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Codes of Ethics and Codes of Conduct for Using ICT in Education

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Codes of conduct and codes of ethics are a way of ensuring that positive impact in the community prevails. Tertiary education environments that have standardised ICT management show higher quality of performance if compared to those that have not yet standardised it. Moreover, characteristic of these environments is their strong willingness for change. University is a place of scientific communication and, thus, ICT and especially the Internet represent the entry point into a new developmental phase to which the best universities are strongly dedicated. In this way, ethics returns to the core of the mission undertaken by higher education institutions. Many countries around the world are adopting National Educational Technology Standards (NETS) that have been developed and are continuously updated within the ISTE Association and at the same time represent a code of conduct for students, faculty teachers, administrators and all others involved in high-quality study. Those standards must be supported by codes of ethics as they depend on the compliance with the relevant moral values.

Keywords: code of conduct, code of ethics, ethical maturity, idea of university, National Educational Technology Standards (NETS), ISTE

1 Ethical challenges of ICT

Heinz Zemanek, one of the last living pioneers of global computer science, pointed out in his lecture in Maribor that "High technology requires high ethics!" (Zemanek, 2006). This realisation emerged into computer science at the very beginning, which is a particularity in technical fields; although it would be a lie to say that it is present among all computer experts in the world. Norbert Wiener linked technology and ethics with his concept of "cybernethics" in his famous dissertation entitled The Human Use of Human Being from the middle of the previous century (Wiener, 1954). His example of thorough reflection and his warning against the ethical consequences of ICT use were followed by almost every significant scientist in this field, based on which James Moor was able to define the "law" which states that ethical problems caused by the use of ICT increase proportionally to the growth of the social influence of ICT (Moor, 2005, 117).

The need for reflection on social influence of ICT certainly has not decreased in today's omnipresent recession, as the allegations that the crisis was, among other things, brought about by the abuse of new technology posing as "new economy" are proving not to be mere fabrications after all. On the other hand, those who believe that ICT is the last hope for getting out of this crisis are more numerous every day (van Reenen, 2010)

Codes of ethics and/or codes of conduct are a way to decrease the negative influences of ICT use on the social development. They are based on a vision of excellence and a positive mission, which is the goal of both individuals and professional associations and have been present in some professions since ancient times (e.g. the Hippocratic Oath). Stuart Gilman (2005) argues for distinction between codes of ethics and codes of conduct, although both methods of regulation interlace and interchange in real life. If the code of ethics is directed more towards the moral values and principles, then the code of conduct is more a model of standard behaviour in predictable situations of a professional activity. Instead of trying to combine both approaches, the code of conduct could represent an extension to the code of ethics. It is necessary to update the standards of conduct constantly, especially in the case of ICT, which develops rapidly, whereas the leading values do not change quite as quickly. If we do not do that, then the codes should be very general. Furthermore, some kind of "confession service" would be required, which gives advice on how to solve real ethical issues. This often happens when lawyers are entrusted to create a code, which then immediately includes quasi case law of disciplinary bodies because they stick to what they know and are unable to think outside the

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box. Nowadays, school life is more involved with laws and rules than pedagogical principles (codes of conduct), and then people wonder why educational issues are being resolved with the aid of lawyers.

The statement that the emergence of the information society raises ethicality is confirmed by the fact that modern organizations that use ICT largely cannot exist anymore without codes of conduct. This also applies to higher education as indicated by Davies, Moen and Dykstra (2009), Papp and Wertz (2009), Yahr, Bryan and Schimmel (2009), McKay, Kidwell and Kling (2007) et al. Their common finding is that higher education environments that have a code of ethics differ significantly from those that do not because their ethical sensibility is considerably higher. The difference also stems from the "projective nature" of codes that imply some ideal situation for which one needs to work hard, which already include the tendency towards positive changes. Higher education reforms often begin with a moral critique of the existing situation and such reforms are usually successful. On the other hand, reforms without a moral agreement are unsuccessful even if they are "technically" impeccable. Codes speed up the positive transformation because they prioritise the following:

- trust and credibility,
- respect for the individual,
- the culture of open and polite communication,
- making an impact by being a model,
- implementing legitimacy,
- preventing conflicts of interests,
- implementing transparency,
- concentrating on content rather than form,
- loyalty, and
- performing good deeds.

Codes sense the "the spirit of time" sooner than reform projects, which Victor Hugo had in mind when he wrote: "Nothing is more powerful than an idea whose time has come."

2 Ethics of ICT and higher education studies

Jürgen Habermas (1988, 170) defines university as "a communication form for scientific argumentation". It represents the space organized for the intense exchange of information and knowledge where the role of ICT is essential. The allegations that ICT itself disintegrates the university by subordinating it to the general "infosphere", which is outside the university's autonomy and where the academic hierarchy is disrespected, are wrong and maybe even intended to stop the impact of ICT on change in general. In reality, ICT brings back the possibility of individualization which almost disappeared at the time of mass study programmes and Karl Jaspers (1923) would approve because he was aware of the fact that "The idea of university lives above all through students' and teachers' personalities and consequently through their institution. If we disregard this kind of academic life, then no institution can save the idea of university."

Also of relevance are the warnings about ICT often entering into education through the wrong door accompanied by promises of "edutainment" instead of hard work. However, Larry Sanger, co-founder of the popular Wikipedia, says: "The declaration that the Internet reduces the need for learning or that a good memory isn't required anymore has no footing and only demonstrates the lack of understanding of the nature of knowledge. The essence of good education is… the development of judgment or understanding of questions, which require the perception of various facts and the development of thinking abilities about these facts and about their applicability. If you do not have the required spectrum of essential facts in your head, then you will not be able to make a reasonable judgement because that depends on your comprehension of these facts, regardless of how quickly you can find them somewhere else." (Oblinger, 2010).

ICT brings into higher education the need for a new learning culture, which will be based on case studies (simulations), will respect different learning styles and will allow for individualization and more teamwork. We have been waiting for new didactics, which will use numerous possibilities of interactivity and more individual responsibility for learning achievements and project work. Elements of innovation in digitally supported learning are also global dimension of sources, comparative access, intercultural understanding, etc. Manja Klemenčič (2010) from Harvard states that quality of studies is the critical point of the Slovenian high education system, the (non-)use of ICT being indicative of this state.

Unlike "digital immigrants", i.e. the majority of older people, provided that they are not just "digital tourists", the majority of today's students are "digital natives". "Digital immigrants" use ICT if they cannot reach their goals otherwise. "Digital tourists" use ICT by coincidence only. "Digital natives", however, accept it instinctively and expect from the university that:

- it enables digital access and e-participation everywhere;
- e-business prevails on its "territory";
- it offers efficient infrastructure for digital communication;
- it works towards digital literacy;
- it uses Netiquette;
- it arranges relationships on the basis of digital law;
- it provides digital healthcare;
- it ensures digital security, etc.

With regard to digitalization, good universities are ahead of their peers and some elements of "territorial independence" are returning to the university autonomy in a surprising manner; elements, which were once required for academia to accomplish its mission in environments, unfriendly to reason. The Internet represents a good example of a regulated university communication system, which was also accepted by the "outside world", although academics must defend their freedom all the time, something that is incomprehensible to businessmen. Just in case, we also have independent academic networks. It is not surprising that the Internet is closely linked to "open source", the natural habitat of universities (although not ours which are that, and why?).

Robert Nash (2007) was the first to realize that learning of ethics must also be ethical. It is necessary to distinguish between three "moral languages" – the language of background beliefs (zero-level values), the language of moral character and the ethical language of codified rules and principles.

While learning ethics, the attention is focused on "the third moral language", whereas as far as the first two are concerned, it is better to be reserved. That is why students have difficulties to express:

- which main moral question occupies them;
- ethical conflicts they become aware of;
- holders of ethical discrepancies;
- possible consequences and challenges of ethical decisions;
- basic beliefs they cannot renounce;
- feelings during ethical acts;
- limits which arise from the character of personality;
- the relevance of the accepted codes of professional ethics;
- discrepancies between legal and ethical responsibility.

Daniel Callahan (1980), one of the "fathers" of biomedical ethics, set up the following five aims for learning ethics: 1. Stimulation of moral imagination. 2. Recognition of ethical problems. 3. Cultivation of the feeling of moral duty. 4. Development of capability for ethical analysis. 5. Patient solution of ethical disputes.

Ethicality is not an additional skill and we must not expect from ethics to be a "tool" which automatically separates good and bad instead of us. Ethicality is a personal attitude of an individual and only one rule was applied at the beginning of ethics development: imitate an ethical person and you will always be on the right track. Gradually, things became more complicated and it is not as simple to determine any more what ethical maturity is.

Lawrence Kohlberg (1969) constructed a model of ethical maturing which happens on three levels and in six degrees: (i) the first level is pre-conventional, where the egocentric view prevails, obedience due to fear of punishment and motivation due to pleasure are characteristic for this level; (ii) the second level is conventional, which takes into consideration the opinion of the environment due to which it is necessary to take on some social roles and respect the appropriate social conventions; (iii) the third level is post-conventional, when an individual actively co-shapes social agreements, is capable of critical judgment from the point of view of universal ethical principles. A diagnosis to find out which level our students are at is not easy and cannot be generalised.

Universities once had ethics as the core of their mission, which, along with academic freedom also gave them autonomy of research. In the absence of freedom, however, they converted to "ancillas" of some type of tyranny or another. A characteristic of scientific research is that it interferes with an unknown reality, which is not legally regulated; hence ethical responsibility is much more important for scientists. The university must transfer this attitude to its students by:

- providing awareness about ethics within the regular curriculum, which includes the understanding of ethical concepts, the skill of ethical argumentation, the knowledge of cultural values;
- accustoming students to trans-disciplinarity;
- providing training for ethical action, which includes critical skills, creativity, estimation of benefits and risks, foreseeing of future development;
- supporting personality development, which includes the understanding of ethical views and conducts, both one's own as well as that of others, respect for life, cultivation of the feelings of duty, honour and responsibility.

3 Standards of ICT use in education (NETS)

The International Society for Technology in Education (ISTE), with its headquarters in Washington (www.iste.org), was founded in 1979 when the Association of Computer Science (IACE) and the International Council for computer Education (ICCE) merged and represents today's most influential professional organization in this field. It establishes de facto standards, respected by UNESCO where ISTE is in charge of the ICT competency framework for teachers (ICT-CFT). Supported by a wide circle of professional associations (80), it is relying particularly on the research potential of Johns Hopkins University and SRI International.

ISTE established national educational technology standards (NETS) as follows: standards for students (NETS.S) in 1998 and renewed in 2007, standards for teachers (NETS.T) in 2000 and renewed in 2008, and standards for administrators (NETS.A) in 2001 and renewed in 2009. Standards for teachers are supplemented by technology leadership standards (NETS.TL), by technology facilitation standards (NETS.TF) and by computer science standards for acquiring additional qualification for computer science education (NET.CS). Besides the USA, these standards are also in use in forty countries around the world.

- Educational technology standards for students represent the code of conduct for digital media which support the following skills in students:
  - creativity and innovation;
  - communication and cooperation;
  - research and information fluency;
  - critical thinking, problem solving and decision-making;
  - digital citizenship;
  - understanding of technology operations and concepts.
- Educational technology standards for teachers represent the code of conduct for ICT, which direct their professional attention to:
  - facilitating and inspiring student learning and creativity;
  - designing and developing digital age learning experiences and evaluation;
  - revising a model of digital-age work and learning;
  - implementation of the principles of digital citizenship and responsibility;
  - engaging in professional growth and leadership.
- Educational technology standards for administrators in education represent the code of conduct for ICT, which include:
  - visionary leadership in the sense of complete integration of technology as catalyst for the transformation of the education system;
  - digital age learning culture;
  - excellence and professional practice;

  - systemic improvements;
  - digital citizenship.
- Additional standards for decision-makers about education technology and for maintenance staff who require the knowledge of:
  - technology operations and concepts;
  - planning and forming of learning environment and practice;
  - methods of teaching, learning and curriculum structure;
  - evaluation strategies and methods;
  - productivity and quality factors of educational practice;
  - social, ethnic, legal and humane views on ICT use;
  - strategies and tactics of project management.
- For teachers who are specialized for computer education, additional standards are required in order to obtain qualification for:
  - programming and developing of algorithms;
  - presentation of components, organization and functioning of computer systems;
  - presentation of data and information organization;
  - explanation of the social view on computer science;
  - curriculum planning;
  - teaching;
  - evaluation of the educational process;
  - one's own lifelong learning.

Among the abovementioned standards, there are many that express an ethical attitude and presume the respect towards ethical values:

- personal characteristics such as creativity, critical skills, responsibility, cooperation, communication skills:
- education with vision and pedagogic excellence;
- social, ethical, legal and humanitarian aspects of ICT use, which also include problems such as digital divide, or contents selection or censorship;
- digital citizenship.

"Digital citizenship" itself opens a wide ethical front because its meaning changed considerably during the last few years. Citizenship in general represents the complete participation in a state community, whereas digital citizenship means "online participation". It is related to the "digital divide" which was previously almost exclusively explained in the technical sense of accessing ICT. Now, the emphasis lies on the actual participation in social processes. Traditional participation required certain qualifications and the adoption of common ethical principles from people, which, under the circumstances of "online participation", becomes even more demanding. It is necessary to pay much more attention to "digital citizenship" now because exclusion from it causes fatal negative consequences for the economic, political and social position of an individual (Mossberger, 2007, 2).

The experience with the use of NETS warns us that these standards are often explained as "technical" by quoting statistics about available equipment, which is supposed to be the ultimate proof of meeting the standards. It is often overlooked that the C in ICT does not stand for "computer", but for "communication", which means content and not empty "channels". This vague situation brings numerous misunderstandings related to new technologies, including constant attempts of their "satanization" or some milder form of public discredit because they cause demoralization. Similarly, the press had been condemned as evil at its beginnings and today passes for "saintly" compared to the Internet. Nancy Willard revealed that the World Wide Web is nothing more than a mirror of the society, although clearer than all the previous ones, which is why moral "sins", which could have been hidden before, can be seen now (Willard, 1997).

At the same time, when ICT use is introduced to students, it is necessary to also teach them that:

- remote functioning without any feedback does not mean that we do not cause damage, guilt or pain to someone;
- the possibility of anonymous performance and, essentially, the reduced probability of being discovered or punished does not dismiss us from moral responsibility and bad conscience;
- the new digital environment with new and changed circumstances requires new and updated ethical principles;
- social discrepancies and corruption take on new forms and we must develop additional sensors to recognise them.

Humanity has no guarantee that ICT will work for its prosperity and not for its demoralization with its fantastic possibilities without a very serious effort of the whole educational pyramid, starting with the university, to teach people about new ethical risks. As it was already demonstrated at the beginning, the pioneers of computer science were aware of "walking a thin line" and warned against it, and hoped that the information age would be the victory of a morally mature society.

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