The European Proceedings of
Social & Behavioural Sciences
EpSBS

ISSN: 2357-1330

https://doi.org/10.15405/epsbs.2019.12.04.242

SCTCMG 2019
International Scientific Conference «Social and Cultural Transformations in the Context of Modern Globalism»

INFORMATION TECHNOLOGY AND ETHICS IN THE EDUCATIONAL SPACE

Larisa Kozhevnikova (a)*, Irina Starovoytova (b), Anastasia Shishkova (c), Oksana Iatsenko (d)
*Corresponding author

(a) State University of Management, 99, Ryazansky Av, Moscow, Russia
lakozhevnikova@yandex.ru, +7-916-218-80-43
(б) State University of Management, 99, Ryazansky Av, Moscow, Russia
iestar1@mail.ru, +7-968-030-75-00
(c) State University of Management, 99, Ryazansky Av, Moscow, Russia
avs.guu@gmail.ru, +7-905-576-71-08
(d) State University of Management, 99, Ryazansky Av, Moscow, Russia
yatsenkoox@mail.ru, +7-916-466-08-75

Abstract

The article is devoted to the discussion of ethical problems arising in the information society in connection with the spread of digital and communication technologies: problems of transparency and privacy of information, problems of asymmetric distribution of information between different agents, problems of information security, etc. The article focuses on the ethical problems of distribution of digital and Internet technology in higher education: the problem of Internet plagiarism, the problem of erosion of the system of values, determining the place of modern technologies in modern undergraduate and graduate students. The empirical base of the study is an express survey of undergraduate and full-time and part-time students and graduate students of the State University of Management (SUM). It is shown that virtual communications do not change students' perceptions of key moral values. It has been suggested that the streamlining of virtual content and the adoption of professional ethical codes will not facilitate ethical compliance. We analyzed the most acute problem associated with the spread of the Internet - the problem of Internet plagiarism, suggested ways to solve it. 4. The conviction was expressed that an effective means of ensuring information security is the formation of an information culture that includes possession of information skills: a clear awareness of the information need, identifying the most complete and reliable sources, the ability to analyze, synthesize and evaluate information. Results of the work can be used in further studies of the ethical problems of the spread of digital and communication technologies in education.

Keywords: Digital ethics, privacy, internet plagiarism, virtual communications, ethical problems of education.

https://doi.org/10.15405/epsbs.2019.12.04.242
Corresponding Author: Larisa Kozhevnikova
Selection and peer-review under responsibility of the Organizing Committee of the conference
eISSN: 2357-1330

1. Introduction

Information (digital) ethics is a modern branch of ethical knowledge that studies ethical issues related to the production, collection, use and dissemination of data and related technologies and algorithms (including artificial intelligence, machine learning and robotization) in order to develop ethically justified solutions (Floridi & Taddeo, 2016).

Many problems of digital ethics require discussion in the context of the development of the modern educational process, who's active informatization has been the main educational trend for several years. In 2017, the report of The NMC Horizon (a global research project covering about 200 countries and highlighting trends, challenges and new technologies in the field of education) highlighted a number of fundamental provisions of the modern educational process, including the following: 1) Distance, mobile and blended learning as an integral part of modern education. 2) The inclusion of higher education in the system of continuing education through the provision of opportunities for formal and informal lifelong learning for students and staff. 3) Organization of higher education as a platform for improving artificial intelligence technologies, machine learning algorithms and tactile devices (Adams et al., 2017).

The report of The NMC Horizon 2018 allows us to conclude that the process of informatization is increasing and the educational process is open. As medium-term trends (for the next 3-5 years), the rapid spread of open educational resources and the emergence of new forms of interdisciplinary research are indicated. As a short-term trend (one or two years) - rethinking and redevelopment of study spaces, and a growing interest in various methods of measuring and evaluating academic success and the effectiveness of the learning process. Finally, long-term trends have chosen the promotion of a culture of innovation and an increase in the volume of cooperation both between various educational and scientific organizations, as well as between higher education, business and industry (Adams et al., 2018).

Nowadays, without the mass media (the most important of which was the Internet in the 21st century), the socio-cultural development of any nation in all areas, including education, is impossible (Fedorov, 2013). Today, 90% of humanity are regular consumers of mass media products (Erofeyeva, 2010). Therefore, media literacy is also becoming a modern educational trend. Among the reasons for the priority of media literacy in the modern world Masterman (2000) (one of the most authoritative media educators and media theorists) calls "the need to train young people with a focus on meeting future requirements" (p. 49).

2. Problem Statement

The authors of the article conducted a sociological study of the attitude of undergraduate and graduate students of a higher educational institution to the consequences of the spread of information and communication technologies in the educational environment.

Several questionnaire questions relate to how students use the Internet: the prevailing goal of using the Internet, attitudes towards the reliability of information from the Internet, and the preferred information technologies. The following questions of the questionnaire are aimed at obtaining information on the value aspects of the dissemination of information and communication technologies in the educational environment: ranking of life values, ranking of significant activities, explaining the causes of immoral

https://doi.org/10.15405/epsbs.2019.12.04.242
Corresponding Author: Larisa Kozhevnikova
Selection and peer-review under responsibility of the Organizing Committee of the conference
eISSN: 2357-1330

behavior, justification factors of immoral behavior, ways to overcome immorality. The main question of the questionnaire is about what ethical problems are created by the spread of Internet technologies.

3. Research Questions

The object of the research is information and communication technologies in the educational environment of a higher education institution (by the example of undergraduate students of full-time and part-time tuition).

The subject of the study is the assessment of social and moral problems of ICT development in the educational environment, ethical principles and norms of virtual communication.

4. Purpose of the Study

The purpose of the study is to test the hypotheses that virtual communications do not change students' ideas about key moral values, but due to reduced control from society, they contribute to the weakening of moral behavior; that the streamlining of virtual content and the adoption of professional ethical codes will lead to non-compliance with ethical standards. The ethical rules imposed from outside do not work or do not work in the way that code developers expect. The formation of a common information culture and ethics in the virtual sphere can be an effective solution to the problem.

5. Research Methods

In the course of the study, a rapid survey of undergraduate and part-time undergraduate students was conducted. The sample is nesting, the selection units are groups of undergraduate full-time and part-time students and graduate students from five institutes of higher education, followed by a continuous survey in them. 400 people interviewed.

The authors also used an analytical-descriptive method for preliminary systematization of accumulated data, a hypothetical-deductive method when proposing a research hypothesis and a dialectical method that requires considering the developing object in all its diversity, in terms of its internal inconsistency, as well as the system method.

6. Findings

6.1 Ethical Issues Caused by Digitalization

The Internet of Things, robotization, face recognition technology raises ethical issues related to privacy and transparency: data can be passed on to third parties, wearable devices — used by the owner imperceptibly to other people, using the face recognition technology, it is possible to find almost any person on the network. Transparency issues are also relevant for services and platforms based on artificial intelligence technologies - from social networks and search engines to government services (Chinese social citizen score card): to what extent are the results of the algorithms available to our understanding and control, doesn’t a dangerous information asymmetries between citizens and government structures (Harsh, Acharya, & Chaudhary, 2018)? The collection and use of personal data due to the development of

https://doi.org/10.15405/epsbs.2019.12.04.242
Corresponding Author: Larisa Kozhevnikova
Selection and peer-review under responsibility of the Organizing Committee of the conference
eISSN: 2357-1330

information technology often becomes invisible to the users themselves. As a result, people are not always fully aware of what information other people, companies and governments have about them, and what consequences the use of this information may lead to. Often, people are not sure how much information they can voluntarily share (Acquisti, Brandimarte, & Loewenstein, 2015).

Privacy and transparency, the right to confidentiality of personal information and the asymmetric distribution of information among different agents are issues addressed by information (digital) ethics. In a study of 2016, the authors note that the study of the problems of information ethics can be conducted in three main areas: data ethics, algorithm ethics, and practice ethics. Data ethics focuses on ethical issues arising from the collection and analysis of large data sets, problems associated with, for example, using big data in biomedical research and social sciences, advertising and other fields, as well as working with open data. The ethics of algorithms solves problems arising due to the increasing complexity and autonomy of algorithms based on machine learning technologies and artificial intelligence. Finally, the ethics of practice (including professional ethics and deontology) raises pressing issues concerning the responsibility of people and organizations responsible for data processing, strategy and policy of using them to determine the ethical basis for the formation of professional codes that promote both the progress of data science, and protecting the rights of individuals and groups. Three questions are central to this line of analysis: consent, user privacy, and data reuse (Floridi & Taddeo, 2016).

"Big data" and their meaning are constructed socially and are influenced by developing social, political and technological forces. As noted in modern research, at present this term has acquired a new meaning and is no longer defined only through the amount of information or its digital nature. Modern "big data" covers any structured and unstructured information that is collected, stored and analyzed both online and offline (Chen & Quan-Haase, 2018). Many researchers and practitioners insist that obligations to protect privacy in the digital world must be clearly defined and may differ from similar responsibilities in the pre-digital era. The notions that the rights to privacy and confidentiality in "real" life should coincide with the rights in "virtual" life, are based on the opposition of online / offline life, which many modern researchers consider to be false. People now live in these two worlds at the same time, constantly moving from offline to online, and the boundaries between these modes are blurred. On the one hand, people have become more open with their personal data online. On the other hand, empirical data shows that people are still concerned about the confidentiality of their data and want to be able to exercise their right to privacy (Vayena & Tasioulas, 2016). This situation requires a rethinking of our rights and, accordingly, the measures that are necessary to protect them.

The study of 2016 provides a list of existing ethical codes aimed at resolving ethical issues related to "big data" (Table 01):

Table 01. Codes of ethics and codes of conduct for "big data" (O'Leary, 2016)

Organization	Documentation
IEEE	Ethics and Member Conduct (www.ieee.org/about/ethics.html)
ACM	ACM Code of Ethics and Professional Conduct (www.acm.org/about-acm/acm-code-of-ethics-andprofessional-conduct)
British Computer Society	Code of Conduct for BCS Members (www.bcs.org/upload/pdf/conduct.pdf)

https://doi.org/10.15405/epsbs.2019.12.04.242
Corresponding Author: Larisa Kozhevnikova
Selection and peer-review under responsibility of the Organizing Committee of the conference
eISSN: 2357-1330

Data Science Association	Data Science Code of Professional Conduct (www.datascienceassn.org/code-of-conduct.html)
INFORMS for the Certified Analytics Professional	Code of Ethics for Certified Analytics Professionals (www.informs.org/Sites/Certified-Analytics-Professional-Program/CAPs/CODE-OF-ETHICS)
American Statistical Association	Ethical Guidelines for Statistical Practice (http://biostat.mc.vanderbilt.edu/wiki/pub/Main/HeitmanSeminarMay08/ASAEthicalGuidelinesforStatisticalPractice.pdf)

6.2 Value Aspects of Digitalization of Education

The empirical base of the study was made up of materials from a sociological survey of high school students (State University of Management (SUM). A sociological survey showed that there is no gender-specific and age-related (adults / minors) difference in the respondents' answers:

1) Young people often use the Internet for social networking (100% of respondents), viewing news (65%), searching for information for work and study (80%). According to respondents, online courses and training via Skype (20%) are the least in demand. Several respondents regularly access cloud services, search online for e-books and their audio versions, and watch videos on Youtube.

2) The majority of respondents at first critically compares information from different sites, not content with information from the very first open site (58%). Do not trust the information found on the Internet and recheck it from other sources 50% of respondents. Some go further and look for the original source on the Internet.

3) For the organization of an individual learning process, respondents first prefer to use social networks (40%), and the university's electronic library is the least in demand (21%).

4) Ranking of values showed that in the first place among respondents with a large margin - family (94%). Friendship (87%), health (88%) and love (85%) are of great importance for survey participants. Material welfare (81%) and education (81%) are somewhat less valuable. The last place is occupied by such value as patriotism (10%). Cultural diversity is not a priority value. Only 19% of respondents rated it as highly as possible. The original answers given by respondents: passion, freedom of choice, spiritual development, attention to people, happiness, career, the lives of others, mutual assistance, education, self-development, creativity, religion, the ability to find in life new and interesting.

Surprising for the authors of the article, the result of the survey: none of the 400 respondents cited the Internet, digital technologies, etc. as a significant value. This, in our opinion, shows that, despite the digitization of all areas of modern life, the Internet and digital technologies not perceived as an independent value. They are given only instrumental value.

5) Respondents explain the violation of moral standards by a desire to assert themselves (72%) and impunity (62%). Some respondents offered their own answers. Separate answers were: "The norms of morality were not instilled in childhood (there is no upbringing)", "Many confuse vulgarity with looseness", "They are hypocrites and egoists", "They do not consider observance of moral standards necessary and useful for themselves", "For the sake of material benefits people close their eyes to moral standards "," Education gives them the right to ignore moral norms "," Do not believe in God "," People are sure that by making mistakes in the present, they will be able to correct them in the future "," To achieve their own

https://doi.org/10.15405/epsbs.2019.12.04.242
Corresponding Author: Larisa Kozhevnikova
Selection and peer-review under responsibility of the Organizing Committee of the conference
eISSN: 2357-1330

benefit " , “People are brought up in an environment where moral standards are not ioritete "," I just do not want to comply with the rules. " And finally - the philosophical: "Moral is relative."

The authors suggest that this demonstrates the inconsistency of the moral values of young people. Through the media and the education system, liberal values are spread individual success, wealth, career, etc., moral freedom is understood as widely as possible, as permissiveness. Answers of respondents to this question correlate with the high importance of the institution of the family as a conductor of traditional moral values.

6) And at the same time, respondents believe that it is impossible to justify immoral acts by anything - this is the opinion of most respondents (81%). In exceptional cases, immorality is justified by extreme necessity (72%).

7) Ranking of activities by respondents characterizes socially oriented value orientations: the respondents named self-education, self-development (including moral and spiritual) as the most important activity (94%), study takes second place (75%), leisure takes third place (hobby including) (72%). Much attention is paid to a healthy lifestyle (61%). It can be assumed that these value orientations are the basis for a strategy of long-term behavior, focused on socially useful affairs.

Interesting is the fact that students as a significant social activity student do not put in the first place. Study is inferior in the questionnaire position of self-education and self-development. In our opinion, this reflects the situation in modern higher education, when students acquire a significant amount of knowledge outside the university, independently, using, among other things, the capabilities of information technology. Such a high assessment of the importance of self-education corresponds to the trend for lifelong education, the emergence of new forms of education and the development of informal education.

Perhaps the decisive role in this choice for respondents was played by the possibility of making independent decisions provided by one or another type of activity, freedom of choice of forms and methods of activity, the degree of external regulation, formality of assessment, etc. However, teachers traditionally consider “studies” as leading student activities. Such a discrepancy between the value-semantic perception of “learning” by students and the normative perceptions of teachers, in our opinion, is one of the factors that reduce the effectiveness of educational activities.

8) Due to various reasons (influence of age, culture, national traditions, religion, social environment, lack of professional experience, family status, etc.), our respondents underestimate the importance of an information ethics code to prevent unethical behavior. Although they see the danger of breach of confidentiality and leakage of personal information, they offer traditional methods to minimize this threat (education in the family, toughening of punishments under the current control (52%) and personal positive example (54%)).

Russia's involvement in the globalization process has led to changes in the mentality, in the system of values and priorities of Russian society, which is evolving towards the synthesis of liberal-democratic and traditionalist values and attitudes. There is a well-founded opinion that, although Russian culture underwent certain transformations in the 1990s, but the basic values and beliefs underlying the national culture remain unchanged. Socio-economic conditions and the import of Western behavioral models have somewhat changed the behavior of employees of Russian companies, but not the value system. The deep layers of culture are not affected (Ryabov & Kurbangaleyeva, 2003). Survey results support this view.

https://doi.org/10.15405/epsbs.2019.12.04.242
Corresponding Author: Larisa Kozhevnikova
Selection and peer-review under responsibility of the Organizing Committee of the conference
eISSN: 2357-1330

9) Respondents see the greatest threat to the spread of Internet technologies in data leaks from databases (72%), violation of personal space (63%), in distribution of unreliable information on the Internet (60%), Internet addiction and gambling (51%). Survey participants are informed about such negative network phenomena as hacking, flame, trolling, bullying, and others, but do not rate these threats very well. Thus, respondents are distinguished by a high degree of involvement in virtual communications.

The importance of privacy is determined by a person's ability to manage information about himself based on self-esteem, self-esteem and a sense of his uniqueness. His behavior and self-image depend on the control of private information. Sometimes anonymity is necessary so that a person can be open, can take risks, experiment or express themselves creatively. Privacy is an important resource in interpersonal relationships. Relationship development is partly based on the voluntary sharing of personal information with others. People do not hesitate to be themselves as soon as they get to know other people and share personal information with them. The boundaries of groups and communities are supported, including through the control of information. People belong to a certain group, occupy a certain position in a certain sense, depending on what they have the right to know and what information they have access to. The ban on access to personal information, which may be misused by outsiders, allows to prevent injustice and discrimination. Privacy helps to ensure the privacy and tranquility necessary for mental health and the creative development of people in a dynamic society.

An effective means of ensuring information security is the formation of an information culture that includes the possession of information skills: a clear awareness of information needs, identifying the most complete and reliable sources, the ability to analyze, synthesize and evaluate information. Possessing a high level of culture, a person can confront modern challenges of the information environment.

6.3 Internet plagiarism problem in the educational environment

One of the serious ethical problems is the problem of Internet plagiarism. 50% of respondents expressed concern about the increase in the theft of intellectual property.

According to Australian scientists at Macquarie University (Sydney), dealing with ethical issues in the field of information and communication technologies, Townley and Parsell (2004), a long-term solution to the problem of plagiarism is to eliminate the main motives and causes of plagiarism. But this does not happen if, in educational institutions, they try to combat online plagiarism only with the help of technical means. To identify student fraud, teachers respond to the symptom, not the cause. Finding ways to solve the problem of plagiarism with the help of technical means, according to Townley and Parsell (2004), will not solve the problem of plagiarism. This mistake lies in misunderstanding the nature of fraud. A vice is the lack of respect for knowledge and the establishment of truth. The fact that teachers cannot refuse the use of plagiarism detection means, in their opinion, testifies to a decrease in the value of scientific activity in educational institutions. To find a way out in applying the Turnitin.com site toolkit (anti-plagiarism online service), consider Townley and Parsell (2004), it means “to treat students as tools or tools, to allow their knowledge and truth to become a commodity” (p. 272). The call for students not to plagiarize, because they will be caught and punished, does not contribute to creating an atmosphere of trust and respect in an educational institution that could help to overcome the attractiveness of plagiarism for students. It is difficult to imagine that the approach to each student as a potential plagiarist will encourage students to

https://doi.org/10.15405/epsbs.2019.12.04.242
Corresponding Author: Larisa Kozhevnikova
Selection and peer-review under responsibility of the Organizing Committee of the conference
eISSN: 2357-1330

interact with teachers and the broader scientific community based on trust. Townley and Parsell (2004) believe that the problem of online plagiarism results from the misbehavior of the academic community and cannot be attributed to technological problems. In this problem, in their opinion, the inability of teachers to demonstrate the correct patterns of behavior to students using new technologies, as well as the inability of the scientific and pedagogical community to reproduce the intellectual virtues and scientific values that it adheres to, transfer valuable experience, strengthen understanding and relations between generations. Instead of focusing on the wrong behavior of students, argue Townley and Parsell (2004), teachers should recognize their own failures in training and education in the new information and communication environment. There are a lot of pedagogical failures: inability to involve students, to offer clear examples of examples of behavior, to promote a culture of respect for scientific knowledge and respect for academic values, including trust, cooperation and community. But most of all, according to Townley and Parsell (2004), one should take into account the "inability to provide a clear and reliable model for establishing scientific authorship in a world where the concepts of intellectual property and plagiarism are not sufficiently scientifically developed" (p. 274). For students to prepare their own work, relying on the honesty, integrity and competence of teachers, became participants in the academic community, recognizing and observing its norms and values, it is necessary to change the teaching practice in educational institutions. For example, Townley and Parsell (2004) consider that teachers should not only train students in the proper use of Internet resources, but also offer their own (individual, disciplinary, institute) practices as a model for imitation. It is necessary to agree with researchers on the need to involve students in the practice of scientific interaction, developing and maintaining trust, based on mutual interest and respect. Internet plagiarism is a symptom of declining confidence and degradation of the conditions necessary to maintain the creative potential of the university scientific community. Townley and Parsell (2004) believe that modern education policy and a modern attitude to knowledge need treatment, not students and not the Internet.

7. Conclusion

The article notes the insufficient study of the problems of ethics of information and communication technologies in the educational space of the university. Students are full participants in the educational space of the university, and their activity can become a resource for its development. Realization of such a possibility depends on the awareness by students of the importance of their role in the specified process and on the ability to be the creators of their life path. The objective necessity of determining the hierarchy of values of students, reflecting the personal significance for them of various activities, is substantiated. Guided by this hierarchy, students determine the goals and directions of their activity. The formation of moral principles and ethical norms, as well as the formation of an information culture of ICT, is a serious task for the humanities, since all participants of the information society can ultimately be dependent on ethical problems in the field of high technologies.

References

Acquisti, A., Brandimarte, L., & Loewenstein, G. (2015). *Privacy Policy Science, vol. 347 (6221).* New York.

Adams, B. S., Brown, M., Dahlstrom, E., Davis, A., DePaul, K., Diaz, V., & Pomerantz, J. (2018). *NMC Horizon Report: 2018 Higher Education Edition.* Louisville, CO: EDUCAUSE. Retrieved from: https://library.educause.edu/~/media/files/library/2018/8/2018horizonreport.pdf

Adams, B. S., Cummins, M., Davis, A., Freeman, A., Hall Giesinger, C., & Ananthanarayanan, V. (2017). *NMC Horizon Report. 2017 Higher Education Edition.* Austin, Texas: The New Media Consortium. Retrieved from: http://cdn.nmc.org/media/2017-nmc-horizon-report-he-EN.pdf

Chen, W., & Quan-Haase, A. (2018). Big Data Ethics and Politics. Toward New Understandings. *Social Science Computer Review*, 1–7.

Erofeyeva, E. A. (2010). *Media literacy of teachers as a condition of quality education: gender aspect. The role of science and education in the modern information society, part 3.* Volgograd: VGETK.

Fedorov, A.V. (2013). *Media education: yesterday and today.* Moscow: The Information for All Publishing House of the MOO WFP.

Floridi, L., & Taddeo, M. (2016). What is data ethics? *Philosophical transactions. Series A, Mathematical, physical, and engineering sciences, 374*(2083). Retrieved from: http://rsta.royalsocietypublishing.org/content/374/2083/20160360

Harsh, R., Acharya, G., & Chaudhary, S. (2018). Epistemological View: Data Ethics, Privacy & Trust on Digital Platform. In *2018 IEEE International Conference on System, Computation, Automation and Networking (ICSCAN)* (pp. 1–6). Pondicherry.

Masterman, L. (2000). *Basics of Media Education*. Harvard.

O'Leary, D. E. (2016). Ethics for Big Data and Analytics. *IEEE Intelligent Systems, 31*(4), 81–84.

Ryabov, A. K., & Kurbangaleyeva, G. C. (2003). *The basic values of Russians: Social attitudes. Life strategies. Characters Myths.* Moscow: House of intellectual books.

Townley, C., & Parsell, M. (2004). Technology and academic virtue: Student plagiarism through the looking glass. *Ethics and Information Technology, 6*(4), 271–277.

Vayena, E., & Tasioulas, J. (2016). The dynamics of the big data and human rights. The case of scientific research. *Philosophical transactions. Series A, Mathematical, physical, and engineering sciences, 374*(2083). Retrieved from: https://royalsocietypublishing.org/doi/full/10.1098/rsta.2016.0129