

Міністерство освіти і науки України



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Збірник містить наукові праці, які присвячені висвітленню теоретичних і практичних результатів наукових досліджень молодих науковців, викладачів закладів вищої освіти, докторантів, аспірантів, магістрантів, здобувачів з актуальних питань різних напрямів наук: педагогічних, психологічних, природничих, медичних, технічних, філософських, економічних, філологічних, юридичних та інших.

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## ETHICAL RESEARCH IN THE AGE OF ARTIFICIAL INTELLIGENCE

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The paper investigates and addresses the ethical implications and challenges associated with the increasing integration of AI technologies in research practices; identifies the ethical issues arising from the use of AI in various research domains; and proposes strategies and guidelines for conducting AI research ethically.

**Keywords:** ethical research, academic integrity, artificial intelligence, digital tools.

У статті досліджуються та розглядаються етичні питання, пов'язані зі зростаючою інтеграцією технологій штучного інтелекту в дослідницьку практику; визначаються етичні проблеми, що виникають у зв'язку з використанням ШІ в різних дослідницьких сферах; пропонуються стратегії та керівні принципи ведення етичних наукових досліджень із використанням ШІ.

**Ключові слова:** етичні дослідження, академічна доброчесність, штучний інтелект, цифрові технології.

Conducting research, being a rewarding task, leading to discoveries, advancements in technologies, and positive societal impacts, is a challenging and laborious task that requires a lot of time and effort. It involves numerous stages and includes the ability to coordinate efforts, share insights, and resolve conflicts within the field of knowledge. Effective planning, collaboration, perseverance, and adherence to ethical principles can help researchers navigate the challenges and present their findings and achievements to society.

The digital era has completely changed education [2, 16] by providing teachers and students with almost limitless access to technology, and state-of-the-art tools and resources. However, it has also posed some threats and dilemmas for the pursuers of academic careers altering the way people access information, conduct research and ensure following standard guidelines and regulations.

Academic integrity presently faces complex challenges, especially due to the utilization of Artificial Intelligence (AI) technologies. One of the examples of AI technologies is CharGPT which possesses the ability to engage in discussions on various subjects, delivering responses characterized by refined language and precise content, being trained on excessive sources from the Internet [14]. If not properly cited, copying and pasting data from websites, online articles, or even AI-generated content might result in plagiarism and will lead to the occurrence of unethical situations within the academic environment [5].

The ease of access to vast amounts of information online, coupled with the rapid dissemination of knowledge through digital platforms, has made it increasingly challenging to distinguish between original work and copied content. Furthermore, the rise of cheating services and the proliferation of predatory journals add further layers of complexity to maintaining academic integrity.

Thus, **the purpose of the research** is to investigate and address the ethical implications and challenges associated with the increasing integration of AI technologies in research practices; to identify and understand the ethical issues arising from the use of AI in various research domains; to propose strategies and guidelines for conducting AI research ethically; raise awareness among researchers, policymakers, and stakeholders about the importance of ethical considerations in AI research.

With the rise of the “digital age”, conventional research methods have been reconceived, offering access to novel data sources and researchers have gained access to advanced tools like AI that help to process, analyse and interpret the data [12].

AI refers to software and hardware that is intelligent and that can reason, absorb data, learn, communicate, organize work, and distinguish between objects [1].

Educational institutions have already been using the tool in a variety of ways to develop curricula and content, automate administrative tasks, improve student learning experiences, and develop instructional processes [4]. Although AI is excellent at designing and generating tasks [11], its use raises some problems, such as the generation of false or manipulated data and the threat it poses to the maintenance of academic integrity [9]. Concerning this fact, researchers and experts in research ethics, express concerns that such vast utilization of digital tools may lead both individual researchers and research groups to partake in unethical conduct, fabricating research findings or plagiarising from their peers in pursuit of their objectives [6]. Essays produced by ChatGPT also exhibit significant deficiencies in structuring and organization with sometimes illogical and misleading formulations [3].

Another pressing issue with AI utilization is data privacy and the risk of bias in its algorithms [11]. Ensuring the responsible and ethical use of AI in education extends far beyond technical issues: it covers the examination of the potential social and ethical ramifications of its integration, including apprehensions regarding individual privacy and bias [10]. As long as there are no specific rules on how to recognize and address these issues, there will be cases of immoral decisions, their justification, or misleadingly reframing them [8].

Ethical research refers to conducting scientific investigations in a manner that upholds moral principles and respects the rights of all individuals involved, including researchers, participants, and affected communities. It involves ethical guidelines, regulations, and standards to ensure the integrity, transparency, and fairness of the research process.

Research conducted within an academic setting operates within a fiercely competitive atmosphere marked by escalating expectations in terms of time and productivity, compounded by limited access to research funding. Additionally, such a research environment may become conducive to ethical breaches, such as research misbehaviour or misconduct [7, 13]. Ethical and integrity challenges, such as conflicts of interest, data falsification, disregard for participants' rights, and plagiarism, among others, possess the capacity to erode the trustworthiness of research outcomes and



result in adverse repercussions for various stakeholders [7]. Therefore, it is apparent that the academic community recognizes these various ethical concerns to assess the potential risks they present (and to whom), and subsequently strive for their prevention or mitigation through measures such as education, strengthened policies and procedures, and the implementation of risk management strategies [6].

Addressing the issue directly necessitates educating researchers on how to interact properly and academically with AI technology [3]. Conventional ethical frameworks, which have long guided research practices, are now being scrutinized for their relevance and applicability in the context of AI research. The Belmont Report on Ethical Principles and Guidelines for the Protection of Human Subjects of Research [15] establishes three fundamental principles that form the ethical foundation for researchers when human subjects are involved in studies: beneficence, respect, and justice.

Research conducted using biased AI may not only fail to provide accurate insights but also perpetuate injustices or hinder progress toward equitable and inclusive outcomes. Mitigating AI bias and unethical statements in academic research requires a comprehensive approach that combines technological solutions, ethical guidelines, and organizational practices. Here are some strategies:

1. Bias detection and evaluation: implement techniques to detect and evaluate bias in research outputs (analyzing datasets, assessing models and research groups, and identifying areas of potential bias).
2. Ethical review and oversight: establish ethical review committees to evaluate research papers, findings and proposals for potential bias and unethical statements (scrutinizing research methodologies, data sources, and potential impacts on individuals or communities).
3. Transparency and accountability: disclose any potential biases or limitations in the work and be prepared to address concerns raised by stakeholders.
4. Education and training: provide researchers with education and training on ethical principles, bias mitigation techniques, and responsible conduct research in the era of AI.



5. Collaboration and peer review: encourage collaboration and peer review among researchers to promote transparency, diversity of perspectives, and critical evaluation of research outputs.

6. Institutional policies and guidelines: define acceptable practices, establish reporting mechanisms for ethical concerns, and enforce consequences for violations.

To ensure mitigating AI bias and unethical statements, researchers involved in the academic environment have to raise awareness about the importance of ethical considerations. It's advisable to organize workshops, seminars, and training programs focused on ethical AI principles and best practices to equip researchers with practical skills to understand and address ethical issues in AI research. Moreover, educational institutions are to develop and disseminate guidelines on conscious research in the digital age outlining ethical principles, decision-making processes, and responsible practices to follow. One more important step is to foster collaboration and partnerships between academic institutions to facilitate knowledge sharing, the capacity to solve common ethical issues, and the development of ethical standards and guidelines. Furthermore, advocating for the integration of ethical impact assessments into research projects can help identify and evaluate potential ethical risks and consequences associated with using AI technologies in research. Finally, encouraging ongoing dialogue and reflection within academic communities on the ethical implications of AI in research is recommended. This can be achieved through forums, discussion groups, and online platforms where researchers can share insights, discuss ethical dilemmas, and seek guidance from peers and experts. By fostering a culture of open communication and critical reflection, academic institutions can promote continuous learning and improvement in ethical research practices.

The future of ethical research in the age of AI holds promise for advancing responsible AI innovation, fostering trust and accountability, and ensuring that AI technologies are developed and deployed in ways that benefit society while upholding fundamental ethical values.

However, any phenomenon has both positive and negative aspects as well as beneficial or detrimental effects. In the case of technological advancements like AI, we

can identify positive aspects such as improved efficiency, productivity, and convenience, alongside negative aspects such as privacy concerns and ethical dilemmas.

As AI technologies become more prevalent and impactful, there is increased scrutiny and attention on ethical considerations in AI research. Researchers, policymakers, and stakeholders continue to grapple with complex ethical dilemmas and strive to develop frameworks and guidelines to address them.

Ensuring the promotion of ethical research and fostering academic integrity in the age of AI involves interdisciplinary collaboration, bringing together experts from diverse fields within the academic environment. This broader collaboration ensures that ethical research practices are informed by a wide range of perspectives and stakeholders, leading to more robust and comprehensive solutions to ethical challenges in research.

As AI continues to reshape the landscape of research and academia, we must prioritize ethical considerations and uphold academic integrity. By fostering interdisciplinary collaboration, promoting transparency and accountability, and advocating for the integration of ethical principles into research practices, we can ensure that the benefits of AI are maximized while minimizing potential risks and harm. Moreover, by prioritizing education, awareness-raising, and the development of ethical guidelines and standards, we can build a foundation for ethical research that upholds the values of integrity, fairness, and respect for human rights.

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## **ADAPTING ELT MATERIALS TO THE NEEDS OF DYSLEXIC STUDENTS**

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*The article deals with the issue of adapting English language teaching materials to the needs of students with special educational needs, namely dyslexic learners. The author outlines and categorizes the adaptation techniques by putting them into three groups: the techniques used for modifying reading materials, those which may be*

Наукове видання

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