AMERICAN JOURNAL OF MULTIDISCIPLINARY BULLETIN
ISSN: 2996-511X (online) | ResearchBib (IF) = 9.512 IMPACT FACTOR
Volume-4| Issue-3| 2026 Published: |30-03-2026|

SOCIO-PSYCHOLOGICAL ASPECTS OF USING ARTIFICIAL INTELLIGENCE IN THE EDUCATIONAL PROCESS

https://doi.org/10.5281/zenodo.19132230

Uzaqov Nomozali Hamdamovich
Senior Lecturer, Department of Information Systems and Technologies,
Qarshi State Technical University
Email: uzakovnomozali@gmail.com
Orcid: 0009-0009-1230-0039

Abstract

This article examines the socio-psychological aspects of using artificial intelligence technologies in the educational process based on scientific, theoretical, and analytical approaches. The study analyzes the impact of AI-based learning environments on students' psychological well-being, learning motivation, social adaptation, and communicative activity. In addition, the paper highlights the opportunities of artificial intelligence technologies in personalizing the learning process, developing students' independent thinking skills, and improving the effectiveness of education. The research results show that along with the positive effects of using artificial intelligence, there are also certain risks, such as digital dependency, social isolation, and challenges related to psychological adaptation. The article proposes scientific and practical recommendations for the effective and balanced integration of artificial intelligence technologies into the educational process, reducing socio-psychological risks, and ensuring humanistic principles in education.

Keywords

Artificial intelligence, digital education, educational process, socio-psychological aspects, learning motivation, learner-centered education, adaptive learning systems, pedagogical innovations, digital transformation, educational effectiveness.

Introduction.

In the context of globalization and digital transformation, ongoing processes are significantly influencing all sectors of society, particularly the education system, leading to fundamental qualitative changes. The rapid development of information and communication technologies, along with the widespread implementation of artificial intelligence (AI) solutions, is contributing to the modernization of the organization, management, and assessment mechanisms of the educational process.

AMERICAN JOURNAL OF MULTIDISCIPLINARY BULLETIN
ISSN: 2996-511X (online) | ResearchBib (IF) = 9.512 IMPACT FACTOR
Volume-4| Issue-3| 2026 Published: |30-03-2026|

As a result, the modern educational model is increasingly becoming digital, flexible, and learner-centered.

According to recent analytical reports published by leading international organizations such as UNESCO and OECD, AI-based educational technologies are expected to become an integral part of the global education system by 2030. These technologies significantly expand opportunities for personalizing learning, efficiently using educational resources, and accurately analyzing students' knowledge and progress. Consequently, the content, methods, and organizational forms of education are being reconsidered, and innovative pedagogical approaches are being developed.[1]

Figure 1. Main advantages of AI-based educational technologies.

The use of artificial intelligence technologies makes it possible to create a flexible learning environment that takes into account students' knowledge levels, abilities, learning pace, and psychological characteristics. Adaptive learning platforms, intelligent tutoring systems, and analytical assessment tools help form educational conditions tailored to the individual needs of students and contribute to the development of their independent learning skills. This not only increases the effectiveness of education but also creates the foundation for raising the quality of the learning process to a new level.

These processes are also aligned with national development strategies. In particular, within the development strategy of New Uzbekistan, the introduction of digital technologies and the development of human capital are defined as priority directions, and the application of innovative and digital approaches in the

education system is recognized as an important strategic task. These policy documents emphasize that the digital transformation of education should encompass not only technological aspects but also social and psychological dimensions.

At the same time, the use of artificial intelligence in the educational process is not limited only to didactic and academic outcomes. These technologies also directly influence students' psychological conditions, learning motivation, self-awareness processes, and the system of social relations. While the automation of the learning process in a digital educational environment can enhance students' independence and self-management skills, in some cases it may also lead to reduced social interaction and challenges related to psychological adaptation.

Among the socio-psychological issues associated with the widespread implementation of artificial intelligence technologies in the education system are the reduction of direct interaction between teachers and students, psychological difficulties arising during adaptation to the digital environment, concerns related to personal data security, and excessive reliance on algorithmic decision-making. These factors may negatively affect the humanistic principles of the educational process.[2]

At present, although the technical and organizational aspects of using artificial intelligence technologies in education have been studied to a considerable extent, the issue of their socio-psychological impact has not yet been fully explored as a comprehensive scientific research subject. Most studies focus mainly on analyzing the influence of AI technologies on the quality of education and academic performance, while insufficient attention is paid to their effects on students' psychological development, social activity, and communicative skills. In addition, the psychological and professional readiness of teachers to work with artificial intelligence technologies, as well as the challenges related to their effective integration into the educational process, remain highly relevant. Ensuring a balance between the human factor and digital technologies and positioning artificial intelligence as a supportive tool in education require a scientifically grounded, systematic, and comprehensive approach.

Research Objective and Theoretical Foundations

The main objective of this research is to scientifically and theoretically analyze the socio-psychological aspects of using artificial intelligence technologies in the educational process, as well as to identify the impact of these technologies on students' psychological condition, learning motivation, and processes of social adaptation. Within the framework of the study, identifying possible socio-psychological problems that may arise in AI-based educational environments and

AMERICAN JOURNAL OF MULTIDISCIPLINARY BULLETIN
ISSN: 2996-511X (online) | ResearchBib (IF) = 9.512 IMPACT FACTOR
Volume-4| Issue-3| 2026 Published: |30-03-2026|

developing scientific and practical recommendations aimed at addressing these issues are also defined as important tasks.

The integration of artificial intelligence and the educational process is considered one of the important research directions in modern pedagogy. The concept of artificial intelligence refers to the ability of information systems to model and perform intellectual activities characteristic of human thinking, such as learning, analysis, logical reasoning, and decision-making. In the education system, artificial intelligence technologies are recognized as innovative tools that enable the automation of the learning process, the personalization of education, and the improvement of educational effectiveness [3].

From the perspective of pedagogical approaches, artificial intelligence technologies create a modern technological foundation necessary for the effective implementation of learner-centered and competency-based education models. In particular, adaptive learning systems developed based on artificial intelligence support students' active and conscious acquisition of knowledge by relying on constructivist and cognitive theories. These systems analyze students' existing knowledge, learning pace, and individual psychological characteristics, allowing the formation of personalized learning paths tailored to their specific needs.

Domain	Core Elements	Expected Outcomes
Technological Foundation	Artificial Intelligence (AI), Adaptive Learning Systems, Data Analytics	Automation and Personalization of the Educational Process
Psychological Factors	Learning Motivation, Psychological Well-being, Social Adaptation	Identifying Individual Needs of Students
Theoretical Basis	Constructivism, Cognitive Theory, Learner-Centered Approach	Active and Conscious Knowledge Acquisition

The Impact of Artificial Intelligence on Students' Psychological State

The use of artificial intelligence technologies in the educational process has a multifaceted impact on students' psychological state. The creation of a personalized learning environment strengthens students' self-confidence, increases their intrinsic motivation to learn, and helps reduce stress factors within the learning process. Intelligent tutors based on artificial intelligence analyze students' mistakes individually and provide positive reinforcement, thereby ensuring psychological comfort [4].

It should be noted that excessive and uncontrolled use of artificial intelligence technologies in the educational process may lead to certain negative effects on

students' psychological well-being. In particular, excessive adaptation to a digital learning environment may result in psychological dependence on technology, which can limit active communication and collaboration in real social environments. As a result, cases of social isolation may increase, and the development of students' communicative activity and teamwork skills may slow down.

Moreover, in education systems organized on the basis of artificial intelligence, automated and continuous algorithmic assessment processes may increase psychological pressure on students. Constant monitoring and frequent exposure to evaluation results may cause students to feel continuously observed, leading to fear of failure and increased emotional stress. This, in turn, can negatively affect their emotional stability, level of self-assessment, and ability to make independent decisions.

In addition, ready-made solutions and automated recommendations provided by artificial intelligence systems may hinder the sufficient development of students' independent thinking, critical analysis, and creative skills. Therefore, when implementing artificial intelligence technologies in the educational process, it is important to thoroughly analyze their psychological impact, integrate them with human-centered pedagogical approaches, and develop balanced mechanisms for their use. This remains an important scientific and practical task [5].

Transformation of Social Relations in the Educational Process

The integration of artificial intelligence technologies into the education system is significantly changing the nature of social relations between teachers and students. In traditional education models, the teacher acted as the primary source of knowledge, whereas in AI-based learning environments, their role increasingly manifests as an advisor, guide, and coordinator [6].

Although artificial intelligence technologies support communication processes in remote and hybrid learning environments, the limitation of face-to-face interaction may negatively affect students' socialization to some extent. Therefore, maintaining human interaction and collaboration in a digital learning environment is an important pedagogical task [7].

Overall, the effective development of social relations in AI-based learning environments is ensured when the pedagogical process is grounded in humanistic principles, cooperation between teachers and students is preserved, and the role of technology as a supportive tool is clearly defined. This approach contributes to enhancing not only the technological but also the social and psychological effectiveness of education.

Positive Aspects and Potential Risks of Artificial Intelligence

The introduction of artificial intelligence technologies into the educational process provides several positive outcomes, including personalization of learning, improvement of education quality, reduction of teachers' workload, and promotion of inclusive education. At the same time, challenges such as personal data security, transparency of algorithmic decisions, and technological inequality emerge as pressing concerns [8].

To mitigate these risks, it is necessary to improve the regulatory and legal framework, develop teachers' digital competencies, and ensure adherence to ethical principles in the use of artificial intelligence technologies.

Conclusion. In conclusion, the use of artificial intelligence technologies in the educational process emerges as an important innovative factor that contributes to the modernization of the contemporary education system. AI-based learning environments expand opportunities to account for students' individual psychological characteristics, knowledge levels, interests, and learning pace, creating the necessary conditions for the effective implementation of a learner-centered education model.

The positive psychological effects of artificial intelligence are primarily explained by the creation of a personalized and supportive learning environment, the reduction of stress and emotional strain during the learning process, and the stabilization of knowledge acquisition. At the same time, the study results indicate that excessive use of AI tools may lead to negative psychological consequences, such as digital dependence, increased social isolation, and a reduction in direct interaction between teachers and students. These factors highlight the necessity of a balanced and scientifically grounded approach to integrating AI technologies into the educational process. From a social perspective, the use of artificial intelligence in education contributes to expanding equal learning opportunities, providing quality educational resources to students in remote areas, and supporting socially vulnerable groups. This process serves as a critical social foundation for developing human capital and preparing knowledgeable and competitive professionals. Simultaneously, significant changes are occurring in the professional role of teachers, shifting their function from primarily knowledge providers to guides, advisors, and coordinators of the learning process.

Organizing the educational process based on artificial intelligence has high social and psychological significance, improving education quality, promoting sustainable social development, and shaping a digital society. In the future, implementing a state policy grounded in a comprehensive and systematic approach that harmonizes pedagogical, psychological, and ethical aspects of AI use will ensure the sustainable and human-centered development of the field.

REFERENCES:

1. Mirziyoyev Sh.M. *Yangi O‘zbekiston taraqqiyot strategiyasi.* – Tashkent: Uzbekistan, 2022. – 112 p.

2. Uzaqov N.H., INNOVATIVE EDUCATIONAL TECHNOLOGIES IN DIGITAL EDUCATION.- Educational Research in Universal Sciences ISSN: 2181-3515

3. NH Uzaqov., “THE POSITIVE IMPACT OF DIGITAL TECHNOLOGIES DEVELOPMENT ON THE EDUCATIONAL PROCESS”- https://advancedscienti.com/index.php/AJEL/article/view/2144

4. Uzaqov N.H., Oliy ta'limda ma'naviy-ma'rifiy jarayonlar boshqarish.- Международный научный журнал № 33 (100),часть 2 Май, 2025

5. NH Uzaqov., THE POSITIVE IMPACT OF DIGITAL TECHNOLOGIES DEVELOPMENT ON THE EDUCATIONAL PROCESS. – AMERICAN JOURNAL OF EDUCATION AND LEARNING, 2025/6/3, 1011-1015 c.

6. Qodirov B.Q., Uzaqov N.H., Digital Informed and Innovative Pedagogical Technologies of Management of Cultural and Educational Work in Higher Education.- AMERICAN Journal of Science on Integration and Human Development Volume 2, Issue 4, 2024 ISSN (E): 2993-2750