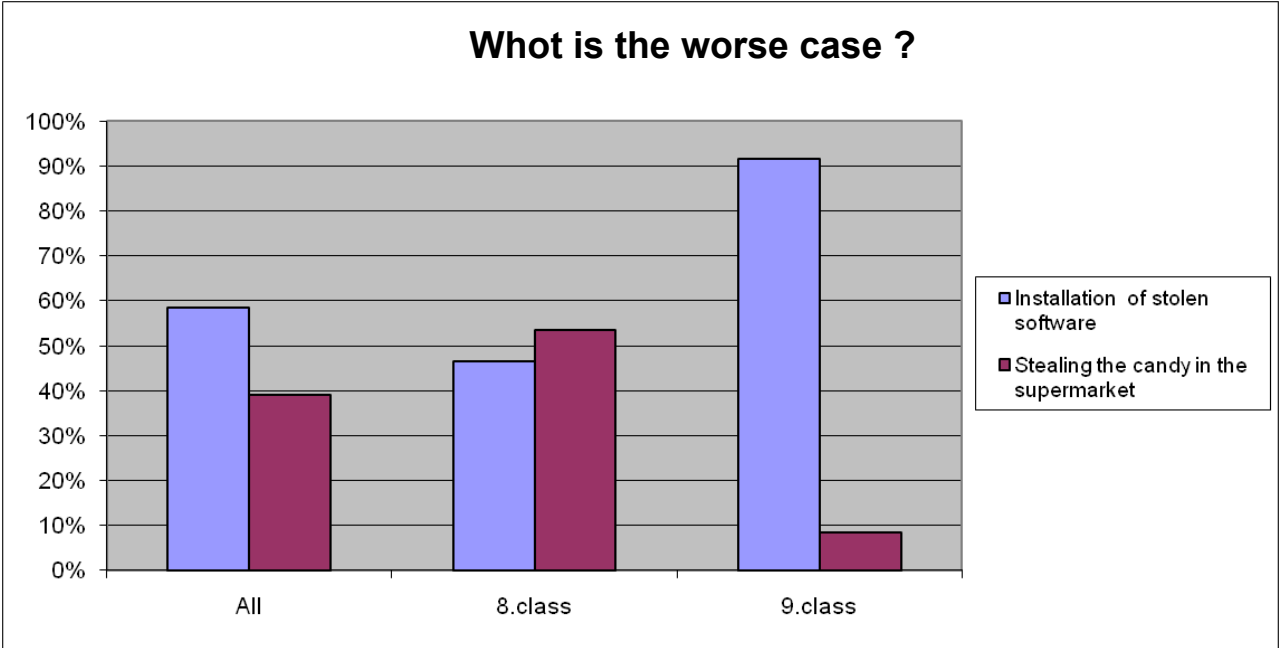

Graph 2

We came to a very serious finding that only about 20% of pupils set up their computer with bought software and that nine grade pupils, probably due to higher IT literacy, set up their

computer with bought software only in 17 % of cases. They try to get the needed software by stealing it in hackers´ ways, i.e. by cracking the copied software.

The 9 grade pupils are aware of the fact, as clear from graph 3, that using illegal software is a serious act; however, the stated fact, as clearly showed in graph 2, does not influence their behaviour.

We need to realise that the attitude of pupils to using illegal software is very serious and reflects the attitude of a large group of IT users. This acting serious for the whole society releases the prior set and much better kept ethical norms regarding copyright and Intellectual Property. Making these values relative leads, in my opinion, to later plagiarism and not keeping copyright.
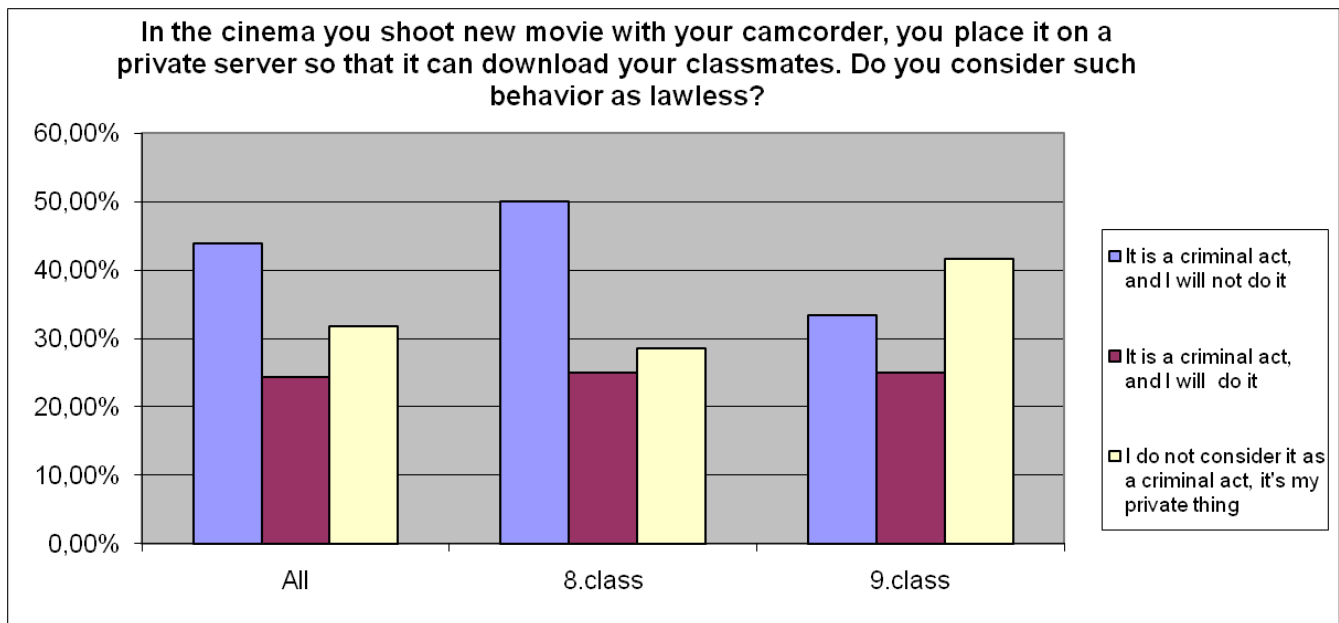

Graph 3
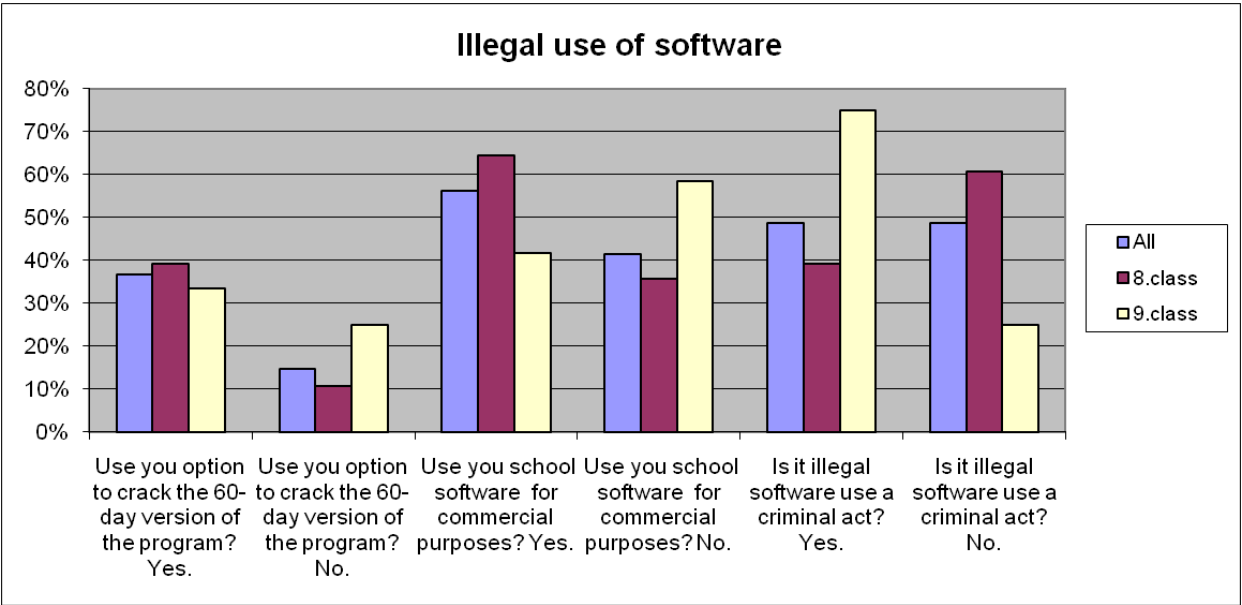
Graph 4

Graph 4 does not comply with graph 2: it is clear that 9 grade pupils are much more aware than 8 grade pupils that illegal use of software is a criminal act; however 82% of 9 grade pupils would use illegally gained software.

H3. **Operationalization:**
- You will record a new film by your video camera; you will place it on a private server for your schoolmates to download. Do you consider such acting illegal?
- Do you think it is right that there are servers on the Internet, which spread illegal copies of music CDs and films?
- Využíváš těchto "pirátských serverů" pro získání kopií?

Graph 5

It is interesting that with higher age the number of pupils who reject illegal copying and following posting films on the Internet even though they breach the copyright. 25% of pupils do not mind stealing a film, although they consider such an activity to be a criminal act.
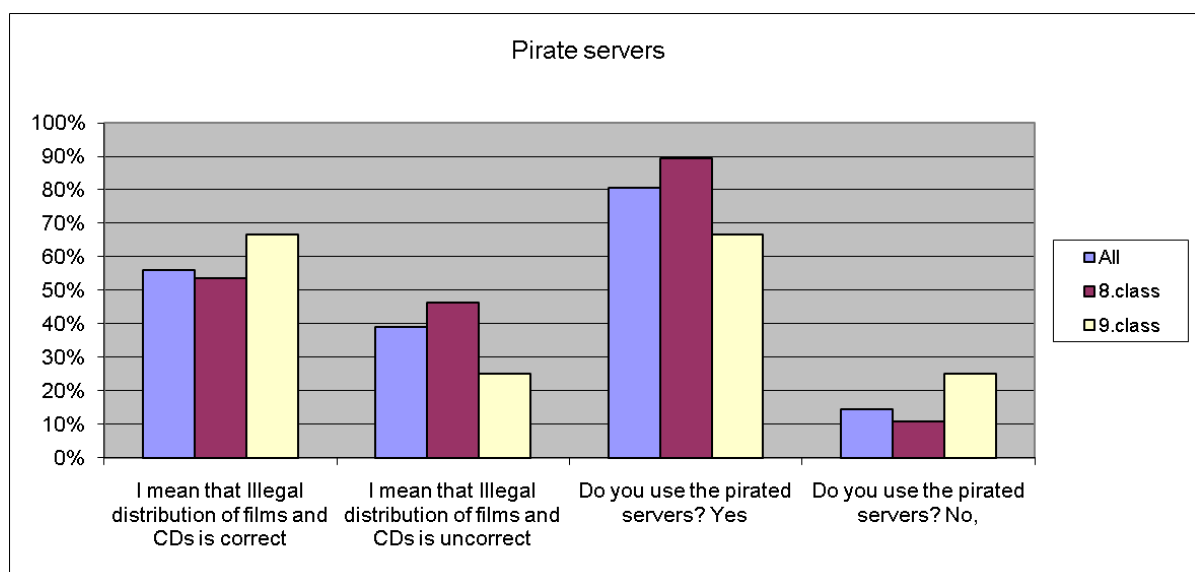

Graf 6.

About 30% of pupils consider breaching copyright to be their private matter and they are not thinking over the incorrectness of such acting. Insufficient emphasis on introducing the existence of the Law on Copyright to the pupils as well as ethical point of view stealing Intellectual Property leads eventually to publishing other authors´ texts, copying bachelor, diploma as well as dissertation theses.

80 % o pupils consider using music and films from pirate servers to be quite normal, which shows that pupils think that breaching copyright on the Internet is a common method for ascertaining audiovisual material. Both the stated facts can be seen in graphs 5 and 6, which confirms hypothesis number 3.

H4. **Operationalization:**
- What do you consider to be cyber crime:
    - A. Sending threatening and/or humiliating messages
    - B. Mediating the possibility to download film copies
    - C. Fraudulent financial transactions
    - D. Intentional spreading of viruses
    - E. Breaching licence regulations
    - F. Using others´ citations without the awareness of the author
    - G. Reading someone else's e-mails
    - H. Copying personal data
    - I. Publishing personal data
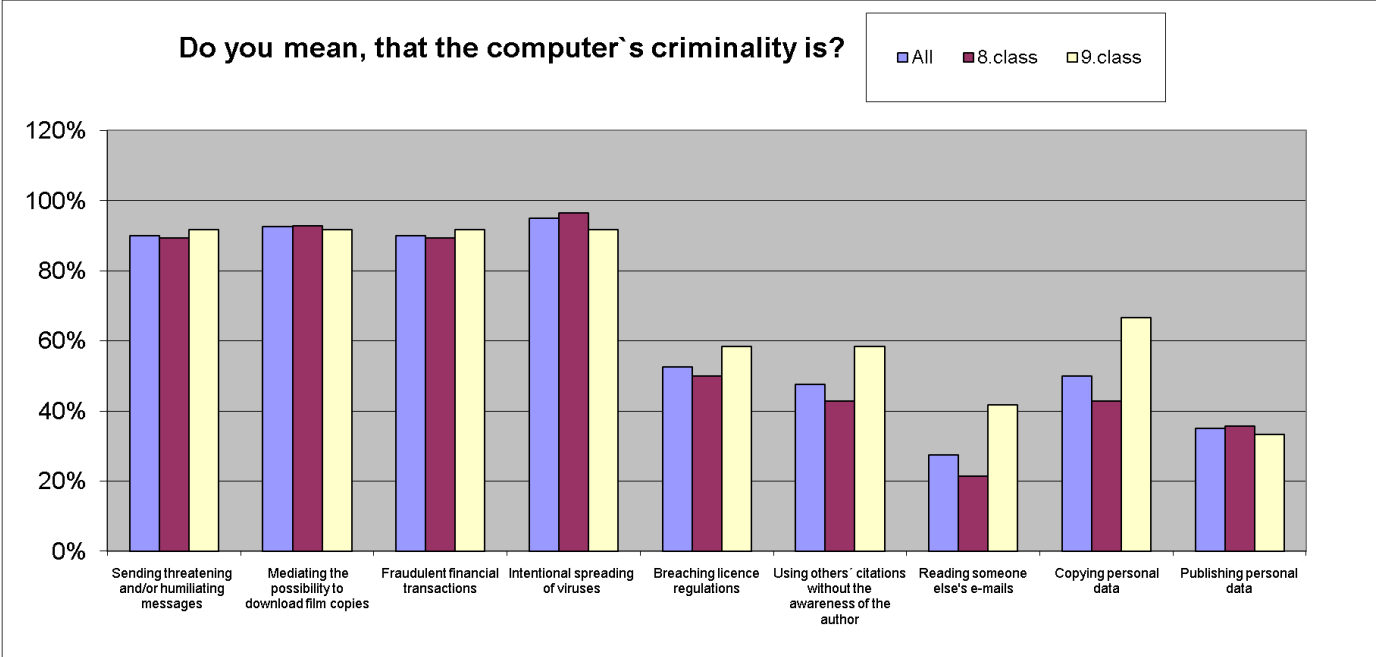
Graph 7

The above stated responses of the pupils show that a high percentage of pupils is aware of the illegality of acts A,B,C,D (graph 7). Quite paradoxical can be viewed the comparison of graphs 6 and 7 showing that even though they are aware of committing criminal activity, 80% of pupils uses the pirate servers. An interesting fact is that the pupils do not consider abusing personal information to be serious more than 50% and that they do not attribute this phenomenon almost any character of dangerous nature, which corresponds with the overall

situation in the society where the majority of people does not care much about the secrecy of their data.

Conclusion

This survey has shown that today´s teenagers are not bothered by cyber crime. Nevertheless, its consequences as well as neglecting prevention in the said area can become a serious problem. Many young people are already in conflict with the law or school regulations and later these acts can lead to copying final, bachelor, and diploma and dissertation theses. Sometime the desire for greater transparency (publishing bachelor, diploma and dissertation works on the university websites) can paradoxically lead to the fact that in the situation of the fall in the respect towards copyright across the society, cyber crime is becoming simpler and is on the increase.

School of all types should intensively work out prevention measures for increasing awareness as well as moral responsibility of their students when using the Internet for their publication work. It is necessary that all the pupils and students were informed on the obligation to quote the used material and honour copyright.

Literatura:

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