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STUDENTS AND THE UNETHICAL USE OF LLMS IN THE EDUCATIONAL PROCESS: PEDAGOGICAL PREVENTION STRATEGIES

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Abstract: This article analyzes pedagogical strategies aimed at preventing students from misusing Large Language Models (LLMs) in ways that violate the principles of academic integrity. In recent years, the widespread adoption of artificial intelligence–based tools has brought new opportunities to the educational process, while also creating various risks and challenges. In particular, students increasingly tend to use LLM services as a direct solution instead of developing skills such as independent creative thinking, academic writing, and conducting research. This has led to the emergence of new forms of plagiarism and a decline in the quality of education (Chan, 2023; Prokhorova et al., 2024; Lund et al., 2025). Therefore, educators are required to adopt modern, technology-oriented pedagogical approaches.

The article identifies the main causes of illegal or unethical use of LLMs, including excessive academic workload, insufficient time-management skills, lack of motivation caused by monotonous assignments, weak assessment mechanisms and the absence of a digital responsibility culture among students. Alongside this, the study highlights effective pedagogical strategies for addressing the issue: regular promotion of academic integrity, designing creative, contextual, and personalized assignments, organizing instructional sessions on ethical and proper use of LLMs, implementing multi-stage assessment practices (draft submissions, oral defense, reflection), encouraging collaborative learning, and fostering an atmosphere of pedagogical trust and openness rather than relying solely on AI-detection tools (Ardito, 2025; Lund et al., 2025).

Key words: Large Language Models, artificial intelligence, academic integrity, plagiarism, digital literacy, critical thinking, multistage assessment, student motivation, information technology culture.

Introduction

In today's digital era, artificial intelligence (AI) technologies—especially Large Language Models (LLMs)—are becoming an integral part of the educational process. LLMs such as ChatGPT, Gemini, DeepSeek or Grok provide learners with substantial convenience, enabling them to generate texts, perform analyses, search for information and support research activity. However, as these technologies expand in capability the likelihood of their incorrect, unethical or unlawful use in education also increases (Chan, 2023; Prokhorova et al., 2024). In particular, students sometimes use LLMs as a direct source of ready-made answers instead of engaging in independent analysis, research, and creative work. This violates academic integrity, contributes to new forms of plagiarism and negatively affects educational quality (Lund et al., 2025).

One of the most important tasks of modern education systems is to develop a culture of conscious, responsible and honest use of LLM technologies. Banning or strictly limiting AI cannot fully solve the problem. Instead, students must be guided toward correct, meaningful and creative use of these tools. From this perspective, pedagogical strategies must not only

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strengthen control mechanisms but also develop competencies such as independent thinking, critical analysis, research skills, and digital literacy (Najmetdinova, 2025; Kozimov, 2024).

The relevance of the topic lies in the dual impact of LLMs in contemporary education. On the one hand, they can significantly increase learning efficiency, on the other hand, when misused, they can undermine the goals and outcomes of education. Therefore, developing well-designed, scientifically grounded, and practice-oriented pedagogical strategies to prevent students' unethical use of LLMs is a key task for modern education (Mazaheriyan & Nourbakhsh, 2025; Lund et al., 2025). This article systematically analyzes the factors that cause student misuse of LLMs, existing problems, and effective pedagogical approaches to address them. The study has important scientific and practical significance for shaping AI-use culture in education and ensuring academic integrity.

LLMs are becoming an indispensable component of the modern educational process. Tools such as ChatGPT, Gemini, and DeepSeek allow students to generate texts, analyze information and conduct research. However, their incorrect or unlawful use creates significant pedagogical problems. In recent years, AI and LLMs have driven revolutionary changes in education. Tools like ChatGPT, Bard, and Gemini substantially simplify text production, analytical work, research tasks, and even coding for students. These technologies not only accelerate knowledge acquisition but also transform educational quality and pedagogical processes.

At the same time, improper use produces new pedagogical and ethical problems. Students increasingly use LLMs for plagiarism, obtaining ready-made answers, or replacing independent creative thinking. This contradicts academic integrity principles and reduces students' critical thinking, research abilities, and problem-solving skills (Chan, 2023; Lund et al., 2025). Moreover, it negatively affects educational quality because learners begin to rely on AI-generated solutions instead of developing confidence in their own knowledge.

The reasons for misuse are complex and multifaceted: high academic workload, time-management difficulties, lack of motivation, weak assessment and monitoring systems, and low technology-use culture. Therefore, simple restriction or prohibition of LLMs is insufficient. Students must be taught responsible, ethical, and effective use; academic integrity and digital literacy must be strengthened (Najmetdinova, 2025; Kozimov, 2024).

Purpose of the article is to analyze the causes and pedagogical consequences of students' unethical use of LLMs and to identify and propose effective pedagogical strategies for prevention. The study considers approaches such as responsible LLM use, designing creative and personalized assignments, multistage assessment systems, collaborative learning, and building a trust-based educational environment. The article aims to regulate LLM use in modern education, develop students' independent thinking and critical approach, and strengthen academic integrity through pedagogical recommendations (Lund et al., 2025; Ardito, 2025).

Factors Contributing to Students' Unethical Use of LLMs

As LLMs are increasingly integrated into education, the risk of incorrect or unethical use grows. Cases of plagiarism, copying ready-made answers, and substituting LLM output for independent analysis are becoming more frequent. The main causes can be explained as follows.

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First, excessive academic workload pushes students toward quick results. When learners must complete many tasks in a short time, they may use AI tools as a "fast and easy solution," which harms the development of independent thinking, creativity, and analytical skills (Mazaheriyan & Nourbakhsh, 2025).

Second, the low motivational value of assignments is an important factor. Standard, repetitive or uninteresting tasks reduce engagement. As a result, students prefer to obtain a finished answer via an LLM rather than apply creative thinking (Lund et al., 2025).

Third, weak assessment and control systems contribute to misuse. If instructors do not monitor the process step by step and focus only on the final product, students perceive low risk and may commit plagiarism. In many cases, academic integrity is difficult to ensure by checking only the final submission (Ardito, 2025; Chan, 2023).

Fourth, insufficient technology-use culture leads to misunderstanding of LLMs. Many students do not know how AI tools work, their limitations and the boundaries of acceptable use. As a result, AI use can become irresponsible and unethical (Najmetdinova, 2025).

Fifth, low levels of critical thinking and information-evaluation skills increase the risk. Students may accept AI outputs uncritically or treat them as error-free, which harms academic quality and the research process (Lund et al., 2025).

2. Pedagogical Strategies Aimed at Strengthening Academic Integrity

One of the most effective approaches to prevent unethical LLM use is building a culture of academic integrity. The following strategies play a key role:

- Educational focus on academic integrity. Students should be regularly taught the principles of academic discipline, plagiarism, proper citation and responsible LLM use. This encourages accountability and develops independent thinking (Chan, 2023; Lund et al., 2025).

- Development of digital literacy. Proper LLM use depends on technology literacy. Students must understand how AI algorithms work, their strengths and limits, and how to avoid misinformation and errors (Najmetdinova, 2025).

- Implementation of a multistage assessment system. Instead of assessing only the final product, instructors should monitor the learning process step by step—for example, drafts, oral defenses, reflective commentary and instructor feedback. This reduces opportunities to submit fully AI-generated answers and requires students to explain their reasoning (Ardito, 2025; Lund et al., 2025).

- Personalized and creative assignments. Rather than standardized exercises, tasks should require personal experience, context and creativity—e.g., real-problem analysis, project work or individual research. This limits improper LLM use (Mazaheriyan & Nourbakhsh, 2025).

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- Collaboration and a trust-based learning environment. Group work, seminars and discussions help create an open, trustful environment. This fosters ethical AI use and reduces overreliance on AI-detector tools (Ardito, 2025).

3. Teaching Responsible Use of LLMs

Instead of banning or severely restricting LLMs, the most effective strategy is teaching students responsible and mindful use. This includes:

- explaining the strengths and weaknesses of AI tools;
- encouraging students to form independent viewpoints and analytical approaches;
- establishing rules and ethical norms for LLM use;
- demonstrating how LLMs can serve as supplementary support for independent and creative work (Lund et al., 2025; Najmetdinova, 2025).

Conclusion

Today, AI and LLM integration into education provides opportunities for creative, fast and effective learning. At the same time, their unethical or unlawful use creates serious pedagogical problems. Students who rely on ready-made LLM outputs instead of independent thinking, research and writing contribute to new forms of plagiarism and a decline in educational quality (Chan, 2023; Prokhorova et al., 2024; Lund et al., 2025).

Therefore, preventing misuse is one of the urgent tasks of modern education. Research suggests that restriction or prohibition of LLMs is not an effective solution. Instead, teaching responsible and mindful AI use, promoting academic integrity and developing digital literacy are key strategies (Najmetdinova, 2025; Kozimov, 2024).

A pedagogical approach should include designing personalized, creative and contextual tasks; implementing multistage assessment; strengthening oral defense and reflection; promoting collaborative learning; and creating an open, trust-based learning environment. This supports students' academic responsibility. It is also important to build students' understanding of LLM capabilities and limitations, ethical AI practices and the development of independent analysis and research skills (Ardito, 2025; Lund et al., 2025).

This not only ensures academic quality and integrity but also strengthens critical thinking, creativity, problem-solving skills and digital culture competencies.

Thus, preventing unethical LLM use requires comprehensive pedagogical strategies aimed not only at control and restriction but also at cultivating a culture of conscious and responsible AI use. This approach enables education to benefit from AI while strengthening integrity and improving learning outcomes.

Factors contributing to misuse include high workload, time-management difficulties, low assignment motivation, weak monitoring and insufficient AI-related competencies, which requires instructors to adopt new approaches and redesign learning with innovative technologies in mind (Mazaheriyan & Nourbakhsh, 2025; Najmetdinova, 2025).

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Effective prevention strategies include academic integrity education, teaching proper AI use, designing creative and personalized assignments, multistage assessment, stronger oral defense, and trust-based educational environments. Such approaches reduce misuse and help students use AI as a legitimate learning assistant (Ardito, 2025; Lund et al., 2025).

In other words, not prohibition, but competent management of LLM use, evidence-based pedagogical strategies, development of digital literacy and strengthening academic integrity are the most important tasks of modern education. This improves educational quality, strengthens student competencies and prepares graduates for successful participation in the labor market (Kozimov, 2024; Najmetdinova, 2025; Hodjayevich & Shakarov, 2023).

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