



Revista on line de Política e Gestão Educacional
Online Journal of Policy and Educational Management



¹ PhD, Associate Professor, Head of Department of Pharmacology and Pharmacotherapy, Kyiv Medical University, Kyiv, Ukraine.

² Candidate of Military Sciences, Docent, Chief of Department, Department of Air Assault Forces, National Defence University of Ukraine, Kyiv, Ukraine.

³ Head of the Research Laboratory for the Development, Training and Employment of Airborne Assault Forces, Department of Air Assault Forces, National Defence University of Ukraine, Kyiv, Ukraine.

⁴ Candidate of Medical Sciences, Docent, Department of Surgery and Transplantology FPGE LNMU, Faculty of Postgraduate Education, Danylo Halytsky Lviv National University, Lviv, Ukraine.

⁵ Teacher, Institute of Psychological



THE IMPORTANCE OF SCIENTIFIC INTEGRITY FOR THE IMPROVEMENT OF UNIVERSITY LEVEL LEARNING

A IMPORTÂNCIA DA INTEGRIDADE CIENTÍFICA PARA A MELHORIA DA APRENDIZAGEM AO NÍVEL UNIVERSITÁRIO

LA IMPORTANCIA DE LA INTEGRIDAD CIENTÍFICA PARA LA MEJORA DEL APRENDIZAJE UNIVERSITARIO

Iryna TYMCHENKO¹
i.tymchenko@kmu.edu.ua
Ihor DANYLIUK²
dan.i.7777273@gmail.com
Mykola YAROSHOV³
302z.yaroshov.nukolay@gmail.com
Roksolana YAREMKEVYCH⁴
roksa1607@gmail.com
Svitlana DEMIKHOVA⁵
svitlanademikhova@gmail.com



How to reference this paper:

Tymchenko, I., Danyliuk, I., Yaroshov, M., Yaremkevych, R., Demikhova, S. Developing critical thinking in efl learners without a linguistic background. *Revista on line de Política e Gestão Educacional*, 29, e025017. DOI: 10.22633/rpge.v29i00.20272

Submitted: 30/05/2025

Revisions required: 23/06/2025

Approved: 01/07/2025

Published: 11/07/2025

ABSTRACT: The study focuses on the concept of higher education development in terms of academic integrity. The article aims to analyze the role of technology in creating a unique text within scientific communication in the current information space. The functionality of scientific communication in higher education is substantiated. The trends in the development of modern models of scientific communication are highlighted. The specifics of innovative approaches to creating a unique scientific text are investigated. The problems of the life cycle of electronic resources and related risks are studied. The principles of the Bucharest Declaration on Ethical Values and Principles of Higher Education in the European Region are analyzed. The directions for improving scientific communication processes in higher education are defined. The article demonstrates that the development of the educational environment in the modern, globalized scientific field necessitates the optimization of specific requirements for creating a unique text based on the principles of originality and integrity.

KEYWORDS: Academic integrity. Text uniqueness. Scientific communications. Higher education. Plagiarism.

RESUMO: O estudo centra-se no conceito de desenvolvimento do ensino superior em termos de integridade académica. O artigo tem como objetivo analisar o papel da tecnologia na criação de textos originais no âmbito da comunicação científica no atual espaço informativo. A funcionalidade da comunicação científica no ensino superior é comprovada. Destacam-se as tendências no desenvolvimento de modelos modernos de comunicação científica, e investigam-se as especificidades das abordagens inovadoras para a produção de textos científicos originais. Também são analisados os problemas relacionados ao ciclo de vida dos recursos eletrônicos e os riscos a eles associados. Os princípios da Declaração de Bucareste sobre Valores Éticos e Princípios do Ensino Superior na Região Europeia são examinados, bem como as direções para o aprimoramento dos processos de comunicação científica no ensino superior. O artigo demonstra que o desenvolvimento do ambiente educativo no contexto científico globalizado atual exige a otimização de requisitos específicos para a elaboração de textos autênticos, com base nos princípios de originalidade e integridade.

PALAVRAS-CHAVE: Integridade académica. Originalidade do texto. Comunicações científicas. Ensino superior. Plágio.

RESUMEN: El estudio se centra en el concepto de desarrollo de la educación superior en términos de integridad académica. El artículo tiene como objetivo analizar el papel de la tecnología en la creación de un texto único dentro de la comunicación científica en el espacio informativo actual. Se fundamenta la funcionalidad de la comunicación científica en la educación superior. Se destacan las tendencias en el desarrollo de modelos modernos de comunicación científica. Se investigan las características específicas de los enfoques innovadores para la creación de un texto científico único. Se estudian los problemas del ciclo de vida de los recursos electrónicos y los riesgos relacionados. Se analizan los principios de la Declaración de Bucarest sobre los valores y principios éticos de la educación superior en la región europea. Las direcciones para mejorar los procesos de comunicación científica en la educación superior. El artículo demuestra que el desarrollo del entorno educativo en el campo científico globalizado moderno requiere la optimización de requisitos específicos para la formación de un texto único basado en los principios de originalidad e integridad.

PALABRAS CLAVE: Integridad académica. Originalidad de los textos. Comunicaciones científicas. Educación superior. Plagio.

Article submitted to the similarity system



Editor: Prof. Dr. Sebastião de Souza Lemes

Deputy Executive Editor: Prof. Dr. José Anderson Santos Cruz.

INTRODUCTION

The primary goal of science development, in general, is to obtain new, actual scientific knowledge. The higher education environment serves as a basic prerequisite for the effective implementation of this process. The rapid development of information and communication technologies, as well as digital solutions, contributes to the global informatization of text creation and the fight against plagiarism.

The international practice of integrating the principles of academic integrity began to take shape at the institutional level several decades ago. It is an essential component in the fight against various manifestations of plagiarism and scientific dishonesty. In 1990, the United States established the Centre for Academic Integrity to combat fraud, plagiarism, and academic dishonesty in higher education, which, in 2010, officially became the International Centre for Academic Integrity (hereinafter referred to as the ICAI). The organization operates on six continents, in over twenty countries (ICAI, 2024).

Today, there are successful models of academic integrity support at the level of individual educational institutions. In particular, Curtin University (Australia, 2024) requires all new students to complete an Academic Integrity Programme at the beginning of their studies.

Thus, today, the development of higher education requires readiness for effective scientific communication in an integrated educational environment, primarily to ensure academic integrity. This issue is especially important given Ukraine's progress in European integration, which makes the subject of the study relevant.

Literature review

From different scientific perspectives, the problem of ensuring academic integrity and determining its role in the development of modern higher education has been directly or indirectly addressed in numerous scientific studies. In particular, Malik et al. (2021) examine the leading causes of plagiarism in higher education, including the lack of a proactive and motivated approach to education, non-compliance with citation terms, incompetence of teachers, laziness and uncertainty, and students' perception of plagiarism as a common phenomenon in the absence of significant penalties for its use.

Prashar et al. (2024) recently published an article investigating the ethical considerations of higher education students regarding unintentional plagiarism. The authors analyze higher education institutions' (HEIs) efforts to raise students' ethical awareness, which is a formative factor in their behaviour concerning academic integrity. Prashar et al. (2024) also identify individual factors, such as gender, age, internal religiosity, and work experience, that influence the ethics of information and research activities in the higher education environment.

Fatima et al. (2020) examine the impact of pressure, self-efficacy, and self-competence on student plagiarism in higher education. The results of the study show that some individual human factors encourage students to engage in certain unethical plagiarism practices.

Dawson (2020) investigates the possibilities of preventing electronic fraud and supporting academic integrity in higher education. In contrast, Holden et al. (2021) identify the types and causes of academic dishonesty, which may influence the development of a strategy to promote academic integrity effectively.

Sullivan et al. (2023) study the limits of ChatGPT's influence on the emergence of relevant doubts about academic integrity in higher education. The authors draw attention to the low level of media coverage of the negative impact of artificial intelligence on the quality of higher education and the level of academic integrity, which is explained by the strategy of active promotion of ChatGPT. At the same time, Sullivan et al. (2023) are convinced that the impact is measured not only by the increased use of plagiarism elements in the educational environment but also by the destructive impact on students' self-development processes.

Sefcik et al. (2020) investigated approaches to forming academic integrity based on mapping the landscape of educational programmes. The authors prove that academic integrity educational programmes integrated into the educational field of higher education institutions can positively influence students' awareness of plagiarism and significantly reduce the number of cases of academic integrity violations. Sefcik et al. (2020) position centrally managed programmes that impose sanctions for non-compliance as the most effective method of achieving academic integrity requirements in higher education.

Thus, most modern scholars see the development of information and communication tools as a powerful potential for improving scientific communication and forming unique texts. At the same time, the issue of improving the algorithm for creating a unique text with the help of innovative technologies remains outside the scope of research interests, which makes it necessary to study in detail the concept of higher education development in terms of academic integrity.

Aims

The article aims to analyze the role of technology in creating a unique text within the process of scientific communication in the current space of higher education development.

Materials and Methods

The article uses a combined approach to study the role of academic integrity in the development of higher education in different contexts. This research is descriptive and includes case studies and analysis of secondary data.

The research procedure consists of two main stages: data collection and analysis. At the data collection stage, primary sources of information were used. For this purpose, publications indexed in the leading scientific databases Web of Science and Scopus were used.

The keywords used for the search were “academic integrity, text uniqueness, scientific communications, higher education, information society, plagiarism, digitalisation, electronic publications.” The criteria for the exclusion and inclusion of research papers and publications were the spatial and temporal indicators and the level of information reliability. Causal analysis was used to assess the risk of bias in the included studies.

The study focuses on informative data from recent years and indicators of academic integrity in higher education from around the world. The determined sample size of 25 sources was considered appropriate in view of practical realities while ensuring sufficient scientific and statistical power. Qualitative research focuses on detailed data that can provide insights into experiences and current perspectives on improving approaches to academic integrity to promote the principles of quality higher education in an integrated educational environment.

RESULTS

At the stage of globalization of the educational environment, the dependence of the quality development processes of the higher education system on the state of academic integrity, against the background of the active development of information and communication technologies and digitalization, is becoming evident. Unlimited access to the integrated scientific information hub (scientific periodicals, repositories, scientometric databases) creates new challenges for the fight against plagiarism.

The definition of academic integrity in the European research and education environment has been significantly expanded and clarified in the course of the activities of the aforementioned ICAI. ICAI was founded in 1992 by Don McCabe, a professor at Rutgers University, to combat fraud, plagiarism, and academic dishonesty in higher education. Since then, its mission has expanded to foster a culture of integrity in academic communities worldwide.

In 1999, the ICAI defined the “fundamental values of academic integrity”—fairness, honesty, respect, trust, and responsibility—to which another was added fifteen years later: courage. In fact, according to the ICAI concept, academic integrity is about ensuring that these values are upheld.

The Bucharest Declaration on Ethical Values and Principles of Higher Education in the European Region (Unesco Cepes, 2004) plays an important role in defining the role of academic integrity in the development of higher education. The Declaration is one of the pioneering

documents that define the basic principles of academic integrity in the educational process and position it as the basis for the quality of education and training.

The Bucharest Declaration emphasizes that the pursuit of integrity begins with individual efforts to systematically avoid fraud, deception, lying, stealing, and other dishonest behaviour that negatively affects the quality status of academic degrees. The main areas of academic integrity formation are defined:

- Trust is a fundamental principle for creating a climate in an educational institution that fosters the unhindered exchange of ideas and creativity;
- Fairness is a principle in teaching, assessment, and research that is based on consistent, legitimate, transparent, fair, and objective criteria;
- Respect is the free exchange of ideas and freedom of expression shared by all members of the academic community;
- Responsibility is a common and unambiguous principle for all academic community members, which allows for the maintenance of established accountability.

Among the institutional and project-based frameworks for ensuring academic integrity are the activities of the largest European Network for Academic Integrity (European Network for Academic Integrity - ENAI), one of the most important and influential figures in the field of academic integrity on a global scale, as well as the Impact of Policies for Plagiarism in Higher Education Across Europe (IPPHEAE) project, which aims to develop anti-plagiarism programmes in European higher education institutions.

An enjoyable experience in the field of research is also the *Statement on Academic Integrity* of the European Students' Union, which contains a detailed description of the basic principles of academic integrity from the perspective of higher education students, not researchers or teachers.

Innovative technological capabilities now offer alternative educational and scientific communication models based on open access. Against the backdrop of this trend, the traditional journal-oriented model of disseminating scientific information is being transformed into a pay-per-article model. Also, the open archive model is gaining importance, as it creates opportunities for access to high-quality scientific primary sources. Broad access and the simplicity of search engines minimize the negative phenomenon of scientific isolation and create new opportunities for scientific and educational cooperation.

The principles of editorial policy and the quality of their implementation have significant potential for promoting the principles of academic integrity. In particular, violations of academic integrity principles by authors of scientific content are often caused by a low level of awareness of publication ethics (Prashar et al., 2024). This indicates the need to analyze

the information space of academic communities for the dissemination of educational content in order to increase information literacy in the field of academic integrity and prevent malpractice.

At the same time, academic libraries, which are entrusted with the functions of information support for scientific and educational activities, should actively promote the level of information literacy of participants in the higher education environment regarding academic writing, publication ethics, and academic integrity.

The trend towards using artificial intelligence (AI) capabilities to create unique texts is worth noting. The generation of unique content using AI tools has a dualistic assessment, and, therefore, the scientific community excludes the possibility of using AI in the process of creating a unique text. This reflects the general concept of individualizing scientific achievements, creativity, and uniqueness (Holden et al., 2021).

The positioning of a text generated by artificial intelligence as one's authorship is regarded as a direct violation of the principles of academic integrity. At the same time, the use of AI capabilities stimulates the potential of new research areas, facilitates the analysis of specific aspects from an opposite perspective, improves the processing of large information arrays, and is, therefore, positioned as an effective additional tool in the process of searching for and selecting scientific information.

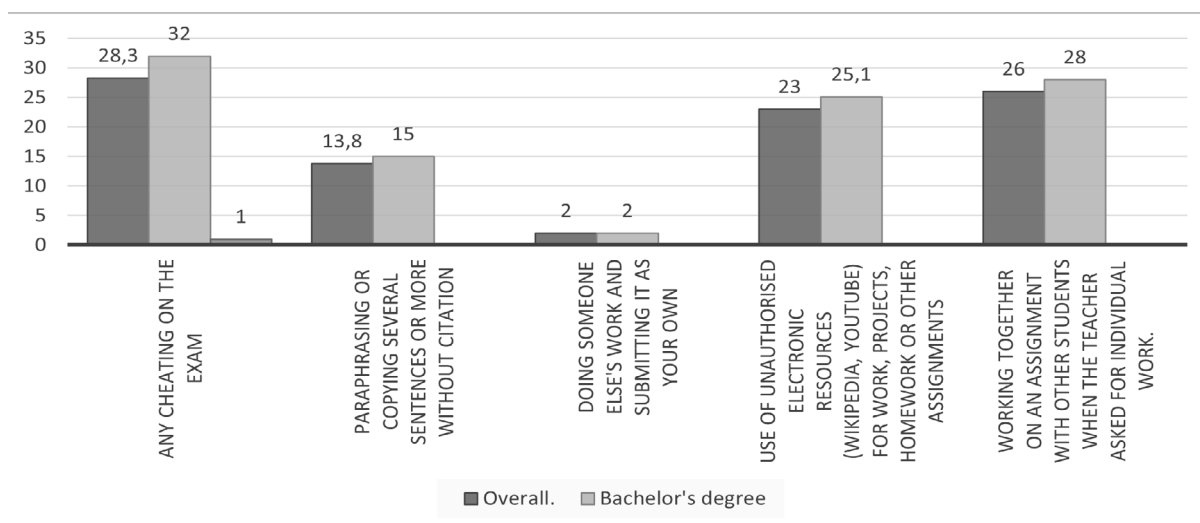
The study of academic dishonesty in colleges and universities began in 1990 by Dr. Donald McCabe, one of the founders of ICAI. This research continues today under the leadership of ICAI and its members. McCabe's original study and subsequent research indicate that more than 60% of students in higher education freely admit to having used plagiarism in some form.

In March 2020, ICAI researchers tested an updated version of the McCabe survey with 840 college students. The study includes data from five higher education institutions, including two large public universities, a small public university, a private university, and a small private liberal arts college. The results revealed key forms of behaviour that violate the principles of academic integrity (Figure 1).

Analyzing Figure 1, it is worth noting that the sample is representative and shows a steady trend of students' tendency to engage in dishonest academic behaviour. Among the main measures to ensure that students maintain academic integrity are the following:

- Providing students with reliable information on the results of their own scientific, educational, and creative activities, indicating the research methods used and reliable primary sources of information;
- Independent completion of educational tasks by the student, as well as tasks of current and final assessments;
- Ensuring compliance with copyright and related rights legislation;
- Using reliable references to sources of information when employing statements, ideas, developments, and data.

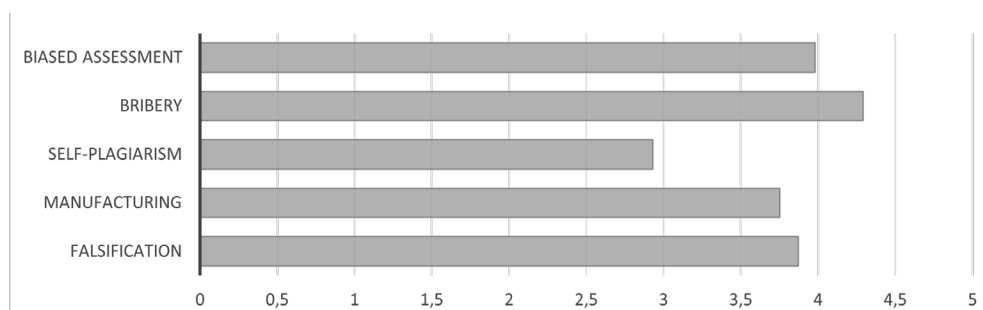
Figure 1. Primary forms of academic dishonesty according to the McCabe survey, in % of students



Source: systematised based on Facts and Statistics (ICAI, 2020).

The results of a survey of participants in Ukraine's higher education environment, conducted by the National Agency for Higher Education Quality Assurance (2021), show that negative attitudes towards plagiarism in the academic environment have increased in recent years. At the same time, the danger of self-plagiarism is underestimated (Figure 2).

Figure 2. Aspects of the impact of dishonesty on the quality of education, average score on a five-point scale



Source: systematised based on data from the National Agency for Higher Education Quality Assurance (2021).

The information presented in Figure 2 reflects the results of the assessment of the impact of various violations of academic integrity by the teaching staff on the quality of educational activities. It indicates that society is not ready to eradicate the habits of dishonest academic activity. At the same time, a representative of the scientific and educational community who reuses his or her own work to replicate publications discredits himself or herself in the eyes of publishers and the international scientific community.

Thus, the sustainable development of higher education requires adherence to the principles of academic integrity by both students and teaching staff. This problem is particularly relevant in the context of Ukraine's European integration.

Discussion

In the context of the globalization of the educational environment, the problem of transforming the scientific communication system, aimed at creating unique scientific texts and improving the quality of higher education, is becoming particularly relevant. Several studies by contemporary authors (Canfield et al., 2020; West & Bergstrom, 2021; Bucchi & Trench, 2021) address the issue of identifying malpractices and counteracting the spread of inaccurate scientific knowledge. Canfield et al. (2020) argue that effective science communication requires a critical approach focusing on inclusivity, equity, and intersectionality. At the same time, West and Bergstrom (2021) focus on the problem of misinformation in the scientific community, which has destructive consequences for the education sector.

Among the modern approaches to creating unique texts, the concept of convergence of the potential of natural and artificial intelligence (Xu et al., 2021), integrated into a single synthesized textual formation, stands out. The authors propose the use of AI capabilities to stimulate the development of new research areas, analyze certain aspects from an opposite perspective, and improve the processing of large information arrays. According to Xu et al. (2021), AI is positioned as an effective additional tool in searching for and selecting scientific information, provided the principles of academic integrity are respected. AI should be perceived not as a source of scientific and educational text but as a means for its effective creation. This is emphasized by Guzman and Lewis (2020), who identify the main disadvantage of using AI in education and science as the risk of diminishing the personal achievements of scientists due to the interpretation of the results of their research.

Farahian et al. (2022) investigate plagiarism's specifics in different countries' higher education. The results presented by the researchers demonstrate significant differences among participants in the higher education environment regarding both understanding and prevalence of plagiarism. Also, the researchers' analysis shows that the level of academic integrity of students is often influenced by unexpected factors, such as the lack of proper ethical competences that should have been formed at the previous level of education; at the same time, cultural differences do not have any impact on the indicator under study.

CONCLUSION

The dynamics of approaches to the quality and reliability of scientific information and ensuring academic integrity in the higher education environment indicate the need to upgrade the concept of creating a unique text as part of scientific communication. The development of the educational environment in the modern globalised scientific field requires the optimisation of specific requirements for creating a unique text based on the principles of originality and

integrity. Unlimited access to the integrated scientific information hub creates new challenges for the fight against plagiarism. According to research, more than 60% of higher education students freely admit that they have used plagiarism in one form or another. Negative attitudes towards plagiarism in the academic environment have increased in recent years. At the same time, the danger of self-plagiarism is underestimated.

The main areas of academic integrity formation are trust, justice, respect, responsibility, honesty, and courage. Improving scientific communication processes to ensure academic integrity in higher education aims to ensure a high quality of intercultural communication and an impeccable reputation of higher education institutions in the context of academic integrity.

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CRediT Author Statement

Acknowledgements: None.

Funding: This research received no external funding.

Conflicts of interest: The authors declare no conflict of interest.

Ethical approval: No ethical approval was required for this study as it did not involve human participants or personal data.

Data and material availability: The datasets created and analyzed in this study are available in open access on the internet.

Authors' contributions: Iryna Tymchenko – Conceptualization, Methodology, Writing – original draft; Ihor Danyliuk – Formal analysis, Validation; Mykola Yaroshov – Investigation, Data curation; Roksolana Yaremkevych – Visualization, Writing – review & editing, Methodology; Svitlana Demikhova – Project administration, Supervision, Resources, Research.

Processing and editing: Editora Ibero-Americana de Educação

Proofreading, formatting, normalization and translation

