

# Ethical Education of Information Technology Users

Mentor Hamiti<sup>1</sup> and Besnik Selimi<sup>2</sup>

<sup>1</sup> Contemporary Sciences and Technologies, South East European University  
Tetovo, 1200, Macedonia

<sup>2</sup> Contemporary Sciences and Technologies, South East European University  
Tetovo, 1200, Macedonia

## Abstract

In recent years the integration of technologies and computers in the educational process is increasingly becoming an integral part of the entire education system. In this context, considering the large amount of users and the differences between them, the ethics of the use of Information Technology is an important research topic and it deserves a proper treatment. In this paper, we examine the current trends in the usage of Information Technology with respect to the ethical values and related problems. We try to find answers on what ethical issues we might expect in the near future and also discuss on the support that should be provided to users in maintaining ethical values when using Information Technology.

**Keywords:** *Ethics, Education, Information Technology.*

## 1. Introduction

The technology can enhance the education process in many ways. Research, presentation, communication, collaboration, problem-solving and creativity, are completely under the influence of today's computers and other technologies that have become an important part of our daily lives. At the same time, ethics as a study of knowing right from wrong, and a mechanism that need to be used conscientiously and continuously for maintaining the direction, stability and human society equilibrium, cannot be left aside from the overall trend of integrating the technologies in teaching the same.

Different sources provide different definitions for Information Technology (IT), but they all refer to the same thing. IT encompass all forms of technology used to create, store, exchange, and use information in its various forms (data, voice, images, motion, multimedia, and other forms), including those not yet conceived! Also it has to do with networking, hardware, software, the Internet, and the people that work with these technologies. So the term information technology refers to an entire industry [1]. Since we live in the "information age," information technology has become a part of our everyday lives.

## 2. Actual Information Technology Trends and Future Challenges

Over the past few years, all of us, either as citizens or as professionals of different fields, are monitoring the rapid development of science and the advancement of new technologies. At the same time, we are witnessing that the world is facing new challenges and perception crisis [1]. Lifestyle is changing gradually, conditioned by the use of current technologies. As an illustration, it's enough to mention that only in the last 10 years the internet and the mobile technology influenced the majority of businesses and services in moving online, such as transport, health, energy and environment, oil and gas, banking, entertainment, etc. Also, these technologies allow us to conduct many personal and professional daily activities, which are an inseparable part of contemporary society. So the conclusion is that the IT has revolutionized our social and business habits. It has evolved from a network of computers and information into a network of people [2]. And change is far from over.

Based on Internet World Stats, around 3 billion people are Internet users and after couple of years, once the Internet becomes genuinely mobile, over 4 billion users and billions more devices and objects are going to be connected anywhere and anytime [3]. The IT users differ among themselves in many aspects. They come from different countries, belong to different races and vary by culture and national traditions. And even those who come from the same country may have different religious background; they differ by the level of education, age, gender, etc. Therefore, we can freely ask regarding the whereabouts of ethics and its role in the use of Information Technology, having in mind the large number of users with different backgrounds?!

### 3. Ethics and Information Technology

All IT users, whether they are in or outside the educational institutions, should be informed about the concept that the Internet is not value-free zone, and that the Information Technology cannot be used by users as they want, without taking any responsibility towards other users. So, the Information Technology is not something separate from civilization, but a fundamental and modern component of human society.

Every user of IT should always keep in mind that off-line laws are also valid in the virtual on-line space. Although cyberspace is global, and laws are nation-based, every single user should not forget his responsibility toward the law even though there may be hundreds of different legal systems.

It should be noted that beside the advantages and benefits human society has from the use of Information technology, the possibility for IT abuse by various users always exists. In this context the role and the importance of ethics is undeniable. In particular, in advising and suggesting users to use correctly and fair the Information technology.

The figure 1 shows a triangle that represents the reciprocal interaction between the three mentioned components: ethical education, fair and correct use of information technology and respecting the legal framework.

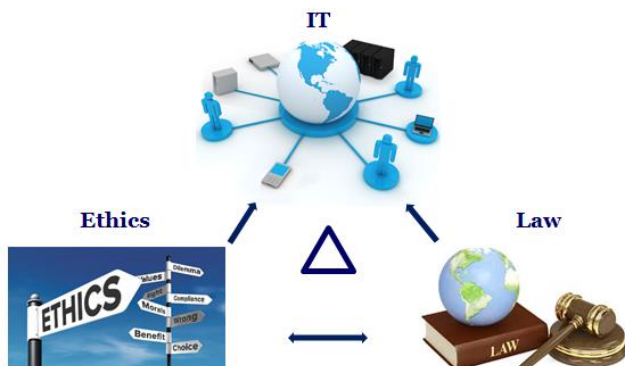


Fig. 1 Triangle: Ethics, IT, Law.

Ethical education is the one suggesting users on how to operate in various situations, such as: cyberbullying, cyberstalking, encounters with sexual predators, privacy, anonymity, freedom of speech, intellectual property, etc. So there are a number of questions in quite different fields and many ethical dilemmas for which, the explanation lies in IT ethics.

Differences in values between different IT users throughout the world can be resolved through educating

users of all categories and can improve through debates, conferences, trainings and campaigns for raising awareness and improving IT user behavior. In particular, this is the place and the role of IT ethics, in promoting sustainable and socially acceptable values for the human society.

The coordinated or personal contribution of all institutions, companies and organizations, whether governmental or non-governmental, private or public, are welcomed toward developing and advancing IT ethics, mainly because their members are also users of the IT and perform actions while using the same.

### 4. Case study: Ethical Education of Information Technology Users

Based on the fact that education represents a fundamental component in the ethical education of IT users, the Macedonian Unit of the International Network of the UNESCO Chair in Bioethics<sup>1</sup>, conducted a case study in collaboration with master students from the “Application of ICT in Teaching” study program, at the South East European University<sup>2</sup>.

The primary purpose of the research was to discover the actual status regarding the ethical perceptions of students and university staff, as a category that massively uses the IT, thus identifying the ethical dilemmas through the use of IT and extracting conclusions for further cooperation in support of IT users.

Apart from the academic staff, students who are active members of Bioethics Unit, gave their contribution for finalization of this project, by distributing and collecting the questionnaires, data processing, conducting interviews, organizing debates, performing analysis of the topics mentioned in chat forums, WWW published cases, which actually involved them in the research process itself and introduced them a vital problem in our everyday life.

Only the most characteristic findings from this research are presented in this paper.

#### 4.1 The need for ethical education of IT users

The research of the current state of ethical education of IT users was realized through a questionnaire in university premises, where 10% of the total number of students was involved. So, the number of students involved is within social reasonable scientific parameters.

<sup>1</sup> <http://www.unesco-chair-bioethics.org/>

<sup>2</sup> <http://www.seeu.edu.mk>

- The result from the written answer on the question “What does ethics mean?” was surprising because 44% did not answer it at all, and some answers did not correspond to the question. This indicates that students do not have enough information and knowledge about issues on ethics.
- When asked about the importance of the Internet as an integral part of a student life, 91% of the students see the internet as very important or important enough. There were also written comments saying that “how can one live without internet”.
- Surprising were the responses to the question on how much the students are informed about ethical use of IT? The difference between those who claim to have enough knowledge and those who had little or no knowledge at all was relatively small. Expressed in percentage, 53 to 47. This indicates that nearly half of the students which declare that uses massively IT do not have enough knowledge about the ethical use of IT, which means that this issue must be considered more seriously within the university!
- It is interesting to view the answer received on the question whether students prefer the use of social networks for private purposes only or for studying as well. Here in fact we are dealing with ethical dilemma! Student responses are separated with 51% declaring that social networks should be used only for private purposes. The other 49% believe that there is space for these networks to be used for professional education.
- In order to get feedback on how interested are the students on having on their curriculum courses regarding professional education of IT usage, from the answers analyzed only a relatively small number of students 19% feel they have no need for such courses. But it is worth mentioning that almost half of the students 47% expressed as indifferent about the matter. This leaves open the possibility that the interest for such courses within the curriculum to be even greater if offered to them.

#### 4.2 Monitoring the content on chat forums

Within the research conducted by a group of students about topics that are discussed in chat forums by Albanian language speakers, by using servers located in different countries, as most characteristic was highlighted the recorded speech in chat forum “www.parajsachat.com”.

Even though there are hundreds of different topics that exist with educative, cultural or scientific character, again different individuals use the chat forums for negative phenomena, as shown in the concrete case, where it is

suspected that the chat-group “paradise” sometimes is used for prostitution, act which is sanctioned by law in Albania, Macedonia, and Kosovo. The content of the text arises many dilemmas: what age are the concerned users, how many users of this kind exists, does this represents only anonymous on-line fun or one of the chat actors act as a macro while the other suffers as a victim...

In this case the Internet ethos is the one that should give an answer to the question whether there is a need to guarantee the anonymity of users by the Internet Service Providers or maybe the anonymity should be denied in preventing: prostitution, pedophiles, terrorism, etc.

Identifying such conversations through key words from technical aspect is very difficult or almost impossible, because users use local languages in different dialects, with many shortcuts depending from the places they come from. Therefore, in this case more reasonable would be raising their awareness through education as a preventive not to engage in such acts.

#### 4.3 The use of Social Networks

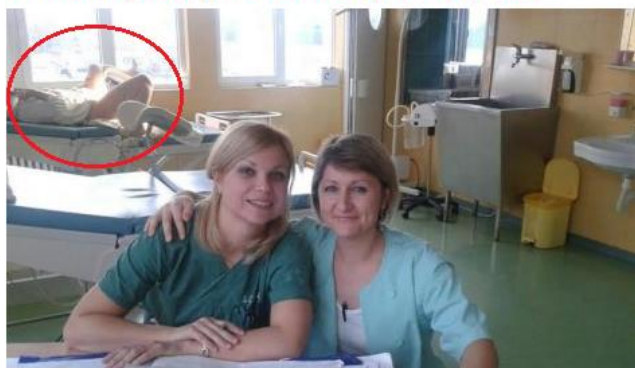
Facebook-s motto "Giving people the power to share and make the world more open and connected!" cannot be disputed by anyone. Facebook today counts over one billion active users and which is more important, 890 million of them are daily active users and 745 million are mobile daily active users [4]. However, since Facebook is used by different users and how they use it compared to the purpose for which it is dedicated is another topic for discussion!

Students identified the most egregious case which was published several years ago in Macedonian A1 TV web, which happened at Surgical Clinic in Skopje on 01 January 2010 [6]. As observed from the photos, the doctor and the nurse were communicating on-line through Facebook during the working hours on the New Years Eve, but behind them was visible a body of an unconscious patient, waiting for help from these doctors! This case raised many questions from the field of ethics, such as: where is the medical ethics, how can a picture of a patient be published without permission from the same, etc. On the video-recording published on Facebook, the doctor responds to other users by saying that behind her there is a "phantom" in which they do exercises. The case ended up in the court and according to the official information, the doctor got suspended from work. Perhaps the sentence would have been different in different countries!

This case is expected to serve as an example for raising awareness to the opinion in order not to repeat the same once again, since the information regarding the mentioned

case was spread all over international media. But it is surprising that similar case, as showed in Figure 2 was identified again in October 2014, but this time in our neighboring country in Gynecology Clinic in Nis, Serbia. This case was published in daily Blic, on 9 October 2014, titled "Madness in Maternity, doctor photographed in front of a naked woman who was giving birth" [6].

### BRUKA U PORODILIŠTU Doktorke se slikale ispred gole žene koja se porađa



POZIRALE: Dr Sanja Stanojević – Dikić sa koleginicom

Fig. 2 Madness in Maternity, doctor photographed in front of a naked woman who was giving birth<sup>3</sup>.

The doctor declared that she felt innocent and that someone published the photo on Facebook without her consent. We do not know how the case ended, but one thing is for sure, that the patient's privacy was violated, the photo was taken during the working hours and in area where taking pictures is prohibited. Again remains the dilemma, did Information Technology contributed on this occasion for identification and punishment for the professional medical ethic abusers or it did the opposite, the presence of Information Technology in such environment risks being abused. Anyway, let's hope that such cases will not repeat again!

#### 4.4 The unauthorized upload of web-content

All social networking Web sites have policies against uploading videos depicting violence or obscenity. But most Web sites do not have sufficient resources to review all material posted [5].

Exactly to this is related the following case that was a central topic in Slovenian media, in November 2014: "Sex scandal: The director and the math teacher recorded in

<sup>3</sup> Taken from:

<http://www.blic.rs/Vesti/Drustvo/501276/BRUKA-U-PORODILISTU-Doktorke-se-slikale-ispred-gole-zene-koja-se-poradja> [Accessed: 10.25.2014]

action!" [6]. The incident occurred at a secondary school in Maribor in Slovenia, in principal's office, where the sexual act between the director and math professor was recorded by the students of the same school. The recorded video was uploaded within few hours without the authorization of the protagonists and gripped social networks and other media throughout the Balkans. The case ended tragically when the director committed a suicide, while the students were questioned by police for unauthorized upload of the video recording [7]!

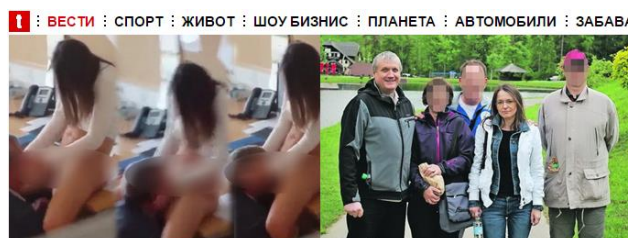


Fig. 3 Sex scandal: The director and the math teacher recorded in action! (+18)<sup>4</sup>.

There are many ethical dilemmas in this case. The legitimacy of the entire educational system was broad into question, the professional ethics and the morale of the employee. The act in question occurred on the premises of an educational institution for juvenile students. The Information Technology was used in an unauthorized manner as well as the distribution in social networks and media. If we analyze the consciousness of the director, it still remains an open question: If he was irresponsible he would have not committed a suicide, but if he was aware, how did he allow this thing to happen?! Enigmatic remains question in what extent the Information Technology influenced the tragic outcome of this case?!

## 5. Conclusions

Given the current trend of IT usage and based on the results of the realized research within this paper, the group members of Bioethics Unit extract the following findings:

- The Information Technology is used significantly, but the knowledge about the IT ethics are not enough.
- Large number of IT users with different levels of education, need to be informed regularly about issues that deal with morality and ethical issues in order to follow the actual trend for advancement of IT without negative impact on the society.

<sup>4</sup> Taken from: <http://tocka.com.mk/1/144230/slovenija-vo-sok-po-seks-skandalot-ucenicite-se-pod-istraga-za-samoubistvoto-na-direktorot> [Accessed: 10.25.2014]

- There is a need for better supervision of juvenile while using the IT.
- Ministries of Education and Science should undertake actions in increasing the number of courses in this field in high schools and universities
- Internet service providers have to take into account that services are used to prevent computer crime.
- Codes of ethics should be published in every working environment where IT is used in order to remind users about freedom, rights and obligations on using IT.
- Conferences and debates are considered quite productive in this respect along with the functioning of research centers and professional units within private and/or public institutions
- Governments need to consider whether the Law on IT needs to be updated in order to deal with new future crimes.

Such conclusions represent the preferences of Macedonian Unit of the International Network of the UNESCO Chair in Bioethics, in favor of ensuring stable ethical values while using the IT in general.

## References

- [1] A. Pajaziti, M. Hamiti and M. Isamili, "EACME Newsletters," 25 09 2008. [Online]. Available: <http://www.eacmeweb.com/newsletters.html>. [Accessed 10 10 2012].
- [2] M. C. a. G. Cardoso, *The Network Society: From Knowledge to Policy*, Washington: Center for Transatlantic Relations, 2006.
- [3] M. Kende, *Internet Society, Global Internet Report 2014*, Reston: Internet Society, 2014.
- [4] "Newsroom," 31 12 2014. [Online]. Available: <http://newsroom.fb.com/company-info/>. [Accessed 01 03 2015].
- [5] G. W. Reynolds, *Ethics in Information Technology*, Boston: Cengage Learning, 2014.
- [6] "Tocka.com," 18 11 2014. [Online]. Available: <http://tocka.com.mk/9/143033/seks-skandal-direktorot-i-profesorka-po-matematika-snimeni-vo-akcija-18>. [Accessed 20 12 2014].
- [7] "Tocka.com," 01 12 2014. [Online]. Available: <http://tocka.com.mk/1/144230/slovenija-vo-sok-po-seks-skandalot-ucenicite-se-pod-istraga-za-samoubistvoto-na-direktorot>. [Accessed 20 12 2014].
- [8] P. Christensson, "The Tech Terms Computer Dictionary," 2005. [Online]. Available: <http://www.techterms.com/definition/it>. [Accessed 28 02 2015].
- [9] M. Hamiti and A. Dika, "Challenges of Computers and IT in the Coming Decade," in *33rd International Conference on INFORMATION TECHNOLOGY INTERFACES*, Cavtat/Dubrovnik, 2011.
- [10] L. Mitić and B. Janačković, "Blic Online," 09 10 2014. [Online]. Available: <http://www.blic.rs/Vesti/Drustvo/501276/BRUKA-U-PORODILISTU-Doktorke-se-slikale-ispred-gole-zene-koja-se-poradja>. [Accessed 25 12 2014].

**Mentor Hamiti** has received a Master degree from the University of Prishtina, Kosovo, in 2005 and a PhD degree in Computer Sciences from South East European University, Tetovo, Macedonia in 2010. He is currently assistant professor with South East European University. He is chairperson of the Macedonian Unit of the International Network of the UNESCO Chair in Bioethics. His current research interests are in the fields of bioethics, natural language processing, e-learning, etc.

**Besnik Selimi** received a Ph.D. degree in Computer Science from Joseph Fourier University, Grenoble, France, in 2009. He is currently assistant professor with South East European University. His current research interests are in the fields of software engineering, software testing, web applications and services, etc.