Perception of Teachers in Higher Education towards Ethical Issues of Information Technology Use

Liliana MÂŢĂ¹, Ioana BOGHIAN²

¹ Associate professor, PhD, “Vasile Alecsandri” University of Bacău, Bacău, Romania, lsacara@yahoo.com

² Lecturer, PhD, “Vasile Alecsandri” University of Bacău, Bacău, Romania, boghian.ioana@ub.ro

Abstract: Our paper presents the results of a type of qualitative research meant to identify the perspective of teachers in higher education on the ethical issues related to information technology use. The research is based on the analysis of the data content obtained by applying a semi-structured interview to 31 teachers working in higher education institutions in Romania. The data processing and interpretation allowed the identification and definition of the general and specific thematic categories related to the perception of teachers in higher education on the ethical aspects of information technology use. The research results are analyzed from the perspective of the following thematic directions: ethical problems of the use of information technology by teachers in teaching-learning-evaluation activities, ethical problems of the exploitation of technological resources in carrying out research activities, problematic aspects of the ethical use of technological tools in online communication, teacher training in higher education in the field of ethical use of IT, introduction of these topics in academic courses, existence of rules at the university level for teacher ethical use of IT.

Keywords: Ethics; higher education; information technology; interview; teachers; perception.

1. Introduction

The use of information technology (IT) in education has generated a wide range of opportunities related, in particular, to increasing accessibility and sharing teaching-learning-assessment content, but also a series of ethical and legal risks related to access and exchange of information in digital format. The central ethical issue raised by the emergence of IT is the same and as old as Plato's *Republic*: "suppose you had a ring that made you invisible if you turned its stone; in this case, why should you still act correctly?" (Sivin & Bialo, 1992). Today's ethical questions are as old as the pyramids, while the context is given by the latest computer software. Ensuring a fair and efficient use of new technologies, which is an increasingly important part of personal and professional life, is one of the main challenges of the 21st century. Principles are needed for the use of AI educational systems, because computer-based education "has the potential to harm young people in different ways, including ethically, aesthetically, physically, psychologically, intellectually and socially" (Aiken & Epstein, 2000: 164).

Although the tendency is to see technology as tools or means designed for specific purposes, in recent years there has been an increase in awareness of ethical issues related to IT, given their significant potential to affect the well-being of people and communities; the growing list of moral issues affecting the school includes digital violence, Internet addiction, hyper-sexualization of young people and compromises in academic integrity (Burbules & Callister, 2000); therefore, it is important for educators to understand the moral nature of these challenges and the factors involved, as well as their role as moral models of "responsible digital citizenship" (Lennie, 2013: 40).

The ethical and legal problems of accessing and sharing digital information were identified as the following: plagiarism, self-plagiarism, fabrication and falsification of data, veracity of author quality or misleading attribution, accidental plagiarism, intentional or unintentional infringement of copyright by unauthorized use of content protected by intellectual property rights, piracy, fraud, destruction of information, abuse of telecommunications, online confidentiality and security and disclosure of personal data of students (Wang & Heffernan, 2010; Mbofung & Popoola, 2014; Ugbogbo & Michael, 2016; Regan & Jesse, 2018).

Studies on this topic have, so far, focused on the perception towards (un)ethical use of IT by: children (Vesna & Niveditha, 2012); high-school students (Kürtüncü, Demirbağ & Yildiz, 2015); undergraduates (Aderonmu,
Aasheim & Rutner, 2013; Jamil & Shah, 2014; Sargolzaei & Nikbakht, 2017); teachers (Chang, Chin & Hsu, 2008; Lennie, 2013; Serholt & al., 2016; Thunman, Persson & Lovén, 2018); teachers' and learners' perceptions towards (un)ethical IT use (Woodcock, 2001; Wang & Heffernan, 2010; Wang & al., 2015).

Based on the categories of ethical issues related to IT use as defined by Mason (1986 - property, privacy, accessibility and accuracy) and Peace and Hartzel (2002 - Mason’s four categories plus freedom of expression), Lucey & Grant's study presents a framework for interpreting the moral use of educational technology, which also takes into account the lack of attention of decision makers with regard to the educational, social and cultural dimensions. A study conducted by Marcial (2017) aims to evaluate the level of social and ethical competence of teachers in the Philippines by trying to identify: the level of social and ethical competence of ICT use among teachers in central Visayas, Philippines; the relationship between the demographic profile of the respondent (gender, age, status, type of institution, years of work experience in education, level of education) and the level of social and ethical competence of ICT use; the relationship between the technological device owned by the respondent (desktop, Smartphone, tablet, laptop) and the social and ethical competence of ICT use perceived by the respondents; the relationship between Internet access and social and ethical ICT use. The findings show that: the teachers participating in the research have no experience in observing certain legal practices in technology use, teachers are only aware of promoting a safe and reliable technology-based learning environment, there is no significant evidence of a relationship between the sex of the respondent and the level of social and ethical competence of ICT use, there is a significant relationship between social and ethical ICT competence and the status of the respondent, i.e. single respondents have a higher level of ICT competence; respondents from private schools are better at social and ethical integration of ICT compared to those from public schools (Marcial, 2017).

Based on the literature, we may highlight some of the perceptions of teachers in higher education regarding the ethical use of information technology. Ethically speaking, there is, for example, concern that smart technologies might, in the near future, be able to write a book review: in this case, could the student who has access to, and uses this type of technology, generate a book review as homework and claim that he / she is the author of that review? Or, an intelligent system that can create music could completely demotivate talented students to compose authentic musical pieces. These are just two examples of the damage IT can generate at the aesthetic,
psychological, intellectual level. Moreover, there are physical effects of IT use: eye problems, obesity and so on, as well as social harm materialized as limited interaction and isolation (Aiken & Epstein, 2000). Another study has revealed that teachers believe that a school principal is a good leader and manager if he/she is able to embrace and promote the use of technology in the school unit, and uses technology-based educational resources to achieve increased student engagement in learning (Chang, Chin & Hsu, 2008).

Digital problems impact the moral culture of educational institutions, affecting the well-being of students, teachers and the community; such issues cover a wide range of areas (identity, privacy, property rights, copyright, credibility, civic participation) and are mainly related to: intellectual property rights and equal access to technology, cyber-bullying, the sexualization of young people and the impact of digital technology on physical and mental health (Lennie, 2013: 42).

The investigation of the perception of academic teachers regarding unethical use of information technology relies on a hexagonal model generated by the authors that comprises six components:

- the didactic dimension, related to the discovery of the ethical problems of IT use in the teaching-learning-evaluation activities;
- the scientific dimension, related to highlighting the ethical difficulties of integrating IT into research-development activities;
- the relational dimension that concerns the problematic aspects of the ethical use of social networks;
- the curricular dimension, in order to identify courses or topics on the ethical use of IT at academic level;
- the formative dimension, concerned with exploring how academic teachers may enhance IT ethical use;
- the normative dimension, related to establishing specific rules that must be respected for the ethical use of IT by teachers.

The six components of the hexagonal model are interdependent, as shown in Figure 1.
Our approach focuses on the perception of teachers in higher education on (un)ethical use of IT in relation to their teaching, learning, evaluation and research activities. Our aim is to identify the categories of problems and issues of teachers related to unethical use of IT and propose remedial suggestions for teachers and managers of higher education institutions. For this, the first step is to identify the perception of teachers in higher education regarding the ethical problems of IT use.

The objective of the research is to investigate the perception of teachers regarding the ethical problems of the use of information technology (IT) in higher education. The questions underlying the exploratory research derive from the six dimensions of the hexagonal model:

a) What are the ethical problems related to the use of information technology in teaching-learning-evaluation activities?

b) What ethical challenges arise when teachers in higher education use IT to carry out research and development activities?

c) What are the problematic aspects connected to the ethical use of social networks by teachers in the academic environment?
d) From a curricular perspective, what courses or topics on the ethical use of IT should be addressed at the academic level? Are such courses available?

e) What possibilities are there in the academic environment in terms of training for academic teachers regarding the ethical use of IT?

f) Under the normative aspect, what rules should there exist at university level to ensure ethical use of IT by teachers?

2. Methodology

A qualitative research methodology was designed based on the use of the semi-structured interview. Such research typically involves a systematic coding of verbal data (Blandford, 2013). The interview can provide rich, authentic data for qualitative data analysis.

Participants

The research was attended by 31 teachers from Romanian university education. As the topic of research borders on information and ethics, teachers from both Computer science and socio-human domains have been selected (Table 1).

Table 1. Distribution of the research sample, according to the independent variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specialization</td>
<td></td>
</tr>
<tr>
<td>Computer science, Information technology</td>
<td>14</td>
</tr>
<tr>
<td>Sciences of education, psychology, sociology, philosophy</td>
<td>17</td>
</tr>
<tr>
<td>Professional experience</td>
<td></td>
</tr>
<tr>
<td>1-9 years</td>
<td>10</td>
</tr>
<tr>
<td>10-19 years</td>
<td>12</td>
</tr>
<tr>
<td>more than 20 years</td>
<td>9</td>
</tr>
</tbody>
</table>

The participants were selected according to the following criteria: holding a PhD certificate, holding a teaching position at a university, using information and communication technologies for course and/or seminar activities.

Research method

The semi-structured interview was used as a research method to explore the perceptions of teachers regarding the ethical issues of IT use in the academic environment. This type of interview is based on the use of a combination of closed and open questions, often accompanied by follow-up
questions, such as "why" or "how" (Adam, 2015). In the first part of the interview, introductory questions were asked to identify the respondent’s field and professional experience, after which open questions were asked regarding the general context of the issue of ethical IT use in the academic environment and the challenges with which teachers are faced in relation to ethical use of IT. The data obtained during the semi-structured interview were analyzed using the thematic content analysis method, which allows for statistical analysis of the coded form of the text (Agabrian, 2006).

Research procedure

The interviews were organized individually with each respondent for approximately one hour, as Adam (2015) considers it to be a reasonable duration, in order to minimize fatigue for both interviewers and respondents.

Research ethics

The correct conduct requirements for the research were respected (Blandford, 2013): informed consent and data confidentiality. The participants were informed about the purpose of the research and their right to withdraw at any time. Also, confidentiality regarding data collection, management and reporting was ensured.

3. Results

The results of the research are presented in accordance with the six-dimension model elaborated to investigate the perception of teachers in higher education regarding unethical IT use.

a) The didactic dimension

Regarding the perception of university teaching staff, the main ethical problems that may be generated by the use of information technology in the teaching-learning-evaluation activities are the following: plagiarism (28), copyright infringement (20), problems regarding the use of software, equipment, audio-video tools, accessing platforms during teaching (13), misuse of personal data (5).

b) The scientific dimension

Regarding the difficulties that arise from an ethical perspective in the use of IT in carrying out research-development activities, teachers in higher education have identified the following: plagiarism and self-plagiarism (27), ethical problems resulting from the processing of research data (15), violation of intellectual property rights (6), incorrect use of personal data (2), unethical use of computer programs or multimedia resources (2).
c) The relational dimension

The academic teachers included in this research highlighted several problematic aspects of the ethical use of social networks: problems regarding online communication (19), unethical use of personal data or documents of other people (16), the low level of safety of closed groups created on social networks for educational purposes (7).

d) The curricular dimension

Teachers highlighted the importance of introducing courses or topics on the ethical use of IT in the academic environment. Of the total of 31 teachers, 18 mentioned that there are courses or topics related to the ethical use of IT, 6 mentioned that they do not know, while 7 stated that there are no such academic courses. From a curricular perspective, the following examples have been identified:

- courses at master level with the name "Ethics in scientific research";
- ethics course at the bachelor's and master's level, which also includes elements of information technology;
- courses on professional ethics and intellectual property at bachelor’s level and courses on ethics and academic integrity at master's degree;
- a course on ethics and technical communication, in which various problems regarding the ethical use of information technology tools are addressed;
- assignments for the course on computer assisted learning;
- ethics and academic integrity course, recently introduced in the curriculum for undergraduate study programs;
- course for junior teachers and doctoral students on the ethical use of new technologies;
- information and communication technology course, with topics related to the ethics of correct use in this environment;
- topics within the Computer-Assisted Training course;
- specialized courses in ethics, the ethics of learning, paper writing ethics, study ethics in general, which include topics related to the use of IT.

d) The formative dimension

Several university teachers (15) have stated that there are no training courses on the use of IT for academic teachers. An aspect that has been found by a university teacher is the lack of systematic learning of information related to the ethical use of IT. Most university teachers (18) consider that a training course in the field of ethical use of IT is necessary.
These courses are necessary because, as a current university teacher has stated, there is "a legislative vacuum that fosters an unethical, institutional, lax attitude regarding the use of IT, which does nothing but support and encourage a similar attitude for the future”.

e) The normative dimension

Regarding the rules existing at the level of higher education institutions, all the respondents mentioned that the code of ethics should comprise rules on IT use. Some of the university teachers (23) indicated the existence of rules regarding the ethical use of IT in the academic environment, while other teachers (8) stated that they did not know of such rules. From the normative point of view, there were indicated different specific regulations that exist in universities, as follows: regulation for the use of information systems in the academic environment; regulation for students and teachers for the correct use of software and equipment; clear rules for using the Plagiarism Detector software.

Besides the elements characteristic of the six dimensions of the hexagonal model, other novelty aspects have been proposed based on the interview results. One of these refers to the existence of differences depending on individual factors, such as gender, age. Thus, one of the respondents, a Professor, said that "senior teachers have a certain reluctance regarding the use of information technology, as opposed to junior teachers who are very open to mixing social networks with technologies and learning platforms”.

Another innovative element that resulted from the interviews was the highlighting of the importance of the seventh dimension of the model, namely the psychological dimension. A respondent stated that "when we talk about ethics in IT use we have to think about two aspects, namely the psychological, personal aspect related to who is using IT and the second aspect related to the context of IT use and what technology has to offer”. Psychologically, another university teacher identified two types of relating to the ethical use of IT in the academic environment: “on the one hand, there are people who tend to devalue bibliographic sources that cannot be found on the net, who are passionate or fascinated by technology and, on the other hand, there are people who do not accept the use of technology, because, for them, only what is in the books is truly valuable”. As the same teacher pointed out, "both extremes are harmful, generating the perception that information technology becomes totally useless when only traditional works enjoy true authentic recognition."

Regarding the causes that lead to the unethical use of digital resources, an experienced university teacher observed that "these practices
of copying, plagiarizing different materials, different articles come from years of high school studies when there was not much importance assigned to respecting ethical conduct”. Also, there were offered by university teachers a series of solutions for the ethical use of IT in the academic environment. One of them represents, as it emerged from the interviews, "the individual and collective assuming of one's own behaviors, which form the basis of an ethical culture, of a community that supports the observance of ethical standards referring not only to information technology, but to the whole society".

4. Discussions

The purpose of this qualitative study was to investigate the perception of teachers in higher education regarding the ethical problems connected to the use of IT. One of the relevant contributions of this research is the fact that it explores the perception of teachers in the academic environment regarding ethical problems, which has been very little investigated so far. Also, the present research leads to increased awareness of university teachers about these problems, which represents a valuable model for building correct ethical behavior of students.

The results obtained in the present research demonstrate once again the ethical problems of using information technology identified in other recent studies. At the didactic and scientific level, it has been found that the ethical problem frequently mentioned by teachers is plagiarism, as shown by data of recent studies (Gullifer & Tyson, 2010; Jiang, et al., 2013; Obeid & Hill, 2017; Šprajc et al., 2017), which indicates that "plagiarism" is increasing in higher education. Zrnec and Lavbic (2017) found that plagiarism in higher education was amplified by the use of different types of electronic devices and the amount of content on the Web, as also indicated by the results obtained in the present research. Regarding the relational dimension, the ethical problems mentioned by the university teachers participating in the interview are also found in other research results, such as the difficulties involved in online communication (Capurro & Pingel, 2002) and in the use of personal data (Gupta, 2018). Referring to the curricular dimension, the importance of implementing a component regarding the correct use of information technologies has emerged from the analysis of the university teachers' answers. Spiller & Ferguson (2011) highlighted the role of teachers in building at students skills to avoid plagiarism in the latter’s prospective teaching, learning and assessment activities. The introduction of research ethics courses within the university is necessary for the development of
students' academic and research skills. Related to the formative dimension, it is certain that students and university teachers need training to understand and avoid plagiarism, as indicated by the results of other studies (Razera et al., 2010). To prevent this problem, teachers need extensive training in the use of detection systems. From a normative perspective, the results of the present study reinforce the opinions of other authors (Jereb et al., 2018) regarding the fact that there must be clear policies regarding plagiarism and its consequences in the academic environment.

There are also a number of limitations of research, which derive from the low level of representativeness of the participants, which requires an extension of the research group. Therefore, the generalization of results is not possible due to the specific context and the small number of university teachers who participated in the study.

5. Conclusions

The ethical problems frequently mentioned by the academic teachers in relation to the preparation of materials for courses and seminars and their research activity are related to plagiarism and concern aspects related to the incorrect use of sources in the elaboration of didactic materials, incorrect referencing of technological resources, the insertion of multimedia elements in the materials elaborated for didactic purpose without specifying the source, incorrect and/or inaccurate reference to the initial source. From the perspective of the relational dimension, which concerns the use of social networks in the academic environment, problems have arisen regarding online communication, as well as difficulties related to the use of personal data or documents of other persons, or regarding the security level of the closed groups created for educational purposes. From a curricular perspective, it has been found that there are courses or topics on the ethical use of IT in Romanian universities, which have recently been introduced in the curricula for the bachelor and master programs. With regard to the training of teachers in higher education, most teachers highlighted the need to implement a training course in the field of ethical use of IT. From a normative point of view, there was stressed the importance of including specific rules regarding the ethical use of IT in the academic code of ethics. The results of the qualitative research indicate the main ethical problems faced by university teachers regarding the use of information technologies in the context of the increasingly frequent integration in the teaching activities, as well as those of research and development.
Acknowledgment

This work was supported by a grant of Ministry of Research and Innovation, CNCS - UEFISCDI, project number PN-III-P1-1.1-TE-2016-0773, within PNCDI III.

References


Perception of Teachers in Higher Education towards Ethical Issues of …  
Liliana MÂŢĂ, Ioana BOGHIAN


