PEDAGOGICAL SCIENCES

EU LEGISLATION ON THE USE OF ARTIFICIAL INTELLIGENCE: CHALLENGES FOR UKRAINE IN THE EDUCATIONAL SPACE

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Introduction. Modern civilization is marked by rapid transformations, which are evident across all spheres of human activity. Among these developments, the widespread use of artificial intelligence (AI) has become increasingly prevalent, providing the global community with new digital tools for the effective organization of educational and research processes. Concurrently, the challenge of maintaining academic integrity and ensuring the quality of education has grown more pressing, highlighting the need for a comprehensive legal framework for AI services.

The European Union stands as a global leader in the development of legislation that regulates AI, addressing potential risks and the various impacts it may have. As a candidate for EU membership, Ukraine must, first, leverage the EU's experience to establish national standards in the field of artificial intelligence. Second, it must adapt its educational models to meet European requirements. We argue that the integration of EU AI practices into national legislation is a crucial step in aligning Ukraine's educational system with European trends. This alignment will foster the development of humanities education in the digital era, encourage the use of innovative technologies, and generate recommendations for the productive use of AI in teaching humanities disciplines.

The legal framework for artificial intelligence within the EU has garnered considerable scholarly attention. Notably, the works of S. Asirian [3], Y. Bysaha, D. Belov, V. Zaborovsky [4], and H. Chumakova [9] provide a thorough examination of the evolution of AI regulations, the impact of AI on authors' and related rights, its implications for national security and defense, and a comparative analysis of digitalization in Ukraine, the EU, and the USA.

The aim of the article is to reconstruct the stages of regulation of artificial intelligence (AI) in EU countries and analyze the challenges faced by Ukraine in the educational sector.

Materials and methods. The research is based on the Artificial Intelligence Act (AI Act). The methods employed include historical and chronological analysis, comparative legal analysis, and systemic analysis.

Results and Discussion. Artificial intelligence, as an innovative technology, has rapidly permeated most areas of human activity. The legal framework for its use in the European Union has been established relatively recently. This process was initiated by the European Parliament`s Resolution of 16 February 2017, which, though recommendatory in nature, called for the European Commission to develop and implement legislation concerning robotics and intellectual property. On 10 April 2018, 24 EU member states and Norway signed a declaration of cooperation on the use of AI. This agreement included provisions for funding AI research and its application in business and education. In the same year, on 25 May, the General Data Protection Regulation (GDPR) came into force. Subsequently, on 21 April 2021, the European Commission proposed the Artificial Intelligence Act (AI Act) [6, p. 163]. The final version of the AI Act was approved by the European Parliament in December 2023, by the Council of Ministers on 2 February 2024, and by parliamentary committees on 13 February 2024 [1; 7].

After passing all the necessary legislative stages, the AI Act was voted on by the European Parliament on 13 March 2024 and came into force on 1 August 2024 [7]. It is noteworthy that the opinions of the Members of Parliament were divided: the majority – 523 in favor – while 49 abstained and 46 voted against. Given the

potential risks associated with AI, it is crucial to understand the concerns of those who opposed or abstained from voting. Experts have identified three key arguments raised by opponents. The first is the fear of losing control over AI, particularly as it may demonstrate cognitive capabilities superior to those of humans, making its actions more difficult to predict. Another concern is the large-scale integration of AI into production, which could lead to mass unemployment, thereby causing social tension and significant psychological consequences for displaced workers. The third argument relates to AI bias, such as errors in facial recognition across different racial groups, particularly if training programs are biased towards the Europoid race. Nevertheless, the viewpoint of AI supporters ultimately prevailed, leading to the establishment of the world's first regulatory framework for its use.

Structurally, the legal framework for AI regulation is divided into three parts. The first part, the concept note, contains five elements: proposals (including the rationale, objectives, and alignment with existing policy frameworks and other EU policies); legal basis, subsidiarity, and proportionality; results from ex-post assessments, stakeholder consultations, and impact assessments; financial control; and other elements. These include implementation plans, monitoring, evaluation and reporting mechanisms, and detailed descriptions of the individual principles of the proposal [8, p. 1-16].

The second component is titled "Proposals for a Regulation of the European Parliament and of the Council laying down harmonized rules on artificial intelligence (AI Act) and amending certain Union legislative acts", which outlines 89 principles [8, p. 17-38]. The third component is the Artificial Intelligence Act (AI Act) itself, consisting of 12 chapters: 'General Principles', 'Prohibited Practices of Artificial Intelligence', 'High-Risk Unmanned Aircraft Systems', 'Transparency Obligations for Certain Unmanned Aircraft Systems', 'Measures to Support Innovation and Governance', 'EU Database for High-Risk Autonomous AI Systems', 'Post-Market Monitoring, Information Exchange, Market Surveillance', 'Code of Ethics', 'Privacy and Penalties,' 'Delegation of Powers and Committee Procedures', and 'Final Provisions'. A separate section includes a list of legislative and financial reporting

segments, which covers the structure of proposals, management measures, and the estimated financial impact of the initiative [8, p. 38–88].

The Artificial Intelligence Act is regarded as “a benchmark in the regulation of artificial intelligence technologies and systems, which will be looked to by lawmakers worldwide”. The AI Act represents an effort by the EU to establish a “global standard for AI regulation” [1; 7]. Non-compliance with the AI Act can result in substantial fines, with penalties scaled according to the size of the business entity. Large companies in violation may face fines up to 35 million EUR or 7% of their annual revenue, while small and medium-sized enterprises (including newly established ones) will be subject to lower penalties [5; 7].

At the same time, to facilitate the smooth adaptation of manufacturers to the newly established regulatory framework, it is planned to implement the Artificial Intelligence Act in stages. On February 2, 2025, the ban on AI systems with unacceptable risk will come into force, in May of the same year – codes of conduct, and by August 2 – management rules and obligations for general-purpose AI. The following year, in August 2026, the AI Act will be applied to all AI systems, and from September 2027, the EU Act will be applied to all risk categories [7].

As mentioned above, Ukraine has become a candidate for EU membership, making the AI Act essential for understanding its potential applications across various sectors, including education. In this context, in October 2019, Ukraine joined the Organisation for Economic Co-operation and Development (OECD) Recommendations on Artificial Intelligence, and on December 2, 2020, the Cabinet of Ministers adopted the National Concept for the Development of Artificial Intelligence in Ukraine for 2020–2030. According to this Concept, AI implementation is planned in nine key areas: education and vocational training, science, economy, cybersecurity, information security, defense, public administration, legal regulation and ethics, and justice. Additionally, the Concept aims to align Ukraine’s AI-related legal framework with European standards, foster AI research and innovation, and promote further development in the field [9, p. 270]. As a result, the Action Plan for the Implementation of the Concept (2021), the AI

Development Strategy, and the Roadmap for AI Regulation (2023) were approved [9, pp. 271–272].

Despite such legislative dynamism, there are evident challenges in integrating AI into the education. First and foremost, it is crucial to overcome digital poverty by ensuring the training of educators who are comprehensively proficient in artificial intelligence tools. To achieve this, educational programs need to be restructured to incorporate relevant disciplines. Amid the ongoing war, a significant challenge remains ensuring broad access to digital technologies. Addressing this issue requires effective collaboration between educational institutions and municipal authorities, which also appears to be a financially viable solution. The rapid advancement of AI has exacerbated concerns regarding technological dependency among students, particularly on social media, the Internet, gaming, and phantom vibration syndrome [2]. Therefore, it is essential to develop a comprehensive strategy to mitigate these negative effects.

Conclusions. The European Union member states have regulated the use of artificial intelligence by adopting the world's first Artificial Intelligence Act. Its development and implementation were carried out in stages, considering potential risks and the need to ensure ethical standards. Ukraine has actively contributed to the development of AI regulatory standards; however, in the education sector, it is essential to consider the existing challenges and respond accordingly.

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