

## **THE IMPACT OF ARTIFICIAL INTELLIGENCE ON LEARNING-EVALUATION ACTIVITIES WITHIN SCHOOL ORGANIZATIONS**

**Maria-Luiza Hrestic<sup>1</sup>, Georgiana-Tatiana Bondac<sup>2\*</sup>**

*<sup>1)2)</sup> "Valahia" University of Târgoviște, Târgoviște, Romania*

### **Abstract**

Artificial Intelligence (AI) significantly transforms learning and assessment activities within school organisations. This paper examines the impact of AI on educational processes, with a focus on how technology influences the personalization of learning and the automation of assessments. The purpose of the study is to assess teachers' perceptions of the use of AI in learning and assessment activities, using an opinion survey as a research tool. The data collected provides insights into the benefits, such as instant feedback and adaptive learning, but also the challenges, such as reliance on technology and the risks of over-standardization. The results suggest that while AI brings significant improvements in education, a balanced approach is needed to ensure a balance between technology and human interaction in learning and assessment processes.

### **Keywords**

Artificial Intelligence, school organization, learning-evaluation activities, teaching staff.

### **JEL Classification**

M15, O15

---

### **Introduction**

In the age of accelerated digitization, Artificial Intelligence (AI) is becoming an essential technology in multiple sectors, including education. School organizations are in the process of adapting to new challenges, and AI is considered a promising solution for improving educational performance. AI enables the personalization of learning, the automation of assessments and the provision of rapid feedback, all of which contribute to the optimization of the educational process. At the same time, the use of AI raises important questions about the impact on human interaction, the student-teacher relationship, and the development of students' social and emotional competencies.

A key aspect of integrating AI into education is its ability to provide personalized resources based on the needs of each student. This can range from adapting teaching

---

\* Corresponding author, **Georgiana-Tatiana Bondac** – georgianabondac@yahoo.com.

materials to the student's learning pace to creating tests and assessments that reflect individual progress. This personalization not only improves academic results but also develops a sense of autonomy and motivation among students, making it easier for them to take responsibility for their learning process.

On the other hand, AI-based learning can open doors to innovative teaching methods. For example, augmented and virtual reality technologies combined with AI can create immersive learning experiences that transcend the boundaries of traditional classrooms. Students can explore complex concepts in an interactive way, with the opportunity to actively participate in the learning process. This type of interactive education can increase student engagement and understanding, making them more prepared for the challenges of the future.

However, integrating AI into education does not come without challenges. Besides the obvious benefits, such as increased efficiency and task automation, there are concerns about the ethics and long-term impact of this technology on education systems. Also, the risks associated with excessive use of technology can affect the mental and social health of students, who may feel isolated in technology-based learning environments. This reality emphasizes the need to maintain a balance between the use of technology and human interaction.

As digital technologies become more integrated into everyday life, the use of AI in education is no longer just an option, but a necessity. Students of today's generations have grown up surrounded by technology, and schools must keep up with these changes to provide a relevant education. In this context, AI can contribute to the creation of learning environments that are more interactive and more adapted to the individual needs of students. This personalization can improve students' academic performance and motivation, providing them with a unique educational path.

Another important point to note is that the use of AI in education can help reduce performance gaps between students with various abilities. AI can identify students who struggle in certain areas and provide them with additional resources and support, helping to level the playing field. This ability to provide individualized support is particularly important in the context of the diversity of students and their varied educational needs. Thus, AI not only supports students in individual learning but also contributes to the creation of a more inclusive educational community.

The integration of artificial intelligence (AI) in education is a key trend in the evolution of contemporary education systems, bringing both opportunities and significant challenges. In addition to the obvious benefits, such as increased efficiency, personalization of the educational process and automation of tasks, AI raises important questions regarding ethics, the long-term impact on interpersonal relationships in the educational environment and possible risks to students' mental health. Despite these concerns, the use of AI in education is no longer just an option, but a necessity in the context of a digitalized society, where students are already familiar with technology.

However, the specialized literature reveals an important gap: while there are numerous studies on the technological advantages of AI in education, less attention is paid to its balanced integration, so that it does not replace human interaction, but complements it. Moreover, it is not clearly defined how AI can be used effectively to respond to the diversity of educational needs and to contribute to social inclusion in the school

environment. This paper aims to explore in depth how AI can be integrated into education to support the personalization of learning, reduce performance disparities and promote inclusion. The article is structured as follows: introduction, a literature review, the methodology used to investigate the balanced integration of AI, the results obtained, conclusions and recommendations.

### **1. Review of the scientific literature**

The use of Artificial Intelligence in education is an increasingly explored research topic, with studies demonstrating the positive impact this technology can have on learning and assessment. According to Holmes et al. (2019), AI can personalize learning at the individual level, adapting educational materials according to each student's pace and learning style. This allows for more effective and motivating learning, with students being able to progress according to their specific needs.

Another aspect of implementing AI is the ability to create interactive educational simulations and games. According to research by Bower M. and Sturman D. (2020), these simulations can provide students with experiential learning opportunities, encouraging critical thinking and problem solving. These active learning methods have been proven to be more effective than traditional methods, promoting student engagement and facilitating a deeper understanding of concepts.

AI can support teachers not only in personalizing learning, but also in monitoring student progress. AI-powered solutions can analyse student performance data, identifying strengths and weaknesses. These systems can provide personalized suggestions for each student, giving teachers detailed information to adapt lesson plans. The authors Luckin R. and Cukurova M. (2019) emphasize that AI can become a valuable educational "assistant", not only in administrative management, but also in pedagogical interventions.

On the other hand, the integration of AI in education also raises questions related to ethics, data protection and privacy of student information. There is a risk that AI algorithms are unintentionally biased, thereby affecting the fair assessment of students. There are also concerns about excessive surveillance and the use of personal data for commercial purposes. Thus, while AI can greatly improve the educational process, its implementation requires clear and transparent regulation to prevent abuses.

Another major concern concerns the training of teachers to use AI. Many teachers do not feel sufficiently prepared to integrate AI into teaching, which can limit the positive impact of this technology. Continuing education and professional development are essential to ensure that teachers can use technology effectively, and adapt quickly to changes in the educational landscape.

AI can also influence the way the evaluation is done. Traditional assessments based on written tests can be supplemented with competency-based assessments through simulations or hands-on activities where AI plays a crucial role. This can contribute to a more comprehensive and fair assessment of students' abilities, ensuring that each student is assessed fairly and that different forms of learning are taken into account.

## 2. Research methodology

The questionnaire used in this research was designed to assess the perceptions and level of use of Artificial Intelligence (AI) in teaching-learning and assessment activities in school organizations. Specifically, the questionnaire aims to: the degree of familiarity of teachers with AI and the perceived advantages and disadvantages. The questionnaire was structured into 12 questions. The sample consisted of a total of 300 teachers, selected based on a voluntary sampling strategy. Respondents were invited to complete the questionnaire through two methods: physical format: distributed in partner schools in the local educational network and online format: using the Google Forms platform, which allowed the collection of responses from different regions. The distribution of the questionnaire took place between July 1 and September 30, 2024, ensuring a sufficient duration to obtain a representative number of responses. To maintain confidentiality, the data were collected anonymously. The questionnaire was validated through a pilot test conducted on a small group of 30 respondents before the final distribution. This step allowed for optimization of the question wording to eliminate ambiguities and ensure the relevance of the questions. The collected responses were processed using SPSS and Microsoft Excel. The sample is dominated by teachers with extensive professional experience, which provides a valuable perspective on the traditional and modern perception of AI in education. However, the use of voluntary sampling may limit the generalizability of the results. In the future, a stratified sampling could provide a better representativeness of the teaching population.

## 3. Results and discussions

The results are presented including absolute frequencies and percentages for each question in the questionnaire.

**Table no 1. Age of respondents**

Category	Frequency (N)	Percentage (%)
<30 years	18	6.0%
30-39 years	48	16.0%
40-50 years	126	42.0%
Over 50 years	108	36.0%
Total	300	100.0%

*Source:* developed by the authors

The dominant category in the sample is that of respondents aged between 40 and 50 (42%), followed by those over 50 (36%). This distribution indicates that the majority of respondents are experienced teachers, as these age groups are most likely associated with greater seniority in the field. Younger people (under 30) represent a smaller proportion (6%). (table no. 1)

**Table no. 2. Age of respondents**

Category	Frequency (N)	Percentage (%)
Under 5 years of experience	18	6.0%
6-10 years	48	16.0%
11-20 years	126	42.0%

Over 20 years	108	36.0%
Total	300	100.0%

*Source:* developed by the authors

The graph represents the seniority of the respondents, divided into four categories: 6% have less than 5 years of experience; 16% have between 6 and 10 years of experience; 42% have between 11 and 20 years of experience; and 36% have over 20 years of experience. The majority of respondents have significant experience in the educational field, with 42% of them having between 11 and 20 years of experience and 36% with more than 20 years of experience. This distribution suggests that a large percentage of participants are experienced teachers, which may influence their perspectives on the use of AI in education. Older respondents are generally more familiar with traditional teaching methods, and adopting new technologies such as AI may require a greater adaptation effort for this category. On the other hand, those with less experience (under 5 years, 6%) may be more open to adopting technological innovations (table no. 2).

**Table no. 3. Level of familiarity of teachers with Artificial Intelligence (AI)**

Category	Frequency (N)	Percentage (%)
Slightly familiar with AI	105	35.0%
Moderately familiar with AI	135	45.0%
Very familiar with AI	60	20.0%
Total	300	100.0%

*Source:* developed by the authors

According to the data in the graph, 65% of respondents are moderately or very familiar with AI, which shows a good level of knowledge of this technology. This familiarity may be the result of an increasing tendency to integrate emerging technologies in education, along with an increase in educational resources and courses for teachers (table no. 3).

**Table no. 4. Use of AI in teaching-learning activities**

Category	Frequency (N)	Percentage (%)
Does not use AI	45	15.0%
Uses occasionally	120	40.0%
Uses frequently	135	45.0%
Total	300	100.0%

*Source:* developed by the authors

More than 60% of respondents use AI occasionally or frequently in educational activities. This highlights that AI is starting to play an important role in teaching activities, most likely due to the increased access to educational platforms and tools that integrate AI (e.g. learning management systems, and automated assessment platforms). (table no. 4)

**Table no. 5. Perception of improving the teaching process with AI**

Category	Frequency (N)	Percentage (%)
AI improves the process a little	75	25.0%
AI improves moderately	135	45.0%
AI improves a lot	90	30.0%
Total	300	100.0%

Source: developed by the authors

About 75% of respondents believe that AI can moderately or greatly improve the teaching process, reflecting optimism about using technology to make teaching more efficient. AI can facilitate interactive learning methods by providing access to personalized content and digital resources that support innovative teaching (table no. 5).

**Table no. 6. AI's ability to personalize the learning experience**

Category	Frequency (N)	Percentage (%)
AI personalizes a little	120	40.0%
AI personalizes moderately	90	30.0%
AI personalizes completely	90	30.0%
Total	300	100.0%

Source: developed by the authors

60% of participants believe that AI can greatly or completely personalize the learning experience. This is to be expected, as AI can analyze student data and provide personalized learning paths so that students can progress at their own pace, an extremely valuable aspect of modern education. (table no. 6)

**Table no. 7. Facilitating automated assessment and feedback through AI**

Category	Frequency (N)	Percentage (%)
Automated assessment slightly facilitated	105	35.0%
Automated assessment moderately facilitated	120	40.0%
Automated assessment very facilitated	75	25.0%
Total	300	100.0%

Source: developed by the authors

About 65% of respondents believe that AI moderately or greatly facilitates automated assessment and rapid feedback. This result reflects the obvious advantages of AI, such as the efficiency and speed of assessment, especially in grid tests or other standardized forms of examination. These systems can greatly reduce the time required to mark papers by providing immediate feedback to students. (table no. 7)

**Table no. 8. The influence of AI on student motivation**

Category	Frequency (N)	Percentage (%)
AI has little influence	150	50.0%
AI has a moderate influence	90	30.0%
AI has a lot of influence	60	20.0%
Total	300	100.0%

Source: developed by the authors

Only 50% of respondents believe that AI moderately or strongly influences student motivation. This result suggests that although AI can help personalize the learning experience, the technology is not yet powerful enough to increase students' intrinsic motivation. Student motivation is influenced by complex factors, such as interaction with teachers and peers, which cannot be completely replaced by AI. (table no. 8)

**Table no. 9. The possibility of replacing traditional assessment methods with AI**

Category	Frequency (N)	Percentage (%)
AI can slightly replace traditional methods	90	30.0%
AI can moderately replace traditional methods	120	40.0%
AI can greatly replace methods	75	25.0%
AI completely replaces traditional methods	15	5.0%
Total	300	100.0%

*Source:* developed by the authors

70% of respondents believe that AI can partly or largely replace traditional assessment methods. However, only 10% believe in a complete replacement. This reflects the fact that while AI can handle standardized assessments and streamline feedback, qualitative assessments or those involving creativity and critical thinking still require human intervention. (table no. 9)

**Table no. 10. The main disadvantages of using AI in education**

Category	Frequency (N)	Percentage (%)
Loss of human interaction	120	40.0%
Overreliance on technology	105	35.0%
Other disadvantages	75	25.0%
Total	300	100.0%

*Source:* developed by the authors

40% of respondents indicated the loss of human interaction as the main disadvantage, while 35% highlighted the risk of over-reliance on technology. These percentages reflect legitimate concerns about the possibility of social alienation and dependence on automated technologies, which could diminish the personal and emotional interaction between teachers and students – essential aspects of the educational process (table no. 10).

**Table no. 11. The level of preparation of teachers for the use of AI**

Category	Frequency (N)	Percentage (%)
Poorly trained teachers	90	30.0%
Moderately trained teachers	105	35.0%
Highly trained teachers	105	35.0%
Total	300	100.0%

*Source:* developed by the authors

65% of respondents believe that teachers are little or moderately prepared for the use of AI. This suggests a clear need for better structured and accessible training programs for teachers to equip them with the necessary skills to effectively use AI in learning and assessment (table no. 11).

**Table no. 12. The future impact of AI on education**

Category	Frequency (N)	Percentage (%)
Increased efficiency and productivity	105	35.0%
Personalization of learning	90	30.0%
Other benefits	105	35.0%
Total	300	100.0%

*Source:* developed by the authors

The biggest perceived impact is increased efficiency and productivity (35%) and personalization of learning (30%). These percentages highlight the directions in which AI can transform education in the future, automating repetitive tasks and providing solutions more tailored to each student, thus allowing teachers to focus on the more complex and creative aspects of education (table no. 12).

### Conclusions

Based on the results of this study, Artificial Intelligence has significant potential to transform education, particularly in personalizing learning and automating assessment processes. Most respondents believe that AI can make important improvements in teaching and learning, particularly by providing fast and personalized feedback and facilitating more effective student progress. However, the results also revealed concerns about technology dependency and the impact on interpersonal relationships, underscoring the need for a balanced approach.

In addition to the positive aspects, the results of the study suggest that a significant number of respondents are concerned about the loss of human interaction in the educational process. This concern is justified given the importance of social and emotional relationships in education. Human interaction is not only a social component but also essential to the development of students' social and emotional skills, which are fundamental to their long-term success.

Another significant aspect that emerged from the study is the need to train teachers in the use of AI. The results showed that many teachers do not feel sufficiently prepared to integrate these technologies effectively into their teaching activities. This suggests that educational institutions should invest in continuing education programs for teachers so that they feel comfortable and confident in using AI.

Furthermore, evaluating the use of AI in education should be an ongoing process with constant feedback from students and teachers. This feedback is essential to identify problems that may arise and to adapt AI implementation strategies to meet the real needs of the educational community. This continuous improvement approach will ensure that AI is used effectively and responsibly.

On the other hand, the main concerns regarding the use of AI relate to the risks of excessive reliance on technology and the reduction of human interaction in the



educational process. Teachers believe that the use of AI could affect social and emotional relationships, which are fundamental elements of a holistic education. In conclusion, the general perceptions highlight that AI has an increasingly important role in education, but its adoption requires a balanced approach. It is essential to invest in teacher training and to set clear limits for the use of technology, so as to maximize the benefits without neglecting the human aspects of education. AI is seen as a complementary tool, not a substitute for traditional practices, and the future of education depends on how we manage to harmonize technological innovation with the fundamental values of the learning process.

## References

- [1] Akerkar, R., 2019. Artificial Intelligence for Business. Western Norway Research Institute. Springer Briefs in Business. Sogndal, Norway.
- [2] Albrecht, S. L., Connaughton, S., Foster, K., Furlong, S., and Yeow, J. 2020. Change engagement, change resources and change demands: a model for positive employee orientations to organizational change. *Front. Psychol.* 11:531944. doi: 10.3389/fpsyg.2020.531944.
- [3] Ashforth, B. E. 2020. Identity and identification during and after the pandemic: How might COVID-19 change the research questions we ask?. *Journal of Management Studies.* 57(8), 1763– 1766.
- [4] Beer, M., 2021. Reflections: towards a normative and actionable theory of planned organizational change and development. *J. Chang. Manag.* 21, 14–29. doi: 10.1080/14697017.2021.1861699.
- [5] Ford, J., Ford, L., and Polin, B., 2021. Leadership in the implementation of change: functions, sources, and requisite variety. *J. Chang. Manag.* 21, 87–119. doi: 10.1080/14697017.2021.1861697.
- [6] Hakonsson, D. D., Klass, P., & Carroll, T., N., 2012. The structural properties of sustainable, continuous change: Achieving reliability through flexibility. *The Journal of Applied Behavioral Science.* 49(2), 179–205.
- [7] Hanage, W-P., Brownstein, J-S., Layan, M., Vespignani, A., Tian, H., Dye, Ch., Pybus, O-G., Scarpino, S-V., 2020. The effect of human mobility and control measures on the COVID-19 epidemic in China, *Science.* 368(6490), pp. 493-497. DOI: 10.1126/science.abb4218.
- [8] Kopka A., Grashof N., 2022. Artificial intelligence: catalyst or barrier on the path to sustainability?. *Technol. Forecast. Soc. Change,* 175(2022).
- [9] Liu, X. Wang, S. Wang, P. Wu, D., 2019. Automatic grading of programming assignments: An approach based on formal semantics. In *Proceedings of the 41st International Conference on Software Engineering. Software Engineering Education and Training.* Montreal, QC, Canada, pp. 126–137.
- [10] Maloku D., Balogh P., Bai A., Gabnai Z., Lengyel P. 2020. Trends in scientific research on precision farming in agriculture using science mapping method. *Int. Rev. Appl. Sci. Eng.,* 11(3), 232–242.
- [11] Martinez, J.A. Broemmel, A.D., 2021. Pencils down: Educators respond to the uncertainty amidst COVID-19 school closures. *Int. Stud. Educ. Adm. (Commonw. Counc. Educ. Adm. Manag. (CCEAM)),* 49, 109–132.

- [12] Millar, C., Hind, P., Magala, S., 2012. Sustainability and the need for change: organisational change and transformational vision. *Journal of Organizational Change Management*. vol. 25(4), pp. 489-500.
- [13] Mislevy, R.J. Yan, D. Gobert, J. Sao Pedro, M., 2020. Automated scoring in intelligent tutoring systems. In *Handbook of Automated Scoring*. Yan, D., Rupp, A.A., Foltz, P.W., Eds.; Chapman and Hall/CRC: London, UK, pp. 403–422.
- [14] Tokhirov, R., Rahmonov, N., 2021. Technologies of using local networks efficiently. *Asian Journal Of Multidimensional Research*, 10(6), 250-254.
- [15] Toxirov, R. S., Raxmonov, N. R. O. G. L., 2021. Dasturiy Ta’Minot Yordamida Zamonaviy Boshqaruvni Tashkil Etish Istiqbollari. *Central Asian Academic Journal of Scientific Research*, 1(1), 181-186.