A COMPARATIVE ANALYSIS OF EUROPEAN AND UKRAINIAN FRAMEWORKS GOVERNING THE USE OF ARTIFICIAL INTELLIGENCE IN RESEARCH AND EDUCATION

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Abstract

This article presents a comparative analysis of the principal policy and regulatory documents governing the use of generative artificial intelligence in research and higher education. The study examines the European Living Guidelines (third edition, May 2026), the Ukrainian recommendations on the use of artificial intelligence in research (October 2026), and the Ukrainian recommendations for higher education institutions (April 2025). It considers the circumstances that prompted these documents in the context of the emerging concept of postplagiarism, the adoption of Ukraine's Law on Academic Integrity, and the implementation of the European Union's Artificial Intelligence Act. Using a framework developed for this study and comprising six categories of comparative indicators, the analysis compares the documents' legal status, target audiences, classifications of AI use and risk assessment criteria, integrity standards and disclosure mechanisms based on the GAIDeT taxonomy, restrictions on the use of AI detection tools, and models of institutional governance. Detailed practical examples illustrate how these frameworks can be implemented in research and education.

Keywords: generative artificial intelligence; governance of AI use; academic integrity; postplagiarism; living guidelines; GAIDeT taxonomy; institutional policies.

1. Introduction

The rapid development and widespread adoption of large language models and generative digital tools have fundamentally transformed the everyday practices of researchers, educators, and higher education students. Alongside access to powerful analytical resources, automated processing of large datasets, high-speed modelling, and text and code generation, the academic community now faces pressing ethical, procedural, and legal challenges [3; 6]. These include the blurring of traditional boundaries of authorship, increasingly complex procedures for verifying primary data, the risk that fabricated sources will proliferate, and the inadequacy of outdated mechanisms for safeguarding academic integrity.

Contemporary research literature describes this changed situation as the era of "postplagiarism". Conceptualised by Sarah Elaine Eaton, a professor at the University of Calgary [2], the term denotes a period in which hybrid writing by humans and digital algorithms becomes an everyday academic norm. In Eaton's account, attempts to draw a clear line between the human author's contribution and the algorithm's output cease to be methodologically meaningful. Mechanistic definitions of plagiarism no longer suffice; instead, academic communities should focus on transparent attribution of the tools used and unequivocal human responsibility for the final outcome [2].

At the same time, leading researchers in educational technology emphasise that a shift in the educational paradigm is inevitable: rather than imposing administrative bans or ignoring innovation, higher education must equip students with well-developed competencies in AI literacy, critical evaluation of algorithmic outputs, and ethical engagement with digital tools.

The rapid acceleration of generative AI in scientific research introduced significant risks to research integrity, data privacy, and output accuracy, including algorithmic biases and fabricated citations. Simultaneously, the uncoordinated proliferation of individual guidelines

across various universities, publishers, and funding bodies created a fragmented policy landscape that was difficult for researchers to navigate. To address this complexity, the European Research Area Forum and the European Commission established the European Living Guidelines (European Commission, 2026) [3], aligned with the EU AI Act, to set common standards for transparency, human accountability, and a shared ethical research culture.

In Ukraine, a major legislative milestone was the adoption of the Law on Academic Integrity, No. 4742-IX [8], which, for the first time, established the dishonest use of AI-generated outputs as a distinct offence under binding legislation. Ukraine is the only European country to have adopted a dedicated law on academic integrity. Implementing these statutory requirements in research organisations and higher education institutions created an urgent need for specialised methodological guidance and regulatory procedures. This need was addressed through a series of policy and methodological frameworks developed by Ukraine's Ministry of Education and Science and Ministry of Digital Transformation [5; 6].

A comparative study of these frameworks is therefore needed to bring together existing experience and develop practical recommendations for their implementation in higher education and research.

2. Main Analysis

Origins and Context of the Policy Documents

The governance of artificial intelligence (AI) use in research and education has evolved in parallel at international and national levels, reflecting rapid changes in algorithms' technological capabilities, from simple language suggestions to complex multimodal systems [1; 3; 12].

The European Living Guidelines (European Commission, 2026) [3] were developed by the European Commission's Directorate-General for Research and Innovation in cooperation with the European Research Area Forum (ERA Forum). Their status as a "living document" provides for regular updates in response to practical implementation needs.

The European Commission's Living guidelines on the responsible use of generative AI in research, developed within the European Research Area through the ERA Forum, have evolved from a basic framework into more detailed practical guidance. The first and second editions established a basic ethical framework for participants in Horizon Europe, the European Union's Framework Programme for Research and Innovation, amid the widespread adoption of ChatGPT and similar models. These documents drew on the European Code of Conduct for Research Integrity (ALLEA) [1] and the ethical principles of trustworthy AI.

The first edition (March 2024) provided a basic conceptual framework, representing the initial response of the research community and the European Commission to the rapid emergence and proliferation of generative AI, including ChatGPT-type models, in late 2022 and throughout 2023. It set out fundamental principles and initial cautions concerning the use of AI in research.

The second edition of the European Commission's document (April 2025) sought to move beyond general principles towards practical implementation tools for researchers, research organisations, and funding bodies.

The need for a third edition (May 2026) [3] arose from the entry into force of the EU Artificial Intelligence Act (Regulation (EU) 2024/1689) [12], the emergence of multimodal models capable of generating code, video, and synthetic biological data, the need to counter hidden prompts in grant applications, greater attention to the environmental footprint of computation, and the need to prevent the stigmatisation of authors who openly disclose their use of AI.

In Ukraine, the Recommendations on the Responsible Introduction and Use of Artificial Intelligence Technologies in Higher Education Institutions [5] were developed in April 2025 by the Ministry of Education and Science and the Ministry of Digital Transformation. The principal impetus was students' unregulated use of chatbots to complete assessed assignments, term papers, and degree projects. The document called for a shift away from blanket bans towards the adoption of the Artificial Intelligence Assessment Scale (AIAS) and institutional university policies [5].
In October 2026, Ukraine issued the Recommendations on the Responsible Use of Artificial Intelligence Systems in Research [6]. Their development was linked to the implementation of the Law on Academic Integrity [8] and the Concept for the Development of Artificial Intelligence in Ukraine. The recommendations define permissible uses of AI at different stages of research, disclosure requirements, and restrictions applicable to researchers, reviewers, journal editorial teams, and research organisations [6].

Methodology and Comparative Matrix

A standardised framework comprising six categories of comparative indicators was developed to analyse the three policy frameworks (Table 1).

Table 1. Comparison of the European Living Guidelines (2026), the Ukrainian Recommendations on the Responsible Use of Artificial Intelligence Systems in Research (2026), and the Ukrainian Recommendations on the Responsible Introduction and Use of Artificial Intelligence Technologies in Higher Education Institutions (2025)

Category	European Guidelines (2026) [3]	Ukrainian recommendations for research (2026) [6]	Ukrainian recommendations for higher education institutions (2025) [5]
1. Jurisdiction and regulatory status	Advisory EU framework (ERA Forum), grounded in the EU AI Act [12] and the ALLEA Code [1].	National framework grounded in the Law on Academic Integrity (No. 4742-IX) [8], the Law on Copyright, and the EU AI Act.	National methodological guide based on the Concept for the Development of AI in Ukraine, the Council of Europe Framework Convention, and the Law on Higher Education.
2. Purpose and scope	Guidance for researchers, organisations, and funding bodies (Horizon Europe) within the European Research Area.	Governance of the full lifecycle of research, development, publication, patenting, and technology transfer.	Modernisation of teaching, learning, assessment, student work, and university management.
3. Categories of use and risks	Proportionate, role-based approach; prohibition of AI use in grant evaluation and peer review.	Three categories: (1) permissible; (2) permitted subject to specified conditions; (3) incompatible with responsible research.	AIAS (five levels) or three departmental policy options; assessment using a red-flags system.

Category	European Guidelines (2026) [3]	Ukrainian recommendations for research (2026) [6]	Ukrainian recommendations for higher education institutions (2025) [5]
4. Authorship and disclosure	AI authorship prohibited; mandatory disclosure; protection of unpublished data.	AI authorship prohibited; disclosure in three forms (GAIDeT declaration [13], Methods section, internal records); rejection of AI detectors.	AI authorship prohibited; attribution in assignments (prompts, modified text, NIA/GIA/AIA icons).
5. Legal and ethical requirements	GDPR compliance, protection of intellectual property rights, computational footprint, and non-discrimination.	Personal data protection, sui generis rights in non-original outputs, data anonymisation, and human oversight.	EULA requirements, protection of staff and student data, and an inclusive learning environment.
6. Institutional governance	Organisation-specific rules; secure institutional environments; training.	Institutional policy architecture, dynamic registers of approved tools, and maturity assessment using AI-PMT.	Institutional policy development, rules in course syllabi, and improved AI literacy.

The following sections examine each of the six categories in detail, using practical examples from research and education.

2.1. Jurisdiction and Regulatory Status

The European Guidelines (2026) [3] are closely linked to the EU Artificial Intelligence Act [12]. For example, when research proposals are submitted under Horizon Europe, funding bodies automatically classify the use of algorithms to assess applicants or review applications as high-risk practices expressly prohibited by European legislation [3; 12].
The Ukrainian Recommendations on the Responsible Use of Artificial Intelligence Systems in Research [6] are grounded in the binding provisions of the Law on Academic Integrity, No. 4742-IX [8]. For example, if a doctoral dissertation is found to contain experimental data fabricated using generative algorithms without appropriate labeling and disclosure, this is classified as dishonest use of AI under the relevant provision of the Law and results in the revocation of the specialized academic council's decision to award the degree.

2.2. Purpose and Scope

The European Guidelines (2026) and the Ukrainian Recommendations on the Responsible Use of Artificial Intelligence Systems in Research (2026) focus specifically on governing AI use in research. The European document establishes a common ethical framework for three principal groups within the European Research Area (ERA): researchers, research organisations, and research funding bodies, including Horizon Europe participants. The Ukrainian recommendations address a broader audience, encompassing specialised academic councils, journal editorial teams, expert committees, and research organisations' technology transfer

units. The European document concentrates on general guidance for the responsible use of generative AI in research to safeguard integrity and protect data. The Ukrainian document covers the entire research lifecycle, from conceptualisation, literature review, data collection, and programming to publication, patenting, technology readiness level (TRL) assessment, and technology transfer. For example, when preparing a patent application for a biotechnological invention, a researcher may use AI to model molecular structures (Category 2, use subject to specified conditions), but must provide a full account of the algorithm and identify the software version in the patent specification, and validate the resulting biochemical properties through in vitro or in vivo laboratory testing. The European Guidelines thus provide a common ethical reference for research and grant activities across Europe. The Ukrainian document offers a broader set of procedures covering basic and applied research, patenting, and the practical commercialisation of research outputs.

Although research forms part of the educational process in Ukrainian universities, the recommendations for the responsible introduction and use of AI technologies in higher education institutions focus primarily on teaching and learning. For example, an instructor preparing a syllabus for a Fundamentals of Software Engineering course explicitly permits students to use code generators such as GitHub Copilot and ChatGPT for code refactoring, while requiring them to include the prompt in code comments and explain the algorithm's logic during an oral defence of their laboratory work.

2.3. Categories of Use and Risks

All three policy documents [3; 5; 6] caution against treating the outputs of AI detection tools, such as Turnitin's AI detector or GPTZero, as conclusive evidence of misconduct. For example, if Turnitin reports a 45% probability of AI-generated text when checking a student's degree project, the Ukrainian recommendations for higher education institutions [5] and the European Guidelines [3] do not permit the department to award a failing grade or reject the work on that basis. The department must arrange a substantive expert review in which the supervisor or a committee examines the original sources, checks the student's prompt logs, and conducts an oral interview on the content of the work. To this end, universities establish authorised bodies and appoint designated academic integrity officers in accordance with Ukraine's Law on Academic Integrity [8].

The most significant procedural difference between the documents lies in their approaches to classifying AI use and assessing the associated risks [3; 5; 6].

The recommendations for the responsible introduction and use of AI technologies in higher education institutions [5] propose the Artificial Intelligence Assessment Scale (AIAS), which enables instructors to differentiate assignments flexibly across five levels of AI involvement:

Level 1: No AI. The task is completed entirely by a human, without digital assistance. Example: an in-class written essay examination without internet access, or a defence of laboratory work.

Level 2: AI-assisted brainstorming. AI is used to identify hypotheses and develop a structure. Example: a student uses a chatbot to explore possible term-paper topics but independently locates all sources and writes the entire text.

Level 3: AI-assisted editing. AI is used to improve style and grammar. Example: a student drafts an essay in English and checks it using Grammarly or ChatGPT, including the original draft as an appendix to the submitted work.

Level 4: AI-generated draft with human evaluation. Individual sections are generated by AI and must undergo critical review and fact-checking. Example: a student generates a literature review using AI, corrects all erroneous references, verifies the facts against actual sources, and labels the generated passages.

Level 5: Full use of AI as a co-author (AI Co-pilot). A complex creative or engineering project is completed in partnership with an algorithm. Example: the development of a mobile application in which AI generates the base code while the student designs the architecture and carries out testing and optimisation.
Students must be informed at the start of a course about the instructor's requirements concerning the permitted use of AI in learning assignments.
To safeguard national security and protect data, both Ukrainian documents [5; 6] introduce a "red flags" criterion. If an AI service provider's software or servers originate from a jurisdiction subject to sanctions or are supplied by a sanctioned person, the use of such tools in education or research is prohibited outright, irrespective of the service's benefits.

2.4. Authorship and Disclosure

All three frameworks [3; 5; 6] establish a fundamental principle: under no circumstances an AI system may be recognised as the author or co-author of a publication or academic assignment. Authorship presupposes the capacity to hold legal rights and duties and to bear moral and legal responsibility, capacities that algorithms lack [1; 3; 6].
To move beyond general statements such as "AI was used in this work" towards precise attribution, Ukrainian researchers and the relevant recommendations [6; 13] propose the Generative AI Delegation Taxonomy (GAIDeT). This framework has gained support from numerous research institutions across different countries. The taxonomy specifies AI involvement across eight main categories and their corresponding microtasks:

1. *Research conceptualisation*: generating research hypotheses and identifying analogies.
2. *Literature review*: conducting bibliographic searches and organising abstracts.
3. *Methodological design*: selecting statistical tests and designing experiments.
4. *Coding automation*: writing and debugging Python or R scripts.
5. *Data management and analysis*: cleaning data and conducting factor analysis.
6. *Writing and editing*: drafting sections, translating, and proofreading.
7. *Ethical analysis and review*: assessing compliance with ethical standards.
8. *Research supervision and oversight*: preparing reviews and assessment checklists.

For example, a scholarly journal requires an author to append the following AI use declaration, based on GAIDeT, to an article: "In preparing this article, the author used ChatGPT (OpenAI, GPT-4o version, September 2026) for the following tasks: Literature review: semantic clustering of 40 article abstracts (microtask L2); Writing and editing: language correction and stylistic revision of the Discussion section (microtask W4). All generated text, analytical conclusions, and bibliographic references were fully verified by the author. The author accepts full responsibility for the final content of the publication."
An interactive tool, the GAIDeT Declaration Generator, has been developed and introduced to simplify this process. It automatically produces a standardised statement based on the microtask checkboxes selected by the user [6; 13].

2.5. Legal and Ethical Requirements

Legal protection of information resources and compliance with ethical standards are important aspects of the comparison between the regulatory frameworks [3; 5; 6; 12].
Under the General Data Protection Regulation (GDPR; Regulation (EU) 2016/679) [11] and Ukraine's Law on Personal Data Protection (No. 2297-VI of 1 June 2010) [10] , entering the personal data of students, teaching staff, respondents, or patients into prompts submitted to publicly accessible AI systems is strictly prohibited [5; 6]. Researchers must use anonymised datasets or isolated institutional models deployed on premises.

Under Ukraine's Law on Copyright and Related Rights [9] and the Recommendations on the Responsible Use of Artificial Intelligence Systems in Research [6], non-original outputs generated by AI without human creative input are not protected by copyright; instead, they fall under a sui generis rights regime. When selecting services, researchers and universities must carefully examine the terms of service or end-user licence agreement (EULA) to ensure that the provider does not require users to relinquish their rights to the datasets and prompts they submit [5].

The European Guidelines [3] address, for the first time, the carbon and computational footprints of generative models, recommending that compact, specialised models should be preferred to very large multimodal models wherever possible. The document also emphasises that researchers must not be stigmatised: open and transparent disclosure of AI use must not become grounds for bias on the part of reviewers or editors [3].

2.6. Institutional Governance

The practical implementation of regulatory recommendations requires flexible institutional infrastructure within research organisations and universities [5; 6; 7]. Developing documents entitled "Policy on the Use of Artificial Intelligence" is becoming standard academic practice in universities and research institutions across many countries. These policies follow national regulatory documents, but academic autonomy allows institutions to adopt different approaches.

Section 8.7 of the Recommendations on the Responsible Use of Artificial Intelligence Systems in Research [6] recommends the AI Policy Maturity Taxonomy (AI-PMT) for institutional self-assessment of the maturity and coherence of internal rules. It emphasises that AI-PMT is a tool for internal organisational development, rather than for certification, ranking, or automatically determining compliance [6].

Implementation of the regulatory frameworks relies on the internal policies of educational and research institutions. The Odessa Regional Academy of In-Service Education adopted its Policy on the Use of Artificial Intelligence in 2025 [7]. Today's rapidly changing information environment puts new demands on higher education institutions' internal regulatory documents. These must remain flexible and undergo regular review and revision in response to changes in international and national legal and regulatory frameworks, analysis of internal academic practices, monitoring findings, and other relevant factors.

The recommendations for the responsible introduction and use of AI technologies in Ukrainian higher education institutions encourage universities to integrate rules on AI use into course syllabi and the educational process as a whole. Higher education institutions implement these recommendations [5] by incorporating explicit requirements directly into course syllabi. For example, a syllabus might state: "In the Research Methodology course, generative AI tools (ChatGPT, Claude) may be used at AIAS Levels 2 to 3 (idea generation and editing) for all assessed assignments. AI use in the final project (AIAS Level 4) is permitted only if the submission includes a GAIDeT declaration and prompt logs. AI use during the final oral examination is prohibited (AIAS Level 1)."

This model helps prevent legal uncertainty and ensures transparency in the assessment of students' knowledge.

3. Conclusions

The comparative analysis indicates that Ukraine is developing a system for governing AI use in research and education that aligns with the European system. Its main aim is to replace ineffective prohibitions with arrangements that permit responsible use of these technologies, based on transparency, ethics, and continued human oversight.

The analysis shows that the provisions of Ukraine's Recommendations on the Responsible Use of Artificial Intelligence Systems in Research and Recommendations on the Responsible Introduction and Use of Artificial Intelligence Technologies in Higher Education Institutions are aligned with the European Living guidelines on the responsible use of generative AI in research.

The documents establish that human responsibility for AI use cannot be relinquished. Generative AI algorithms are treated as tools subject to human direction; ultimate responsibility for the content, fact-checking, research conclusions, and ethical acceptability of the results always rests with human authors.

The outputs of automated AI detectors are recognised as insufficient and probabilistic; substantive expert review and an oral defence of the results are the only legitimate means of identifying a breach of academic integrity.

Effective governance requires institutional policies on AI use, registers of approved tools, the use of the GAIDeT taxonomy for disclosure, and explicit rules in university course syllabi.

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