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Generative Model for Cyber Ethical Issues in Education

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Abstract

Introduction: *The development of social networks has demonstrated very clearly the synergetic effect of combining information and communication technologies illustrating their enormous impact on the modern society, which we now call information. The characteristic features of this information society are many and those that most significantly distinguish its virtual nature include abstractions such as independence of distance and location. At the same time, along with the positive nature of the information society in its rapid development, the bad aspects and expressions emerge of an increasingly complete emanation of real life in the virtual, cybernetic dimension. Instances emerge of social polarization and exclusion, new virtual cultures with low and even negative contributions. In this regard, questions arise concerning the ethical behaviour of participants in the cyber dimension of current and future social development. We will not attempt to define the term cyber ethics here because it is essentially no different from the philosophical concept of ethics. The only difference is only in its scope of cyber space with all its natural peculiarities.* ***The paper aims:*** *In the presented research, we draw upon the view that cyber ethics should give us an orientation as to what is right or wrong, good or bad, based on different subjective feelings, understandings, values, virtues and legal norms. It is clear that in the current social practice, ethical expressions have a marked cyber aspect. In essence, this is a prerequisite for paying particular attention to ethical issues in university education.* ***Goal and Objectives:*** *The aim of this research is to create and propose a conceptual generative model for training in Ethics in a cyber university environment. The application of various information and knowledge technologies such as artificial intelligence (in medicine), social media in public relations, methods of accessing databases related to elections, recognition technologies in security, multimedia technologies in the digitalization of cultural values, definitively share the specific objectives of this project.* ***Methodology:*** *The research methodology chosen best corresponds to the type of scientific work. The so-called Architectural Approach forms the main contemporary toolbox of modern change. This methodology is natural in such cases and can respond to the intended and carried out scientific and applied research.* ***Conclusion:*** *Cyber ethics, as an emanation of ethics in the virtual cyber space, should also be considered in relation to current social practices. All technological, political, economic, etc. processes that involve a cyber-related component should be evaluated in their ethical aspect with respect to their total positive or negative impact on society.*

Keywords: cyber ethics, education, generative model, innovation, knowledge, technology, information, research

1. Introduction

The development of the Internet has clearly shown the synergy effect of the mix of contemporary information and communication technologies apart from illustrating their huge impact on modern society, which we call today 'information society'. The characteristic features of this information society are numerous but the most outstanding ones include abstractions such as the independence of distance and location. In the virtual world, the size ceases to be such a significant factor, there is an improvement in communications globally, which to the ordinary user takes the form of an information torrent. At the same time, alongside the positive character of information society, during its turbulent development, there appear negative aspects and manifestations of the ever so saturated emanation of real life into the virtual dimension. There are instances of social polarization and exclusion, new virtual cultures emerge with low and even negative level of contribution. In the context of the latter conclusion, the COVID-19 pandemic clearly demonstrates the social distancing in different societies all over the world.

Cyberspace is the global space of virtual reality, a parallel world to the physical world.

The significance of this cyberspace has grown exponentially over the last three decades. It is present everywhere and at all times, penetrating the physical space with a huge impact on culture, religion and especially in education.

Cyber ethics differs from ethics by definition only in that it refers to cyber space with all its peculiarities. Both ethics and cyber ethics should give us orientation as to what is right or wrong, good or bad on the basis of different world views and systems of values, sums of virtues and norms. Cyber ethics can be viewed in the same ethical domains of manifestation that include personal life, social relations, the environment, political, economic and cultural interactions. Applying different information technologies such as artificial intelligence in medicine, social media in social relations, methods for access to databases when organizing and conducting elections, recognition technologies in security, multimedia technologies in the digitization of cultural values have demonstrated this co-relationship. In practice, all real ethic manifestations include a cyber-aspect.

Reversely, this means that all technological, political, economic and mostly educational processes that include a cyber-component must be viewed and evaluated in their ethical aspect with regard to their positive or negative impact on society as a whole and on each individual.

2. Ethical Norms and Principles in Information Society

Globethics.net published in 2013 a discussion paper entitled ETHICS IN THE INFORMATION SOCIETY: The Nine 'P's. These values were given in nine major topics of the information society, the Nine 'P's: principles, participation, people, profession, privacy, piracy, protection, power and policy, the ethical problems in education being in almost each and every one of them, namely:

1. Principles of ethical values: Knowledge societies can be sustainable, coherent, innovative and integrative if they are based not only on pragmatic opportunities or political or financial interests, but on ethical values.
2. Participation: Access to knowledge for all: Access to information, communication, education and knowledge is a basic right and public good.
3. People: Community, Identity, Gender, Generation, Education: People, human beings, as senders and receivers are the key actors of information, communication and knowledge. How to filter, digest and assimilate information and knowledge? How to use them for enrichment and not confusion, for identity building and not identity-loss, for respect of diversity and not increase of

uniformity, for more equality instead of more inequality?
4. Profession: Ethics of information professions: Professions in the fields of information, communication and knowledge creation, processing, dissemination, control, renewal, preservation, archiving and policy-making have a special ethical responsibility in implementing core values.
5. Privacy: Dignity, Data mining, Security: Privacy is a human right, not a commercial concession.
6. Piracy: Intellectual property, cybercrime: Piracy is an old problem, with a new electronic face.
7. Protection: Children and young people: Through access to the Internet on computers, smartphones and tablets, young people are connecting with each other and wider society in ways that were previously unimaginable. A generation of children and young people have grown up for whom the digital world is taken for granted. Nevertheless, there are concerns that children, young people and young adults may face specific risks and hazards, including sexual exploitation, a lack of anonymity and potential addiction to online networks.
8. Power: Economic power of technology, media and consumers: The production, processing, dissemination, control and archiving of information, communication and knowledge need political power to set the legal frame and economic power to provide the necessary investment capital.
9. Policy: Ethics of regulation and freedom: Parliaments, governments, civil society and educated citizens are needed to ensure that regulatory measures support freedom of expression, freedom of association in information and communication technologies and the right to seek, receive and impart information and ideas through any media and regardless of frontiers

3. Cyber ethical Problems in Education

In order to have a positive cyber impact on society, education must constantly adhere to the following three basic ethical recommendations:

1. Setting the ethical framework of behavioural values and virtues in cyber-space: freedom, non-violent communication, fairness, equality, sustainability, care and virtues like respect, integrity, transparency, honesty, etc.
2. Widening media education from technical skills to compulsory media education for values and virtues at all levels, including higher education and lifelong learning.
3. Strengthening the responsibility of individual users of cyber devices, from mobile communication to social media, the Internet in general, including interaction with robots and communication through artificial intelligence.

It is worth noting that knowledge and education on cyber ethics have a direct impact on human behaviour. Ethics education has a positive impact on students, i.e., knowledge of ethics can lead to a reduction in the abuse rate, and the computer science curriculum can be improved by including a module on computer ethics and social responsibility.

We live in an interesting world today with newly-emerging technologies that promise to totally impact the way human activity and enterprise will develop in the course of time.

They include new technologies such as Artificial Intelligence, The Internet of Things and Blockchain. These new technologies (Artificial Intelligence, The Internet of Things and Blockchain) pose new challenges regarding the intersection between Cyber law and cyber ethics, which must be addressed in an appropriate way through adequate legislative and legal frameworks and actions in times that follow. No wonder the World Economic Forum's list of the 10 Latest Technologies for 2015 includes those that aim to

resolve some ethical debates generated by an earlier generation of technologies, as well as others that will lead to new ethical and regulatory challenges.

4. Structural and Functional Frames of the Generative Model

The emergence of artificial intelligence poses new ethical questions and doubts which should be noted and considered in laws and other legislative norms that regulate cyber space. Should artificial intelligence be allowed to develop beyond the point of outdoing the human brain? Besides, should artificial intelligence be allowed to ethically not give in to human will and instead to take independent course of action that could possibly lead to catastrophic consequences to human society?

The increasing proliferation of robotic systems poses many ethical challenges, from the ethics of research and development of human-robot interactions to the programming of ethics for autonomous systems and the social impact of robotic technology in areas such as self-driving vehicles, the widespread displacement of human labour through automated and autonomous systems. Ethics is an ongoing and dynamic enterprise.

When for instance new technologies emerge, there is a laudable concern firstly to 'create' their whole ethical system so as to 'cover them'.

Structurally, the proposed model does not differ much from the traditional educational models. In most countries around the world, the majority of school children and university students continue to graduate from educational institutions without learning anything about the connection between digital and critical thinking. However, in addition to tradition, we emphasize our efforts in the field of modern knowledge in information and communication technologies, which are an essential addition to the ability of learners to assess and make decisions and classify information in order to be able to identify themselves as individuals in the real as well as in the digital world.

In the context of the functional framework of the model, we believe that concerning the debate on digitalization in the education sector it should be immediately pointed out that the acquisition and introduction of advanced technologies only in educational institutions will not offer a solution to the more worrying educational problems that prevent the successful participation of these advanced technologies in the digital world.

Therefore, in this framework, it's all down to the interaction between education and its natural requirements such as freedom, language ability and personal independence, not technologies themselves.

Freedom of education is both a necessity and a consequence, and the same is true of language skills and personal development. This cannot be expected of technological systems, but requires individual responsibility and cooperation. Therefore, it doesn't matter whether one receives knowledge and understanding from digital or analogue (printed) sources. What is required is competent classification and assessment skills.

This can happen especially on the basis of one's own knowledge and the resulting local and/or global discourse for their better regeneration.

A major aspect of the model is the need for students to have sufficient freedom to practice critical thinking. To this end, however, existing structures need to be modified in such a way that this critical thinking skill can be applied repeatedly in the learning process and thus improved. In this regard, the question arises about the content of education and the canon of knowledge, both in the real and in the virtual world.

5. Conclusion

In conclusion we must point out that digital transformation is not only limited to the technological sphere. It impacts to a great extent the whole virtual and physical essence

of the global space around us. Thus, ethical questions and spheres of conflict arise, which have to be solved in the most appropriate manner. Ideally, the first aim is always a critical reflection on 'good life' even in the virtual world. The 'good' in it, however, should always be reviewed, defined and negotiated. Even in the information saturated mix of opinions, this enables the reflected independence of thought and a focus on the understanding, localization, differentiation and eventually the evaluation of changes on the 'new definitions' of 'good' that might be necessary in the process of transformation.

All in all, our Conceptual Generative Model for Cyber Ethical Issues in Education seeks and finds the interaction between critical thinking and Cyber ethics. On the one hand, critical thinking requires values derived from ethical principles so that it is not arbitrary, but at the same time ethical principles require critical (over) thinking of real or expected changes. In this respect, even in digital times, people remain bound to participate in solving immediate social problems responsible and behaving ethically: to be curious, to be able to argue and, above all, to think critically about themselves and society.

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