УДК 004.8:17-047.44 + 37.091.33

SUN WEI, O.O. DOLSKA

PHILOSOPHICAL REFLECTION ON THE APPLICATION OF GENERATIVE ARTIFICIAL INTELLIGENCE IN EDUCATION

The study finds that the application of generative AI in the field of education has triggered three major philosophical dilemmas: first, the ontological crisis, where GenAI has jumped from a tool to a "cognitive agent", reconstructing the essence of educational existence; second, the epistemological rupture, where the hegemony of algorithmic knowledge suppresses critical thinking; third, the ethical and political conflicts, where the digital divide exacerbates educational inequality. Based on this, the study proposes a human-centered governance framework: at the philosophical level, ensuring that AI serves the all-round development of human beings; at the practical level, constructing a national ethical review mechanism and a governance system for cultivating teachers' "technical-humanistic" dual capabilities. The research confirms that only by taming instrumental rationality with value rationality can the dialectical transcendence of GenAI's educational application be realized.

Key words: Generative AI; Educational application; Philosophical reflection; Ethical dilemma; Path reconstruction.

СУНЬ ВЕЙ, О.О. ДОЛЬСЬКА

ФІЛОСОФСЬКІ РОЗДУМИ ПРО ЗАСТОСУВАННЯ ГЕНЕРАТИВНОГО ШТУЧНОГО ІНТЕЛЕКТУ В ОСВІТІ

Дослідження показує, що застосування генеративного штучного інтелекту в галузі освіти викликало три основні філософські дилеми: по-перше, онтологічну кризу, коли GenAI перетворився з інструменту на «когнітивний агент», реконструюючи сутність освітнього існування; по-друге, епістемологічний розрив, коли гегемонія алгоритмічних знань пригнічує критичне мислення; по-третє, етичні та політичні конфлікти, коли цифровий розрив посилює освітню нерівність. Виходячи з цього, дослідження пропонує систему управління, орієнтовану на людину: на філософському рівні – забезпечення того, щоб штучний інтелект служив всебічному розвитку людини; на практичному рівні – створення національного механізму етичного огляду та системи управління для розвитку «техніко-гуманістичних» подвійних здібностей вчителів. Дослідження підтверджує, що лише шляхом поєднання інструментальної раціональності з ціннісною раціональністю можна досягти діалектичної трансцендентності освітнього застосування GenAI.

Ключові слова: генеративний ШІ; освітнє застосування; філософська рефлексія; етична дилема; реконструкція шляху.

Problem statement. Amidst the global surge of digitization, generative artificial intelligence (GenAI) is reshaping the landscape and fabric of education at an unprecedented pace. From the automated generation of personalized learning plans to the intelligent creation of teaching content, from real-time interactive Q&A to dynamic assessment of learning outcomes, GenAI is breaking through the boundaries of traditional educational technology, emerging as a core driving force for educational transformation. However, behind this breakneck technological advancement lies a profound paradox: as students habitually rely on AI-generated answers, the sharp edge of independent thinking is quietly being blunted; as teachers are reduced to operators of AI tools, the humanistic warmth of education is gradually cooling; as algorithmic logic dominates knowledge transmission, the scales of educational equity are tipping out of balance due to the digital divide. Education, as the core domain shaping human cognition, emotion, and values, is fundamentally about cultivating whole persons, not mere appendages of technology. Currently, the application of GenAI in education has surpassed the realm of instrumental rationality, touching upon fundamental questions of educational ontology, epistemology, and ethics.

In an era where technological iteration far outpaces the renewal of educational philosophy, a lack of critical examination of its philosophical underpinnings may lead education astray from its fundamental purpose of nurturing human beings, lost in the myth of efficiency-first. Therefore, delving deeply into the complex interplay between GenAI and education is not only a response to the epochal questions posed by the technological revolution to education, but also an essential choice for safeguarding the essence of education and reconstructing a healthy educational ecosystem. It holds indispensable practical significance for achieving a balance between technological empowerment and humanistic care.

Analysis of recent research and publications. The rapid development of Generative AI has exerted profound impacts on philosophy, ethics, education, and other fields. This study is closely linked to prior relevant research. Its theoretical foundation stems from the critical theory of technology and phenomenology of education, while also incorporating insights from the scholarly tradition established by numerous experts. Kars, M. E. believes that generative artificial intelligence brings both

Вісник Національного технічного університету «ХПІ». Серія:
Актуальні проблеми розвитку українського суспільства, № 2, 2025

69

opportunities and challenges to higher education [1]. Tools like ChatGPT are being adopted by scholars for teaching and research, yet they also trigger concerns regarding ethics, data privacy, bias, and intellectual property [2]. In a study on teacher and student perceptions, Łodzikowski, K. et al. argue that generative AI has the potential to replace or assist human educators, requiring serious consideration from the educational community regarding its implications [3]. Its application in higher education has also sparked debates on effects on student creativity [4]. Wang and Su et al. explored how generative AI impacts students' learning effectiveness in terms of self-efficacy, fairness and ethics, creativity, and trust [5]. Yu, H., & Guo, Y. argue that attention must be paid to how AI-generated cognitive biases affect religious education [6]. Ethical issues in AI constitute complex and critical topics [7; 8]. Hu et al. contend that trustworthy artificial intelligence must adhere to three guiding principles: legality, ethics, and robustness, encompassing respect for human oversight, prevention of harm, and fairness [18]. Shamsuddinova, S., Heryani, P., & Naval, M. A. argue that responsible innovation is the key to addressing AI's ethical challenges [13].

Philosophically, AI profoundly impacts human cognition and social structures. Cappelli, M. A. et al. examine the ethical issues of artificial intelligence in education from the perspective of ancient Greek philosophy, highlighting critical concerns such as data privacy and algorithmic bias [16]. Management scholars, using paradox theory, analyze Generative AI's potential impacts on education, suggesting it could lead to either "doom" or reform. The development of AI has also prompted reflections on "artificial education," advocating for an ethical framework to regulate AI use in education [18]. These research findings provide the conceptual bedrock for this study's exploration of the philosophical dilemmas and governance pathways in the application of generative artificial intelligence (GenAI) in education. Grounded in this theoretical framework and while integrating empirical investigation with philosophical-critical analysis, this work conducts an in-depth interrogation of the philosophical implications of GenAI's deployment in educational contexts.

The purpose of the paper is to reveal the educational ontological crisis triggered by Generative AI (GenAI)'s paradigm shift from an "auxiliary tool" to a "cognitive agent" encompassing teacher role alienation, student critical thinking deterioration, and emotional connection rupture through philosophical scrutiny and empirical investigation. It seeks to resolve the fundamental conflict between instrumental rationality and humanistic values by constructing a human-centered governance framework and innovating pedagogies.

Main body. Innovation: The most fundamental innovation of this paper is its insight into the dangerous transformation of AI in education from a "helper" to a "protagonist" when nearly half of students are lazy to think, teacher-student interaction plummets, and teaching roles are reconstructed, this paper reveals from a philosophical perspective how technology distorts the essence of education, and offers a symptomatic prescription: instead of abandoning AI, we should follow the idea of "people-oriented" and let technology return to its duty of serving human nature.

1. Research Background and Problem Formulation. With the rapid development of artificial intelligence technology, Generative Artificial Intelligence (Generative AI) is penetrating into all aspects of education at an unprecedented pace [1]. From assisting in the generation of teaching content and designing personalized learning experiences to intelligent assessment and feedback, Generative AI has demonstrated enormous application potential [2; 3]. However, along with the widespread application of the technology, a series of ethical, cognitive, and social issues have become increasingly prominent, triggering reflections and scrutiny from the education sector, philosophical circles, and even the entire society on the educational application of Generative AI [4; 5].

Traditional educational concepts emphasize the dominant role of human teachers, focusing on knowledge imparting, thinking cultivation, and value shaping. However, the intervention of Generative AI is reconstructing the power relations and knowledge production models in education. Does AI-generated content have authority? Will excessive reliance on AI weaken students' independent thinking abilities? How will algorithmic biases affect educational equity? [6] These questions point to the essence and purpose of education, requiring us to conduct in-depth discussions from a philosophical perspective.

Technically, while Generative AI is evolving rapidly, its applied research in education remains relatively lagging [7]. Existing studies mostly focus on exploring technical feasibility and application scenarios, lacking profound reflections on the philosophical foundations and ethical boundaries behind the educational application of Generative AI. Especially in developing countries, gaps in technological infrastructure and digital literacy may further exacerbate educational inequality [8, P. 156]. Therefore, it is necessary to conduct a comprehensive philosophical examination of Generative AI's application in education, providing value guidance for technological development and theoretical support for policy-making.

This study aims to deeply explore the essential characteristics, ethical dilemmas, and possible solutions of Generative AI in educational applications from a philosophical perspective, so as to construct a theoretical framework and practical guidance for building a responsible and sustainable AI educational ecosystem.

2. The Essential Characteristics of Generative AI in Education

Compared with traditional educational technologies, Generative AI demonstrates significant differences in the following aspects:

Proactive Content Generation. Traditional educational technologies mainly provide auxiliary functions such as information retrieval and resource management, while Generative AI can directly generate various types of educational content, including text, images, and audio [9]. This proactiveness transforms the way knowledge is produced, shifting teachers' roles from knowledge transmitters to content organizers and guides.

Depth of Personalized Learning. Based on big data analysis and machine learning algorithms, Generative AI can deliver highly personalized learning experiences

70

Вісник Національного технічного університету «ХПІ». Серія:
Актуальні проблеми розвитку українського суспільства, № 2, 2025

tailored to students' study habits, knowledge levels, and interest preferences [2]. This personalization is not only reflected in content recommendation but also in the customization of learning pace, difficulty, and feedback methods, thus maximizing students' learning potential.

Intelligent Interaction Modes. Generative AI can engage in intelligent dialogues with students through natural language processing technologies, answering questions, providing guidance, and offering assessment feedback [10]. Such intelligent interactions can simulate human teachers' instructional behaviors, providing timely and effective support-especially in large-scale online education, where it can alleviate the shortage of teaching staff.

Emergence of Knowledge Generation. Generative AI does not merely replicate or transmit existing knowledge; instead, it discovers new patterns and laws by learning from massive data, thereby generating novel knowledge [6]. This emergent property brings infinite possibilities for educational innovation, but it also challenges the authority and reliability of knowledge.

These essential characteristics indicate that Generative AI is not merely a tool, but an educational partner with autonomy and intelligence. It is profoundly transforming the form, content, and process of education, challenging traditional educational concepts and models.

3. The Current Status of Generative Artificial Intelligence Applications in Education

To gain an in-depth understanding of the issues in the application of Generative Artificial Intelligence (Generative AI) in education, this study conducted a survey among teachers and students.

(1) Survey of College Students

To explore the current status of college students' learning cognition in the Generative AI environment, a questionnaire survey was carried out. The author investigated 375 college students, including 53 male students (14.1 %) and 322 female students (85.9 %). In terms of grade distribution: freshmen accounted for 19.5 %, sophomores 30.1 %, juniors 36.0 %, and seniors or above 14.4 %. Regarding the frequency of using Generative AI tools: 97.6 % of students had experience using AI tools to complete learning tasks. 69.9 % frequently used tools like

ChatGPT, DEEPSEEK, and Doubao for academic tasks. 65.6 % believed that AI tools enabled them to complete tasks more efficiently. 68.5 % proactively used AI tools to seek problem-solving approaches in daily life. 22.1 % showed tool dependence. 47.2 % felt that AI tools had changed their learning habits. 56.5 % noted that AI had altered their learning pace. 48 % typically accepted AI-provided answers directly without verifying or questioning information sources.

The Omnidirectional Impact of AI on Learning. Abilities In the following table, the proportion of "negative impacts" in all five questions exceeds that of "no impact," with the highest negative value appearing in the competence concern item (49.8 %) and the lowest in the viewpoint interference item (40.8 %). This indicates that students' anxiety about long-term capabilities even surpasses their perception of immediate interference, reflecting anticipatory anxiety.

Question 1: Willingness to Think Independently.
Negative impact: 48.6 %; Neutral: 39.2 %.
Question 2: Deep Thinking Ability.
Negative impact: 40.6 %; Neutral: 46.4 %.
Question 3: Depth of Writing Logic.
Negative impact: 37.6 %; Neutral: 45.1 %.

The data show that the more abstract the thinking ability, the stronger the perceived impairment-higher-order thinking is perceived as more severely affected than specific skills (e.g., writing). The inhibitory effect of AI on higher-order thinking exceeds its impact on concrete skills. The evidence chain indicates that AI use first weakens subjective initiative (highest negative rate in Question 1), then gradually erodes specific abilities. Students' anxiety about long-term capabilities far exceeds their perception of current practical issues. Notably, approximately 40 % of students remained undecided on all five questions, indicating that nearly half of them both acknowledge tool dependence and are reluctant to admit ability degradation. They are in a state of unconscious ability degradation, passively accepting the knowledge frameworks output by AI. This is more concerning than direct negative impacts, as the wavering group may lean toward either direction as AI becomes more pervasive.

Table 1. Negative Impacts of AI on Learning Abilities

NO.	Item	Highly Consistent (%)	Consistent (%)	Neutral (%)	Incon-sistent (%)	Highly Inconsi-stent (%)
1	Since I started using AI frequently, my willingness to actively think about complex problems has diminished.	13.1	35.5	39.2	10.9	1.3
2	After long-term use of AI tools, I clearly feel that it is difficult to complete in-depth thinking independently without tool assistance.	13.1	27.5	46.4	10.7	2.4
3	When writing papers or reports, AI tools have had a negative impact on my writing logic and the depth of argumentation.	13.3	24.3	45.1	14.4	2.9
4	The opinions and conclusions provided by AI tools have interfered with the judgments I originally made through independent thinking.	12.0	28.8	47.5	9.9	1.9
5	I am concerned that long-term reliance on AI tools will weaken my ability to think independently and solve problems.	14.9	34.9	40.8	7.5	1.9

The Negative Effects of AI on Team Collaboration. As shown in Table 2, the author's analysis of the seven survey items reveals that the "Neutral" option for all items exceeded 44 %, indicating significant disagreement. Notably, the proportion of "Highly Inconsistent" was surprisingly low (1.6 %-2.7 %), meaning almost no one completely denied these negative impacts. The data reveal three tiers of issues:

Surface-level behavioral changes (e.g., reduced creative exploration).

Mid-level weakening of team interaction (e.g., insufficient discussion).

Deep-level cognitive degradation (e.g., loss of critical thinking).

The most striking finding is Item 4-46.4 % believed AI has replaced peer support, which is more alarming than "free-riding" (Item 5, 45.1 %), indicating AI is alienating interpersonal relationships. A key contradiction emerges: while negative responses (Inconsistent + Highly Inconsistent) accounted for only 10 %-17 %, positive responses (Highly Consistent + Consistent) ranged from 35 %-42 %. This suggests most perceive issues but do not yet recognize their severity, existing in a critical state between quantitative and qualitative change.

The high proportion of neutrals (44.3 %-47.7 %) exposes a lack of clear stance, reflecting immature integration of teaching methods and AI tools. Four items had over 40 % negative evaluations (creativity/ confidence/free-riding/thinking rigidity), indicating AI is shifting from an "auxiliary tool" to a "decision-making entity." Traditional collaboration relies on interpersonal interaction (36.5 % agreed it has weakened), while AI intervention is reshaping team dynamic structures.

Table 2. Negative Effects of AI on Team Collaboration

NO.	Item	Highly Consistent (%)	Consistent (%)	Neutral (%)	Inconsistent (%)	Highly Inconsistent (%)
1	When completing projects in group collaboration, the ready-made solutions provided by AI have reduced our joint exploration of unique creativity.	12.8	28.8	47.7	8.3	2.4
2	Due to reliance on AI tools for data collection, discussions among group members on data analysis have become less thorough.	12.3	28.5	46.1	10.9	2.1
3	The answers from AI tools have made group members lack confidence in their own thinking abilities, affecting their active participation in collaborative learning.	12.0	28.5	45.9	11.5	2.1
4	In collaborative learning, group members overly depend on AI tools, ignoring peer support among team members.	11.7	24.8	46.4	14.4	2.7
5	During group collaboration, AI tools allow some members to slack off, reducing their actual contribution to team tasks.	13.6	26.9	45.1	12.3	2.1
6	Information provided by AI tools causes group members to form fixed mindsets prematurely in collaborative learning, hindering multi-angle problem-solving.	12.3	29.1	44.3	12.0	2.4
7	Excessive trust in AI-generated content during group work leads to a lack of questioning and critical thinking among members.	11.7	27.5	46.1	13.1	1.6

Data indicate that Generative AI currently amplifies the contradiction between efficiency and quality in group collaboration. While it accelerates task completion (instrumental value), it significantly compresses core learning processes such as creative incubation, critical thinking, and interpersonal integration (educational value). To address the issues posed by AI tools in collaborative learning, solutions can be approached from three dimensions: usage norms, pedagogical guidance, and task design. By standardizing application scenarios, enhancing students' critical thinking, and reshaping task logic, we can balance the instrumental value of AI tools with the essence of collaborative learning-enabling technology to truly serve capacity development.

(2) Survey of Teachers

To gain an in-depth understanding of teachers' attitudes and behaviors toward the educational application of Generative AI, this questionnaire survey was conducted. The author investigated 260 teachers, with the following distribution by teaching experience:

Newly recruited teachers: 3.8 %;

Less than 5 years: 18.5 %;

6-10 years: 9.6 %;

11-20 years: 15.4 %;

Over 20 years: 52.7 %.

Key findings include: 52.3 % of teachers believe Generative AI has transformed teaching roles, while 31.5 % remained neutral. 63.8 % agreed that AI has

72

Вісник Національного технічного університету «ХПІ». Серія: Актуальні проблеми розвитку українського суспільства, № 2, 2025

changed students' learning styles, with 28.5 % neutral. 49.6 % felt AI weakens students' thinking abilities, versus 39.6 % neutral. 62.3 % predicted AI will reshape future educational models, with 31.5 % neutral. 51.2 % rely on AI to provide personalized student advice.

Table 3. Teachers' Attitudes and Behaviors Toward AI

NO.	Item	Highly Consistent (%)	Consistent (%)	Neutral (%)	Incon-sistent (%)	Highly Inconsi-stent (%)
1	Do you think Generative AI will transform future educational models?	13.1	49.2	31.5	4.2	1.9
2	Do you believe using Generative AI will weaken students' thinking abilities?	10.8	38.8	39.6	9.6	1.2
3	When using Generative AI, do you find the operation too complex to apply in class?	10.0	38.1	36.9	14.2	0.8
4	Do you rely on using Generative AI in teaching to provide personalized and targeted advice to students?	10.0	41.2	37.7	9.6	1.5
5	Do you depend on Generative AI to design innovative teaching activities (e.g., diversified task-driven approaches, richer context creation) in instruction?	11.5	42.7	33.8	10.4	1.5
6	Does using Generative AI in teaching impose stress on your work?	8.5	30.0	39.2	21.2	1.2
7	Do you think Generative AI might generate false or biased content that misleads teaching?	11.2	35.4	43.1	9.2	1.2

The data in Table 3 show obvious polarization. On the one hand, teachers highly acknowledge that AI will transform education (62.3 % believe Generative AI will change future educational models), while on the other hand, they worry about the weakening of students' thinking abilities (49.6 % express such concerns). Only 48.1 % of teachers find operation complex, indicating technical barriers are not the main obstacle. Dependence data reveal nearly half of teachers (combined 52.7 %-54.2 % in Questions 4 and 5) already rely on AI in core teaching links-higher than expected. Surprisingly, regarding work pressure, only 38.5 % feel stressed, while 61.6 % feel relieved, confirming AI does enhance efficiency. Notably, the dependence on "personalized advice" (51.2 %) in Question 4 exceeds that on "innovative teaching activities" (54.2 %), showing teachers prefer using AI for standardized tasks over creative design. The data reveal teachers are in a "cognitive tearing period" of technological acceptance-actively embracing educational revolution (62.3 %) while alert to ability degradation and content risks (over 46 %). This term describes the cognitive fragmentation and struggle when individuals/groups experience conflicts between old and new cognitions or information shocks-precisely the stage teachers are entering amid AI-driven cognitive challenges.

4. The Philosophical Dilemmas of Generative AI in Educational Fields

Despite the promising prospects of Generative AI in education, its application is accompanied by profound philosophical dilemmas, primarily manifested in the following aspects:

Authority and Authenticity of Knowledge. Content generated by Generative AI is not always accurate, potentially containing factual errors, logical flaws, or even biases [5, P. 140]. Excessive reliance on AI-generated content may mislead students' understanding of knowledge and even impair their cognitive abilities. Moreover, copyright issues of AI-generated content have become increasingly prominent, triggering concerns about academic integrity [11].

Autonomous Learning vs. Cognitive Dependence. Personalized learning is a key advantage of Generative AI, but overreliance on AI-customized learning paths may weaken students' autonomous learning abilities and critical thinking [12, P. 11]. Stuck in a state of passive knowledge reception for long, students may lose the motivation to explore, question, and reflect-becoming "cognitive slaves" to AI.

Equity and Bias. Algorithmic bias is a universal challenge in AI technology, including education [6]. If training data contain discriminatory information against specific groups (e.g., women, ethnic minorities), AI may generate biased content, exacerbating educational inequity. Additionally, the digital divide creates disparities in accessing AI educational resources, further widening educational gaps [8, P. 158].

Teacher-Student Relationship and Emotional Connection. Traditional education involves not only knowledge transmission but also emotional exchange and value shaping between teachers and students [13]. If AI replaces part or all of teachers' roles, it may weaken emotional bonds, affecting students' mental health and social adaptability. Furthermore, teachers' professional autonomy and creativity may be constrained, reducing them to AI "operators".

Educational Purpose and Human Development. The fundamental goal of education is to promote all-around

human development, cultivating socially responsible citizens with independent thinking and innovative spirit [14, P. 780]. However, excessive pursuit of AI's efficiency and convenience may overlook the cultivation of students' moral ethics, aesthetic taste, and social responsibility-distorting the purpose of education.

5. Path Reconstruction at the Levels of Philosophical Principles and Practical Countermeasures

To address the philosophical dilemmas triggered by Generative AI in education, we need to reconstruct pathways at both the philosophical principles and practical countermeasures levels. This aims to ensure that AI technology can truly serve educational purposes and promote all-around human development.

(1) Path Reconstruction at the Level of Philosophical Principles

People-Oriented Principle. Uphold a student-centered educational philosophy, emphasizing students' subjectivity and initiative. AI technology should serve as an auxiliary tool to support students' learning and development, rather than replacing their independent thinking and exploration [4].

Equity Promotion. Prioritize educational equity, eliminate algorithmic bias and the digital divide, and ensure all students equally access AI-driven educational resources and opportunities [8].

Teacher Respect. Respect teachers' professional knowledge and experience, leveraging their critical role in instructional design, content selection, and value guidance. AI technology should empower teachers to enhance teaching efficiency and quality, not replace their roles [8].

Value Orientation. Highlight the value-driven nature of education, focusing on cultivating students' moral ethics, aesthetic taste, and social responsibility. AI should not merely focus on knowledge transmission but also prioritize character shaping and value guidance.

Prudent Application. Maintain a cautious attitude toward AI application in education, fully assess potential risks and negative impacts, and adopt effective measures for prevention and control [5, P. 140].

(2) Path Reconstruction at the Level of Practical Countermeasures

Establish AI Ethical Review Mechanisms. Before introducing AI technology into education, strict ethical reviews must be conducted to assess potential ethical risks and formulate corresponding preventive measures [15; 16]. Reviews should cover algorithmic fairness, data security, privacy protection, and impacts on teacher-student relationships.

Strengthen Teacher Training. Enhance teachers' digital literacy and AI ethical awareness to enable effective use of AI for instructional support and guide students in proper AI tool usage [17; 18]. Training should include AI fundamentals, application methods, ethical issues, and critical thinking cultivation.

Develop High-Quality Educational Resources. Governments, universities, and enterprises should collaborate to develop high-quality, unbiased AI educational resources, ensuring equitable access for all students. Resource development must prioritize content accuracy, authority, and ethical validity.

Innovate Teaching Models. Explore new teaching models by integrating AI technology with traditional pedagogies to leverage their respective advantages. For example, AI can be used for personalized «tutoring» while encouraging group discussions and collaborative learning to foster critical thinking and communication skills.

Improve Laws and Regulations. Formulate comprehensive laws and regulations to standardize AI applications in education and protect student rights. For instance, clarify copyright ownership of AI-generated content, define data usage scopes and responsible entities, and prevent AI abuse.

Conclusions. Empirical investigation and philosophical critique in this study reveal that generative artificial intelligence (GenAI) triggers an ontological crisis, epistemological rupture, and ethico-political conflicts within education. These findings substantiate the profound tension between instrumental rationality and humanistic values in technological applications. While GenAI enhances educational efficiency and enables personalization, it simultaneously weakens students' autonomous thinking, distorts teachers' professional roles, and exacerbates educational inequity. The core pathology lies in technological transgression and axiological disorder.

To address these challenges, we propose the following solutions: Philosophical Foundation: Establish human-centered values as the ethical bedrock, positioning the holistic development of human beings as GenAI's ultimate educational purpose. Maintain technology's status strictly as an assistive tool rather than a cognitive agent. Regulatory Framework: Create a national-level AI ethics review framework for education. Implement lifecycle oversight of algorithmic fairness, data security, and content authenticity to prevent bias propagation and disinformation infiltration. Professional Development: Cultivate teachers' techno-humanistic dual competency through systematic training programs. Enhance digital literacy and ethical discernment to integrate AI as pedagogical augmentation-not role replacement. Pedagogical Redesign: Reengineer task-driven learning models with inquiry-based projects requiring higher-order thinking. Compel students to proactively interrogate AI-generated content, thereby restoring critical thinking praxis. Only through synergistic integration of value guidance, institutional governance, and pedagogical innovation can we achieve dialectical unity between GenAI and education's essence-ensuring technology authentically serves the primordial purpose of cultivating whole persons.

Use of AI tools in paper preparation. During the paper preparation AI tools were used to find the resources in the Internet.

References

1. Kars M.E. (2023). Generative AI in Education. *London Journal of Social Sciences.* № 6. P. 144–151. DOI: https://doi.org/10.31039/ljss.2023.6.114

2. Dhagare Mr.R.P. (2024).Generative AI and Education: A Symbiotic Relationship. *International Journal for Research in Applied Science and Engineering Technology.* № 12 (11). P. 1042–1045. DOI: https://doi.org/10.22214/ijraset.2024.65279

74

Вісник Національного технічного університету «ХПІ». Серія: Актуальні проблеми розвитку українського суспільства, № 2, 2025

3. Łodzikowski K., Foltz P.W., Behrens J.T. (2024). *Generative AI and Its Educational Implications*. № 3. P. 1–19. DOI: https://doi.org/10.48550/ARXIV.2401.08659

4. Swindell A., Greeley L., Farag A., Verdone B. (2024). Against Artificial Education: Towards an Ethical Framework for Generative Artificial Intelligence (AI) Use in Education. *Online Learning*. № 28 (2). P. 1–22. DOI: https://doi.org/10.24059/olj.v28i2.4438

5. WangN., Wang X., Su Y.-S. (2024). Critical analysis of the technological affordances, challenges and future directions of Generative AI in education: a systematic review. *Asia Pacific Journal of Education*. № 44 (1). P. 139–155. DOI: https://doi.org/10.1080/02188791.2024.2305156

6. Yu H., Guo Y. (2023). Generative artificial intelligence empowers educational reform: current status, issues, and prospects. *Frontiers in Education*. № 8. P. 1–10. DOI: https://doi.org/10.3389/feduc.2023.1183162

7. Liu J., Wang C., Liu Z., Gao M., Xu Y., Chen J., Cheng Y. (2024). A bibliometric analysis of generative AI in education: current status and development. *Asia Pacific Journal of Education*. № 44 (1). P. 156–175. DOI: https://doi.org/10.1080/02188791.2024.2305170

8. Shankar S.K., Pothancheri G., Sasi D., Mishra S. (2024). Bringing Teachers in the Loop: Exploring Perspectives on Integrating Generative AI in Technology-Enhanced Learning. *International Journal of Artificial Intelligence in Education*. № 35 (1). P. 155–180. DOI: https://doi.org/10.1007/s40593-024-00428-8

9. Olga A., Saini A., Zapata G., et al. (2023). Generative AI: *Implications and Applications for Education*. № 3. P. 1–34. DOI: https://doi.org/10.48550/ARXIV.2305.07605

10. Boubker O. (2024). From chatting to self-educating: can AI tools boost student learning outcomes? *Expert Systems with Applications*. Vol. 238. (Part A). DOI: https://doi.org/10.1016/j.eswa.2023.121820

11. Artyukhov A., Wołowiec T., Artyukhova N., Bogacki S., Vasylieva T. (2024). SDG 4, Academic Integrity and Artificial Intelligence: Clash or Win-Win Cooperation? *Sustainability*. № 16 (19). P. 1-23. DOI: https://doi.org/10.3390/su16198483

12. Baek E.O., Wilson R.V. (2024). An Inquiry Into the Use of Generative AI and Its Implications in Education. *International Journal of Adult Education and Technology*. № 15(1). P. 1–14. DOI: https://doi.org/10.4018/ijaet.349233

13. Shamsuddinova S., Heryani P., Naval M.A. (2024). Evolution to revolution: Critical exploration of educators' perceptions of the impact of Artificial Intelligence (AI) on the teaching and learning process in the GCC region. *International Journal of Educational Research*. Vol. 125. P. 102326. DOI: https://doi.org/10.1016/j.ijer.2024.102326

14. Oh P.S., Lee G.-G. (2024). Confronting Imminent Challenges in Humane Epistemic Agency in Science Education: An Interview with ChatGPT. *Science & Education*. № 34 (2). P. 779–805. DOI: https://doi.org/10.1007/s11191-024-00515-1

15. Duggal I., Tripathi T. (2024). Ethical principles in dental healthcare: Relevance in the current technological era of artificial intelligence. *Journal of Oral Biology and Craniofacial Research*. № 14 (3). P. 317–321. DOI: https://doi.org/10.1016/j.jobcr.2024.04.003

16. Cappelli M.A., Di Marzo Serugendo G. (2024). A semi-automated software model to support AI ethics compliance assessment of an AI system guided by ethical principles of AI. *AI and Ethics*. №5 (2). P. 1357–1380. DOI: https://doi.org/10.1007/s43681-024-00480-z

17. Mouta A., Torrecilla-Sánchez E.M., Pinto-Llorente A.M. (2024). Comprehensive professional learning for teacher agency in addressing ethical challenges of AIED: Insights from educational design research. *Education and Information Technologies*. № 30 (3). P. 3343–3387. DOI: https://doi.org/10.1007/s10639-024-12946-y

18. Hu X., Sui H., Geng X., Zhao L. (2024). Constructing a teacher portrait for the artificial intelligence age based on the micro ecological system theory: A systematic review. *Education and Information Technologies*. № 29 (13). P. 16679–16715. https://doi.org/10.1007/s10639-024-12513-5

Відомості про авторів / About the Authors

Sun Wei (Сунь Вей) – National Technical University "Kharkiv Polytechnic Institute", PhD student, Department of Philosophy, Jiamusi University, Faculty of Pedagogical Sciences, Professor, Department of Educational Technologies, Jiamusi, PRC; ORCID: https://orcid.org/0000-0002-0984-6219 ;

Dolska Olha (Дольська Ольга Олексіївна) – National Technical University "Kharkiv Polytechnic Institute", Doctor of Philosophy, Professor, Professor, Department of Philosophy; Kharkiv, Ukraine; ORCID: https://orcid.org/0000-0002-9577-8282