

ETHICAL GUIDE ON THE USE OF GENERATIVE ARTIFICIAL INTELLIGENCE (GAI) IN SCIENTIFIC RESEARCH AND PUBLICATION ACTIVITIES IN HIGHER EDUCATION INSTITUTIONS

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PURPOSE

The integration of Generative Artificial Intelligence (GAI), which significantly contributes to education, teaching, scientific research, and publication processes, must be guided by ethical principles. Defining these principles and establishing relevant rules is essential to protect scientific integrity and public trust in science. Higher education institutions and researchers bear a societal responsibility to uphold ethical standards and make balanced decisions between scientific utility, technological possibilities, and ethical considerations.

This guide aims to inform institutions about the opportunities and risks of GAI and to encourage precautionary and principled use within academic contexts.

ETHICAL DIMENSIONS OF USING GAI IN RESEARCH AND PUBLICATIONS

When GAI is used for tasks such as hypothesis formulation, methodology design, data analysis, literature reviews, language editing, or translation, researchers must carefully evaluate the outputs. They remain responsible for factual accuracy, identifying biases, ensuring coherence, and assuming full legal and ethical responsibility for the results.

GAI should not be used in stages requiring advanced reasoning, interpretation, or expert judgment. If its use removes the researcher's intellectual contribution, ethical issues are likely to arise.

GAI's outputs must be critically evaluated due to the limitations and biases in its training data. Its potential for hallucination (producing false or misleading information) necessitates validation of its outputs by the researchers.

CORE ETHICAL VALUES IN GAI USAGE

1. Transparency: Researchers must disclose how and where GAI was used in their work.
2. Integrity: Honesty in the use of GAI, including the avoidance of fabrication, plagiarism, or misleading information.
3. Care: All contributors must exhibit ethical sensitivity and responsibility throughout the research process.
4. Fairness and Respect: All stakeholders, including participants, the public, and other researchers, must be treated fairly.
5. Privacy and Confidentiality: The confidentiality of data and the autonomy of data providers must be preserved.
6. Accountability: Researchers are responsible for GAI's outputs, including potential biases and errors.
7. Contributing to the Ethical Climate: Institutions must create environments that foster ethical awareness, including offering training and updated guidelines.

RISKS AND ETHICAL ISSUES ASSOCIATED WITH GAI USAGE

GAI's ability to produce new content (text, visuals, code, etc.) does not imply true understanding. Its reliability depends on the quality and representativeness of its training data. Potential risks include manipulation of models, biased outputs, privacy breaches, and the misuse of sensitive data.

Common ethical issues include:

- Failing to disclose GAI-generated content
- Unauthorized use of others' content
- Improper citation or source fabrication
- Biased or discriminatory outputs
- Use of unverifiable or irreproducible methods
- Violations of privacy or data laws

RECOMMENDATIONS FOR RESPONSIBLE USE

- Understand how GAI systems work and assess their risks before use.
- Use GAI tools ethically to enhance educational and research quality.
- Accept personal responsibility for outputs generated using GAI.
- Avoid entering sensitive personal data unless anonymized.
- Consult official documentation for terms of use and limitations.
- Choose tools aligned with responsible AI principles.
- Engage in training and use resources like the "AI Risk Management Framework."

FREQUENTLY ASKED QUESTIONS

Can GAI be used in scientific studies?

Yes, but with caution. Full reliance on GAI for writing or idea generation is not acceptable. Authors are accountable for citations and originality.

Is it ethical to use GAI for data analysis, translation, or language editing?

Yes, provided that the researcher verifies all outputs and takes full responsibility.

Can GAI be used in surveys or questionnaires?

No. Replacing real participants with AI is unethical.

Can GAI be used for data labeling?

Yes, but its accuracy depends on the quality of the training data.

Should GAI use be disclosed in ethics board applications?

Yes. Details of how and where GAI is used should be included in the protocol.

Are there specific laws on GAI in Türkiye?

Not yet. However, relevant existing laws include:

- Personal Data Protection Law (No. 6698)
- Higher Education Law (No. 2547)
- Intellectual Property Law (No. 5846)
- Graduate Education Regulations
- Scientific Research and Publication Ethics Guidelines of Higher Education Institutions