

MANAGING THE INTEGRATION OF AI INTO THE EDUCATIONAL PROCESS: PROS AND CONS IN PEDAGOGICAL WORK

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Abstract: *Today, AI tools are used more and more often in education and educational management. Educational institutions are actively introducing AI tools into teaching and administrative processes, which creates both new opportunities and new organizational challenges. AI technologies can help teachers prepare materials, organize learning activities and adapt educational content to students' needs. However, the wider use of AI also raises concerns about academic honesty, excessive dependence on digital tools and reduced independent thinking among students. The integration of AI is also changing the role of teachers in the educational environment. Today, educators are expected not only to provide knowledge, but also to coordinate digital learning processes and supervise the responsible use of AI technologies. The analysis is based on scientific literature and international data published by OECD, UNESCO and other specialized organizations. International experience shows that successful AI use depends not only on technology itself, but also on institutional regulation, teacher training, ethical standards and effective management practices.*

Keywords: *educational management, artificial intelligence, AI integration, digital transformation, pedagogical risks, academic integrity, educational governance, AI in education.*

JEL: I23, O33, M15, D83.

Introduction

Artificial intelligence is used more actively in modern education and educational management. AI technologies are increasingly used not only during the learning process itself, but also in administrative and management activities within educational institutions. These changes are affecting teaching methods, student assessment and communication between teachers and students. Many researchers note the positive impact of AI on education. Holmes, Bialik, and Fadel argue that artificial intelligence supports personalized learning, adaptive educational models and the automation of routine teaching tasks [3]. Rose Lukin also describes AI as a technology that can strengthen human intelligence in a human-centered educational environment [4]. However, the rapid spread of generative AI has also created new concerns related to academic plagiarism, dependence on automated systems, weaker critical thinking and reduced student autonomy in research activities [6]. The growing use of AI is also changing the professional role of teachers. According to Bates, educators today increasingly work as mentors, coordinators and managers of digital educational environments rather than only as providers of information [1]. Because of this, successful AI implementation depends not only on technical infrastructure, but also on institutional management, teacher training and clear regulations for the use of AI technologies.

International experience shows that many educational institutions are still not fully prepared for large-scale AI integration. UNESCO reports highlight problems connected with ethical regulation, data protection, academic honesty and the absence of clear institutional policies regarding AI use [9], [7]. Therefore, the implementation of AI should be viewed not only as a technological process, but also as an important management task that requires planning, regulation and continuous academic supervision.

AI Integration as a Challenge for Education Management

The use of AI in education creates new responsibilities for teachers, administrators and educational managers, especially in areas related to academic honesty, digital policy and the organization of the learning process. Modern generative AI systems are able not only to process information, but also to create academic content and perform some tasks that were traditionally completed by students and teachers themselves.

Many educational institutions today operate in conditions where technological development is progressing faster than pedagogical methods and internal academic regulations can adapt. Easy access to AI-generated materials creates additional concerns related to academic integrity, independent learning and the development of critical thinking skills. Researchers discuss both the advantages and the risks connected with the growing use of AI in education. Selwyn points to problems related to academic plagiarism, dependence on automated systems and weaker critical thinking among students [6]. At the same time, Holmes, Bialik, and Fadel emphasize that AI technologies can support personalized learning, adaptive education and the optimization of teaching activities [3]. Lukin also considers AI a tool capable of strengthening human intelligence within a human-centered educational environment [4].

The integration of AI is also changing the professional role of teachers. According to Bates, educators are increasingly becoming mentors, coordinators and managers of digital learning environments instead of acting only as traditional sources of information [1]. Because of this, the successful implementation of AI depends not only on technology itself, but also on institutional management, teacher training and clearly defined rules for the use of AI.

UNESCO reports show that many educational institutions still face difficulties related to ethical regulation, data protection and the maintenance of academic honesty in digital learning environments [9], [7]. From a management perspective, effective AI implementation requires not only access to digital technologies, but also internal policies, staff preparation and mechanisms for monitoring the responsible use of AI tools.

Structural Factors Transforming Education with AI

Modern education is changing together with the rapid development of digital technologies and online learning platforms. Because of this, AI tools are becoming more common in schools and universities, both in teaching and in administrative work.

Researchers also connect the spread of AI with the growing demand for flexible and personalized learning. Holmes, Bialik, and Fadel note that AI technologies can support adaptive learning, automated feedback and more individualized educational approaches [3]. Lukin also describes AI as a tool that may strengthen human intelligence in a human-centered educational environment [4].

Many educational organizations are also trying to adapt to labor market changes and improve students' digital competencies. As a result, AI tools are now used not only during classes, but also in organizational and management processes.

However, the active use of AI technologies also creates several concerns. Educational institutions face problems related to academic honesty, dependence on automated systems and weaker critical thinking among students. Selwyn points out that excessive reliance on AI may negatively affect students' independence and analytical skills [6].

UNESCO reports also show that many educational organizations still experience difficulties connected with ethical regulation, data protection and the responsible use of AI technologies in education [7], [9]. Because of this, AI should be viewed not only as a technological innovation, but also as an important educational and management challenge.

International trends in the integration of AI in education

Artificial intelligence is becoming more common in education, so many educational institutions are starting to use AI tools in the learning process. Along with the advantages of these technologies, new problems have also appeared, including lower student independence, increasing academic plagiarism,

insufficient digital skills among teachers and the lack of clear rules for AI use in education. Figure 1 shows how actively teachers use artificial intelligence in different countries.

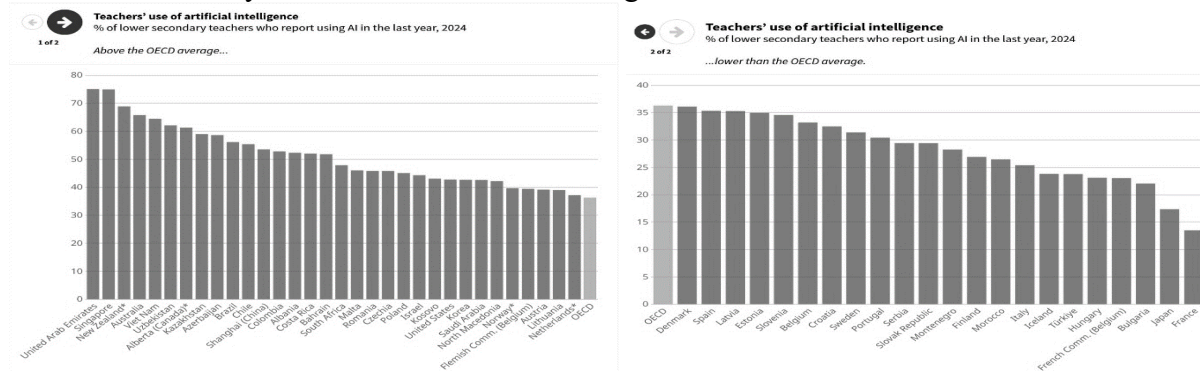


Figure 1 «Teachers' use of article Intelligence»

Source: [5]

According to the chart, the average level of AI use among teachers in OECD countries is around 36%. The highest indicators can be seen in the UAE and Singapore, where approximately 75% of teachers already use artificial intelligence in their professional activities. High levels of AI use are also observed in New Zealand, Australia, Vietnam, Uzbekistan and Kazakhstan. These results suggest that countries with stronger digital education policies usually introduce AI technologies into schools and universities more actively. For example, Singapore pays considerable attention to teacher training and the development of digital competencies. According to OECD data, about 76% of Singaporean teachers have already completed professional training related to the use of AI in education [5]. The use of AI also remains relatively high in the United States and Israel, where educational platforms, digital services and personalized learning technologies are actively developing. In contrast, France and Japan show lower levels of AI use among teachers. This may be connected with a more cautious educational policy and slower adaptation to digital technologies. Overall, international experience shows that the effectiveness of AI implementation largely depends on government support for the digital transformation of education. OECD TALIS 2024 data also indicates that the use of artificial intelligence by teachers continues to increase, especially in countries with highly digitalized educational environments, as presented in Table 1 [5].

Table 1 «Main Areas of AI Use by Teachers»

<i>Applications of AI</i>	Percentage of teachers
<i>Summarizing and analyzing information</i>	68%
<i>Preparing educational materials</i>	64%
<i>Preparing presentations</i>	52%
<i>Creating tests</i>	41%
<i>Analyzing academic performance and grading assignments</i>	25%

Source: Author's creation

The table shows that teachers most often use AI to simplify routine educational tasks and prepare learning materials. According to the OECD TALIS 2024 study, many educators use artificial intelligence for working with information, generating text and creating educational content [5]. AI tools help teachers save time when preparing for classes and make it easier to work with large amounts of information.

Now, the percentage of teachers using AI for grading and analyzing academic performance remains relatively low. This suggests that many educators are still cautious about allowing artificial intelligence to evaluate students' knowledge. Such concerns are mainly connected with possible mistakes, limited transparency of algorithms and questions about the objectivity of AI systems [5].

The spread of AI technologies in education is closely related to the level of digitalization in different countries. International statistics show that AI tools are introduced more actively in educational systems where government policy strongly supports digital technologies and innovation [5].

Despite the advantages of AI technologies, international studies also point to several serious pedagogical risks. One of the most frequently discussed problems is the decline in students' independence, as shown in Table 2 [8].

Table 2 «Major Drawbacks of AI in School Education»

<i>The main drawbacks of AI in education</i>	<i>Percentage</i>
Decreased learner autonomy	72%
Risk of academic plagiarism	68%
Decreased critical thinking	61%
Dependence on technology	57%
Lack of reliability of information provided by AI	55%

Source: Author's creation

According to international studies, many educators believe that the growing use of AI may reduce students' independence. One of the reasons is that generative AI systems allow students to receive ready-made answers and solutions very quickly, often without deeply analyzing the learning material themselves.

In addition, 68% of teachers report an increase in academic plagiarism. Modern AI systems are able to generate high-quality texts, which makes it more difficult for educators to determine whether assignments were completed independently by students [8].

Many teachers also express concern about the decline of students' analytical and critical thinking skills. When students rely too heavily on AI-generated answers, they may become less involved in discussion, analysis and independent problem-solving.

Another important issue connected with the digital transformation of education is the readiness of educational institutions to integrate AI technologies. UNESCO studies show that many educational organizations still do not have fully developed regulations or clear institutional policies for the use of AI in education, as shown in Table 3 [7], [9].

Table 3 «Educational Institutions' Readiness for AI Integration»

<i>Indicator</i>	<i>Value</i>
Higher education institutions that have or are developing AI policies	66%
Institutions without formal AI regulations	more than 30%
Main challenge	lack of uniform guidelines for AI use

Source: Author's creation

The results show that the use of AI in education is becoming not only a technical issue, but also an important organizational and managerial challenge. Educational institutions need to develop clear guidelines for AI use, provide proper training for teachers and monitor compliance with academic honesty standards [10].

Another important priority is the development of digital culture among students. AI technologies should support the educational process and help students work more effectively, rather than fully replace independent learning and critical analysis.

The rapid growth of the global AI in Education market also demonstrates how quickly digital technologies are becoming part of modern education, as shown in Figure 2.

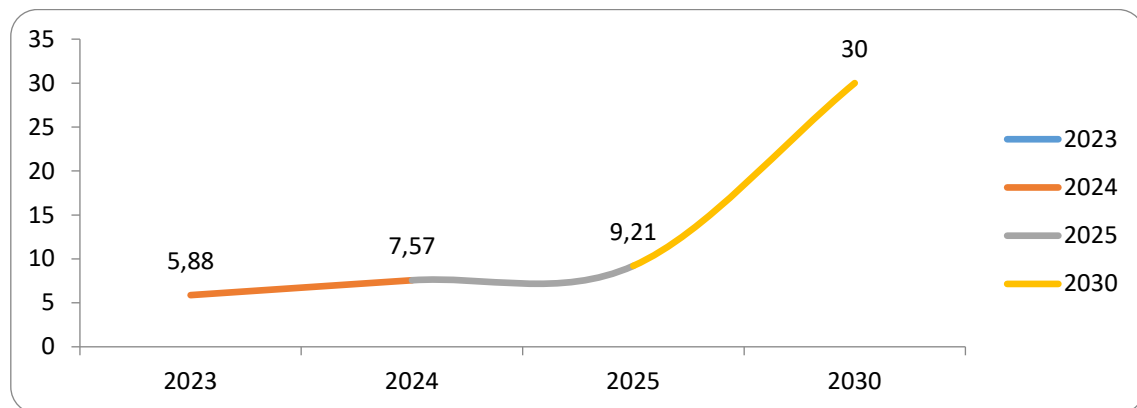


Figure 2 «Growth of the Global AI in Education Market»

Source: Author's creation

Current data shows that the AI market in education is continuing to grow rapidly. According to current forecasts, the global AI in Education market may exceed \$30 billion by 2030, which suggests that AI technologies are likely to remain an important part of modern educational systems for the long term [2].

The analysis also shows that the use of artificial intelligence in education creates both important advantages and serious risks. AI technologies help automate routine teaching tasks, simplify the preparation of educational materials and support more personalized learning approaches. At the same time, excessive dependence on AI may reduce students' independence, contribute to academic plagiarism and increase reliance on digital technologies.

Under these conditions, effective AI implementation requires a clear management approach. Educational institutions need to introduce internal regulations for AI use, improve teachers' digital competencies and create mechanisms for monitoring academic honesty. It is also important to preserve the central role of teachers in the educational process. In practice, AI works most effectively when it supports teachers rather than replaces direct interaction between teachers and students.

The increasing use of AI is also changing the professional role of teachers. Traditional teaching models are gradually becoming more flexible and digitally oriented. The main changes in the teacher's role related to AI integration are presented in Table 4.

Table 4 «Changes in the Teacher's Role with the Integration of AI»

<i>Traditional Model</i>	<i>AI-powered model</i>
Information Source	Mentor and moderator
Manual Assignment Review	Automated analysis
Standard Assignments	Personalized assignments
Knowledge Transfer	Development of analytical skills
Learning Assessment	Coordination of the digital environment

Source: Author's creation

Teaching methods, assessment practices and communication in the educational environment are also gradually changing. In the context of digitalization, greater importance is now placed on coordinating the educational process, developing students' critical thinking skills and managing digital learning environments. Because of this, AI integration requires not only technical training for educators, but also changes in their professional competencies and teaching approaches [7].

Another useful method for analyzing the role of AI in education is SWOT analysis, which makes it possible to examine the strengths and weaknesses of artificial intelligence, as well as the opportunities and potential risks connected with its use in the educational system.

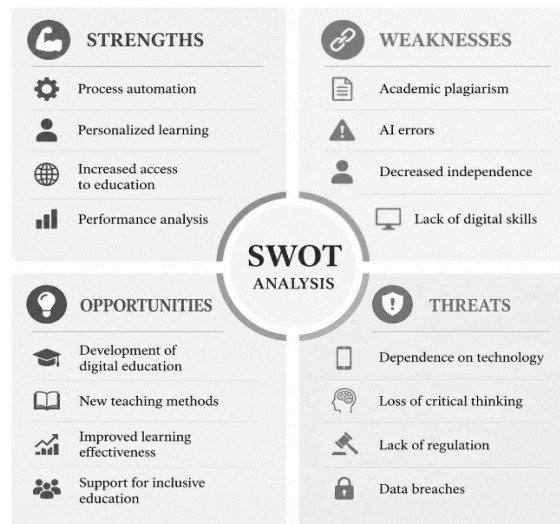


Figure 3 «SWOT Analysis of AI Integration in Education»

Source: Author's creation

The SWOT analysis shows that artificial intelligence has considerable potential for the development of the education system. AI technologies can simplify routine educational tasks, improve access to learning materials and support more flexible learning opportunities for both students and teachers [9]. The use of AI also creates several serious risks, including excessive dependence on technology, reduced student independence and concerns related to the protection of personal data. Because of this, the implementation of AI should be supported by effective management mechanisms, pedagogical supervision, digital literacy and clear institutional regulations. International studies also show that one of the main challenges remains the insufficient preparation of teachers for working with AI technologies. According to OECD TALIS 2024, many educators report a lack of digital competencies and insufficient professional training related to the use of artificial intelligence, as shown in Figure 4 [5].

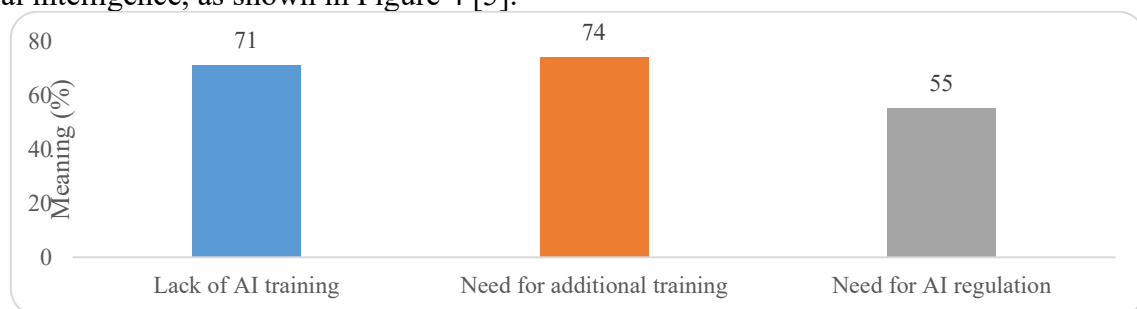


Figure 4 «Training Teachers to Use AI»

Source: Author's creation

We can see from the figure 4 that the successful use of AI in education depends not only on technology, but also on people. Even when educational institutions have the necessary technical infrastructure, the effectiveness of AI largely depends on how well teachers are prepared to work with these technologies [5]. In many universities, teachers still have different attitudes toward AI tools. Some educators actively use AI in their professional activities, while others remain more cautious because of concerns related to academic honesty and the possible decline of students' independent thinking. For this reason, one of the important tasks for the modern education system is the organization of professional development programs that help teachers improve their digital skills and learn how to use AI technologies responsibly.

The collected data also shows that AI technologies help automate routine tasks, simplify the preparation of educational materials and support more personalized learning. However, excessive dependence on AI may reduce students' independence, increase academic plagiarism and strengthen reliance on digital technologies.

Conclusions

Artificial intelligence is already changing the way educational institutions organize teaching, communication and academic management. AI tools influence teaching methods, interaction between teachers and students, and everyday educational processes. They also help reduce routine work and make personalized learning more accessible.

However, the wider use of AI also creates new problems. Educational institutions are facing issues related to academic plagiarism, dependence on automated systems and weaker analytical skills among students. In many cases, the successful use of AI depends not only on technology itself, but also on teacher training, institutional readiness and clear academic rules. The role of teachers is changing as well, since educators are now expected to act not only as sources of information, but also as mentors and coordinators of digital learning environments.

Educational institutions should continue developing ethical standards, improving teacher training and adapting assessment systems to the increasing use of AI technologies. Today, artificial intelligence is becoming not only a technological innovation, but also an important management challenge that requires responsible and balanced use.

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