Research Ethics and Artificial Intelligence: Exploring Opportunities and Challenges in Higher Education Institutions

Răzvan-Ionuț Drugă
"Ovidius" University of Constanta, Romania
razvan.druga@365.univ-ovidius.ro

Abstract

This paper aims to analyse the advantages and disadvantages of using technologies based on Artificial Intelligence in Higher Education Institutions. In this way, both teachers and students can be more aware of the implications of using platforms based on these technologies, such as ChatGPT. The research method used is qualitative research. On the one hand, this article will present a brief review of the specialized literature, and on the other hand, it will highlight the results obtained following a focus group conducted with students from a university in Romania. The research findings suggest that the authorities responsible for the educational system should adopt new regulations to monitor the ethical use of AI-based tools, respecting moral and legal principles.

Key words: artificial intelligence, ChatGPT, higher education institutions, research ethics
J.E.L. classification: I23, O39

1. Introduction

Research ethics is a subject that, in recent times, has gained more and more importance in the academic sector, also determined by the increasingly frequent use of platforms based on Artificial Intelligence (AI). According to specialists, this is part of the series of sciences that "are concerned with moral behaviour in research context" (Wiles, 2013, p. 4). At the same time, it is also defined as "the fundamental ethical standards that members of the academic community should adhere to, along with the social responsibilities and obligations they must assume in their scholarly activities" (Chen and Liu, 2024, p. 108). According to the definitions, when we carry out research, we should respect certain principles, so that our approach is as honest as possible and free of errors that can negatively influence the conclusions we have obtained and future directions. With the responsibility of producing a paper in which this reasoning is applied, automatically, the results can be more credible among the public and meaningful to the researched field.

However, there are times when the rules are not followed exactly. This can be determined by several factors. Firstly, because of the conditions they have to meet in order to advance in their career, various teachers are pressured to publish articles, some even in high-impact scientific journals, within a certain period. However, the pace with which some of the studies are published may raise certain question marks regarding compliance with ethical principles. Also, the process by which scientific articles are accepted for publication conveys the feeling of total mistrust in those who provide these services, on the one hand, but also about those who used them, on the other hand.

Secondly, considering the momentum that Artificial Intelligence has gained in recent years, some researchers may be attracted to the use of these technologies in carrying out scientific papers. Such practices are not bad ones. They can even enhance the learning experience of students and the professional development of teachers (Selvanathan and Narayanan, 2024). However, these things are possible as long as the requirements of academic ethics are respected. As even anti-plagiarism software cannot fully detect the fact that some text fragments are generated by AI-based tools (Abd-Elaal *et al.*, 2019; Çerasi and Balcioğlu, 2023), the temptation of researchers and students to deviate from academic ethics is a high one.

In the following sections of the paper, we will present some aspects regarding the use of Artificial Intelligence in the educational process, a series of advantages and disadvantages of this behavior, in certain contexts an immoral one, and some impressions of students from a university in Romania regarding on this topic.

2. Literature review

Even though they have gained momentum in the last few years, tools based on Artificial Intelligence are not recent (Zawacki-Richter *et al.*, 2019). Moreover, they were seen as "one of the most effective tools for developing education globally" (Rahman *et al.*, 2023, p. 4). Depending on the context in which these were applied in the field of education, the tools manifested in various forms: "adaptive learning platforms"; "automatic grading"; "language learning"; "virtual assistants"; "special education support" (Willyt, 2023). Taking these things into account, the involvement of such tools in the daily work of researchers and teachers, on the one hand, but also of students, on the other hand, was seen as an opportunity (Mhlanga, 2023). However, if they are not used in an ethical and effective way, the tools can lead to a setback in the education sector.

According to Dodigovic, Artificial Intelligence represents "an interdisciplinary area of knowledge and research, whose aim is to understand how the human mind works and how to apply the same principles in technology design" (Dodigovic, 2007, p. 100). More specifically, depending on the inputs and the models presented to it, AI delivers results as per them.

The use of AI-based tools in the education sector can be motivated by the series of advantages these offer. For example, the involvement of ChatGPT in teaching can present the following opportunities: "instant and customized feedback"; "reducing the workload of educators"; "making educational resources available 24/7" (Samala *et al.*, 2024, p. 111). Also, another advantage of using Artificial Intelligence in the educational sector is the provision of a personalized learning experience for each student (Almahasees *et al.*, 2024; Yang *et al.*, 2024). Often, this support is tailored to the needs of learners, compared to traditional educational methods (Ventura, 2017). In this way, depending on the learning pace of each one, they can reach, with the support of AI tools, a higher level of knowledge and learning, thus being able to cope with the demands of the teaching staff in the assessment sessions. At the same time, when they are unsure or did not understand very well a certain concept taught by a teacher, learners intend to use platforms based on AI technology to ask certain questions, avoiding interaction with a person. Thus, they develop a sense of security and will no longer feel constrained or threatened that they will be given a certain label that would create a negative image for them.

All these things are determined, on the one hand, by the basic characteristics of the ChatGPT language model (Mhlanga, 2023), and on the other hand, by that "feeling of friendship" that was born between the digital interface and the learners (Pelau *et al.*, 2024). Even so, regardless of the platform used, the feeling seems to be manifested in only one way. According to the literature, one of the challenges for ChatGPT is the lack of emotion (Bettayeb *et al.*, 2024). This makes it harder to process a response that is based on analysing, understanding, or recognizing the feelings the user wants to convey. Also, in the specialized literature it is mentioned that in the educational system, the use of a language model based on Artificial Intelligence should only complement human interaction or teaching staff, not replace them (Evans *et al.*, 2023).

According to a study conducted among students in Hong Kong, even if some of them have already been mentioned, in one form or another, other advantages generated by the use of AI-based tools in the educational process are: "personalized and immediate learning support"; "writing and brainstorming support"; "research and analysis support"; "visual and audio multi-media support"; "administrative support" (Chan and Hu, 2023, p. 13).

Analysing these opportunities very well, Artificial Intelligence not only supports interested people to complete their tasks. This allows teachers to adopt more interactive and attractive strategies and methodologies in the teaching process (Albadarin *et al.*, 2024), so that the free time can be used in other directions.

Unfortunately, in addition to the previously mentioned advantages, the use of ChatGPT in the educational process also presents certain disadvantages. Their nature is given by the effects and the way students understand to use Artificial Intelligence. For them, it can only be reduced to a series of

solutions when they are in the position of giving a written assessment, preparing a research project, responding to some requirements or solving some problems. As we already anticipate, the adoption of certain forms of cheating, such as plagiarism or copying, when students are made to react to teachers' requests, represent negative phenomena generated by the use of AI-based tools (Almahasees *et al.*, 2024; Samala *et al.*, 2024; Yang *et al.*, 2024). Thus, educational institutions are forced to introduce certain regulations to discourage the use of these tools in a way contrary to academic ethics.

At the same time, another disadvantage could be represented by the underdevelopment of students' analytical and cognitive skills. They, instead of creating their own ideas and opinions, prefer to use the ChatGPT platform without filtering the information they receive (Isiaku *et al.*, 2024; Yang *et al.*, 2024). In many cases, not filtering the data generated by AI platforms can give students, but not only, a false sense of achievement. Also, according to various studies, the generated outputs can be based on fictitious, unverified data that can also mislead the evaluators, without there being a control bridge between the quality of the written material and the purpose for which it will be used (Selvanathan and Narayanan, 2024).

According to the same research mentioned above, conducted among students in Hong Kong, the series of challenges generated by the excessive use of AI-based tools can also include: "accuracy and transparency"; "privacy and ethical issues"; "holistic competencies"; "career prospects"; "human values"; "uncertain policies" (Chan and Hu, 2023, p. 13). In addition to ethical issues, these challenges bring into question, again, aspects regarding the personal development of individuals, which may also be affected. From this point of view, people who try to break certain rules of academic conduct should think twice before acting.

Other limits that should be considered by students and teachers are: "data privacy issues", "cultural differences", "language skills", and "ethical problems" (Selvanathan and Narayanan, 2024, p. 967). Some of these negative points could be avoided by drawing up informed consent forms or by asking advice from ethics committees when particular research is conducted.

Following the above, what both learners and teachers should understand is that AI-based platforms should only be used as a support in academic writing, not as a substitute for human creativity and intelligence (Aljanabi *et al.*, 2023).

3. Research methodology

To carry out the case study of this paper, we chose the focus group method. The target group was made up of students from a university in Romania, enrolled in a Didactic Master's study program. The main motivation for the selection of this group was represented by the career opportunities they will have after graduation. By attending the courses of a department that supports psycho-pedagogical training, they will have the chance to become future teachers. Thus, they were able to answer the questions posed by the research moderator as university students, but also thinking about their future profession.

The research objectives were:

O1: to identify the advantages of respecting ethical principles in scientific research.

O2: to identify the advantages of using tools based on Artificial Intelligence in carrying out projects and assignments requested by teachers.

O3: to identify the disadvantages of using tools based on Artificial Intelligence in carrying out projects and assignments requested by teachers.

O4: to identify the ways in which students are trained on compliance with the norms of ethics and academic integrity.

Before participating in the research, the students were notified about this activity, through an information sent to their institutional email, and were invited to express their intention. Also, those who accepted the invitation and filled out the informed consent form were assured that all the information presented during the research will be confidential and anonymous, the identity of the persons not being made public. Thus, the principles of the General Data Protection Regulation (GDPR) were also respected.

The discussions held were free and respected the structure of an interview guide prepared in advance by the moderator and made known to those who accepted the invitation. At the same time, depending on the direction in which the discussions continued, helpful questions were also asked, so that the participants did not deviate from the main topic.

Considering the peculiarity of the research method, the sample was made up of six people. The discussions lasted approximately 50-60 minutes and took place in a physical format, in a lecture hall, in May 2024.

4. Findings

The question that started this focus group referred to the identification of keywords associated with research ethics. A centralization of the answers can be observed in Figure no. 1.

Figure no. 1. Keywords associated with the concept of research ethics

Source: own data processing.

As can be seen in the previous figure, when discussing the concept of research ethics, students assimilate it, most often, with the following words: *integrity*; *respect* and *correct conduct*. This confirms that during the conduct of a research it would be good to have an appropriate behavior and to respect the target group and those who will use the obtained results. Thus, without deviating from ethical standards, we will keep an intact profile that can be rewarded, in the future, by different means.

The next question referred to the degree of students' familiarity with the observance of ethical principles in the writing of various educational materials. The answers were unanimously positive. This can be explained, on the one hand, as the students also said during the research, by their participation and involvement in the *Ethics and academic integrity* course, a component discipline of their master's program curriculum. During this course they learned about citation norms and avoiding plagiarism in scientific research. On the other hand, the positive attitude can also be generated by the instructions that the students receive from the teaching staff, along with the requirements for preparing projects and assignments.

Another aspect addressed with the students participating in the focus group referred to the advantages of respecting ethical principles in scientific research. Among them, we can mention: *research success; the correct use of the collected information; the research results are real, easy to centralize and reflect reality in relation to its subject; ensuring a normal and fair competitive environment; respect for the work of other researchers; respect for the legislation in force and for the educational institution to which the researcher is affiliated; carrying out original research works, which can bring added value and innovation in the respective field; originality in terms of the material produced; good conduct in research activity; professional, moral and social responsibility*.

In addition to the previously mentioned advantages, students were also asked about the disadvantages that non-compliance with the principles of research ethics might have. Although this activity requires more effort and time to carry out the studies, if the principles are not respected, there is a risk of a violation of the intellectual property rights of genuine researchers, without adding value to the respective field. Thus, students recommend compliance with the norms of ethics and academic conduct in scientific research.

Because Artificial Intelligence has penetrated, intensively, in this field in recent years, the students also discussed the use of tools based on this principle in the accomplishing of various projects or assignments. Their answers were some negative, reasoning that by using ChatGPT, they would assign themselves a work and a result that would not belong to them. At the same time, Artificial Intelligence is not recommended for writing scientific research materials, ChatGPT not being approved and agreed in this context.

However, some advantages and disadvantages were presented among students who used this platform in different contexts. From the series of advantages, we can mention: *saving time* or *elevated expressions, with specific terms*. When discussing the disadvantages of using ChatGPT, students mentioned the following: *using exaggerated or unfamiliar terms*; *the possibility of the existence of papers identical to those of other colleagues*, if for this purpose they used ChatGPT; *lack of originality*; *lack of creativity and analytical ability*.

At the end of the discussions, concluding, the students consider the fact that they respect the principles of ethics in scientific research when they develop different projects for the university. Also, since they did not violate these rules, the students affirmed that they have not been penalized, until now, for not respecting the principles of ethics in scientific research.

5. Conclusions and recommendations

This paper aimed to analyze the opportunities and challenges arising with the involvement of Artificial Intelligence in research ethics at the level of higher education institutions.

As mentioned, systems based on Artificial Intelligence are in continuous development and will be increasingly requested by users, once the advantages they offer are identified. However, depending on the field in which they are applied, the systems can present certain limits that can put users in not very pleasant situations. Therefore, when considering the use, development or promotion of Artificial Intelligence, three major criteria should be considered: (1) "transparency and accountability"; (2) "moral and legal principles"; (3) "environmental protection and sustainability" (Wu *et al.*, 2023, p. 1130). In this way, we should always be honest with ourselves and our actions, be fair and promote green behavior that does not harm the environment. This last aspect is generated by the increased energy consumption that the use of technologies based on Artificial Intelligence implies.

When discussing the use of ChatGPT or other mechanisms based on Artificial Intelligence in the educational system, in general, and in the university environment, in particular, in addition to other conditions and considering the three criteria mentioned, it is vital to guarantee compliance privacy, fairness and non-discrimination, while ensuring transparency throughout this process (Mhlanga, 2023).

Taking into account what was presented previously, Artificial Intelligence can have a negative effect on the educational sector, with an emphasis on respecting the principles of ethics in research, but not only. To eliminate this risk, authorities should adopt a set of rules that outline how Artificial Intelligence can be used. Even if, despite the technological progress, banning the use of ChatGPT in the academic environment could be a measure, the authorities should better focus on conducting certain training sessions, in which educators and students are present (Selvanathan and Narayanan, 2024). The seminars will teach attendees how to use these tools to their advantage. Training events will also be able to add value to ethics in scientific research. Developers of AI-based tools can participate in the sessions to make attendees understand the mechanisms behind their operation. Thus, new methodologies can be developed to regulate the use of ChatGPT in the educational sector, but with the inclusion of very well-defined ethical aspects (Acosta-Enriquez *et al.*, 2024; Isiaku *et al.*, 2024). In this way, the reputation of the educational institutions will be able to be high, without being affected by the quality of the scientific papers published by the academic community or the

quality of the graduates who are preparing to enter the labor market.

Regarding this last topic, in addition to the rigor of the results obtained in the research carried out, Artificial Intelligence can also have effects on future graduates. Because they turn to such tools, students will be tempted to stop analysing and interpreting certain data collected by different methods, putting everything based on new technologies (Pittner *et al.*, 2023). Thus, when they occupy a position within a company, they will not be able to solve a certain task individually but will feel the need to call on the tools that are built based on Artificial Intelligence. In this way, their productivity at work will be low and their job security may not be high.

Finally, in order not to put pressure only on the representatives of higher education institutions, students should assume the originality of the papers they write, by completing a declaration stating that the content of the material is original and that it respects the standards of professional ethics and quality. Universities should promote these standards by publishing them on the website, accessible to anyone who is interested.

For future research, we propose to carry out a semi-structured interview with teachers who work in departments that support psycho-pedagogical training. The interview will be approached from a dual perspective. On the one hand, we will want to analyse the relationship that teachers have with students, when it comes to respecting ethical norms in scientific research. This relationship encompasses both how students are trained to behave ethically and with integrity, but also how they are punished if they do not follow the principles. On the other hand, the interview will include aspects regarding the activity of teaching staff in the writing of various academic papers and the analysis of their behavior regarding compliance with the norms of ethics and academic integrity.

In conclusion, the involvement of Artificial Intelligence in the higher education system can have positive effects, as long as the threats that its existence can cause are avoided and, at the same time, the principles of academic ethics are respected.

6. Acknowledgement

This paper was supported by the AD. AUGUSTA project, code 2/16.11.2022, financed by the Romania's National Recovery and Resilience Plan, call no. PNRR-III-C9-2022-I10.

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