

# Education on AI Platform - Significance of AI Technology in Recent Education Journey

Dadaso N. Patil<sup>1</sup>; C. Kharat<sup>2</sup>

<sup>1</sup>Headmaster, Ajitrao Ghorpade Vidyalay, Kalambi Tal-Miraj, Dist-Sangli, Pincode-41610

<sup>2</sup>Assistant Teacher Ajitrao Ghorpade Vidyalay, Kalambi Tal-Miraj, Dist-Sangli, Pincode-41610

Publication Date: 2026/07/11

**Abstract:** Artificial Intelligence (AI) is transforming the educational landscape by enhancing traditional teaching and learning approaches, making them more personalized, efficient, and data-driven. Various AI-powered tools, including intelligent tutoring systems, adaptive learning platforms, automated grading systems, learning analytics, and virtual assistants, are improving the overall educational experience for both students and educators. These technologies enable the creation of customized learning paths aligned with individual student needs, boost engagement, provide timely feedback, and assist teachers in making informed instructional decisions. Additionally, AI is streamlining administrative tasks in schools and colleges, leading to more efficient operations and reduced workload. However, the integration of AI in education raises critical concerns such as data privacy, ethical use of AI, minimizing bias in outcomes, addressing the digital divide, and preventing over-reliance on technology. This paper explores the current applications of AI in education, its benefits, the associated challenges, and potential future developments. It also examines how responsible and equitable use of AI can contribute to creating more inclusive, accessible, and student-centred learning environments, while equipping students with the skills needed for the digital future.

**Keywords:** Artificial Intelligence, Education, Personalized Learning, Intelligent Tutoring Systems, Adaptive Learning, Learning Analytics, Educational Technology, Automated Assessment, Digital Learning, Higher Education.

**How to Cite:** Dadaso N. Patil; C. Kharat (2026) Education on AI Platform - Significance of AI Technology in Recent Education Journey. *International Journal of Innovative Science and Research Technology*, 11(7), 37-39.  
<https://doi.org/10.38124/ijisrt/26jul155>

## I. INTRODUCTION

Over the last five years, utilization of artificial intelligence in the field of academic era has expanded quickly alongside the development of new AI technologies [1]. A review of 138 studies reveals a significant surge since 2020, with an overall increase of 150% compared to the two preceding years, 2019–2020. This growth is probably due to the increased reliance on technology by educators during the pandemic lockdowns [1]. This transformation extends beyond enhancing efficiency.

AI-driven new technology in higher education have received research attention from 15 countries, with the United States, China, and Europe the most prominent contributors. The findings indicate that students' academic performance can improve by 15–25%, and their level of engagement can rise by up to 40% [2]. The incorporation of AI into educational systems represents a significant shift in teaching approaches, student participation, and institutional operations. It is crucial to examine how AI is being applied, its advantages, and the emerging challenges it presents.

Over the last five years, the integration of artificial intelligence (AI) in higher education has expanded quickly

alongside the development of new AI technologies [1]. A review of 138 studies reveals a significant surge since 2020, with an overall increase of 150% compared to the two preceding years, 2019–2020. This growth is probably due to the increased reliance on technology by educators during the pandemic lockdowns [1].

### ➤ Key Applications of AI in Higher Education

Studies have identified five primary areas where AI is applied in higher education. These areas include:

- Assessment and Evaluation
- Predictive Analysis
- AI Assistant
- Intelligent Tutoring System (ITS)
- Managing Student Learning [1]

AI assists educators in developing questions and creating multiple-choice exams. Researchers have utilized natural language processing to develop a system capable of automatically generating tests, and they discovered that AI can produce highly realistic short-answer questions [1].

### ➤ Predictive Analysis is One of the Most Widely Used Applications of AI in Higher Education:

With 21 studies examining how AI can forecast trends from data. Of these, nine studies focused on predicting student-related outcomes. One study analyzed students enrolled in a MOOC course and used AI to predict their future grades. Researchers input 17 different learning-related factors, such as previous grades, into an artificial neural network. The system was able to predict students' grades and also identify those at risk of dropping out [1].

Intelligent Tutoring Systems (ITS) are instructional tools that leverage AI and educational techniques to customize learning activities and strategies according to a student's individual characteristics and needs [1].

#### ➤ *Personalized Learning Pathways and Student Outcomes*

Significant transformation of education can achieve by deployment of AI in teaching and learning method. These systems help identify students' knowledge levels, offer appropriate activities, and allow learners to progress at their own pace. Intelligent mentors and tools develop customized learning paths based on individual needs, preferences, and prior knowledge. Educators can also leverage machine learning to analyze student performance data, forecast future outcomes, and monitor progress [3].

A study conducted over a school term demonstrated that using AI for personalized instruction led to improved learning results. Students who participated in this approach saw their academic performance increase from 74.2 to 87.1, their level of engagement rise from 3.3 to 4.5, and their satisfaction score improve from 3.8 to 4.7. The AI-driven course also achieved much higher completion rates (89.72%), better retention (91.44%), and lower dropout rates (4.98%) compared to conventional teaching methods [5].

#### ➤ *Generative AI and Psychological Well-Being*

Recent advancements in generative AI have introduced new methods that support education. This type of AI significantly impacts students' level of engagement, their intrinsic motivation to learn, and their confidence in communication. It also helps lower anxiety related to language use, particularly by offering personalized feedback and tailored conversations. These Students have to adopt various learning, foster independence, and cultivate a growth-oriented mindset.

Learning environments that incorporate AI address the psychological needs of learners by enhancing feelings of competence, autonomy, and social connection. This results in more sustained motivation and improved learning outcomes [6]. Unlike interactions with teachers or peers, conversations with AI chatbots occur in a non-judgmental setting, creating a more relaxed and comfortable atmosphere. This is especially beneficial for students who experience significant anxiety when speaking a language[6].

#### ➤ *Implementation Challenges and Ethical Considerations*

In this AI era, education has the main resource to increase new technology mindset into student. The readiness of educational institutions to adopt mainly, AI plays the very effective role in between developed and developing

countries. In well-funded regions, AI has been successfully integrated into teaching practices. Still, many universities in Southeast Asia face challenges due to inadequate infrastructure, a shortage of trained personnel, and weak institutional policies. Systemic issues such as limited financial resources, outdated facilities, and insufficient training continue to pose major obstacles [7].

For AI to function effectively in education, it must provide users with control and mechanisms for feedback, allowing students and teachers to adjust and evaluate AI-generated recommendations. Privacy and ethical considerations must be addressed throughout the entire data-handling process[4].

Tools such as learning analytics, smart tutoring systems, automatic grading, and generative AI are often celebrated for their ability to personalize learning, increase efficiency, and improve scalability. However, research indicates that these tools can also introduce bias, impact fairness, and influence how teaching and ethical standards are approached. Predictive models often benefit students with stronger language or digital skills, while tutoring systems can struggle to adapt to different cultural contexts[8].

The advantages of AI in education include reducing learning pressure, promoting student autonomy, offering customized learning experiences, and delivering timely feedback. Nevertheless, there are also risks, such as over-reliance on technology, reduced critical thinking, inaccurate information, privacy concerns, and cultural or language biases within AI systems [6].

## II. RESEARCH TRENDS AND FUTURE DIRECTIONS

Colleges of education accounted for 28% of the affiliations, followed by computer science at 20%, yet there is limited research being conducted in developing countries. More studies are needed in these areas to better understand how AI can support learning in communities with fewer resources. When researchers from different academic backgrounds collaborate, it can enhance understanding of how AI is applied across various subjects. Most of the research has been conducted at the undergraduate level, with limited attention given to how AI can assist teachers and administrators in higher education.

Existing studies primarily show AI being used in conventional ways to enhance current teaching practices, rather than exploring innovative applications [1]. AI-PL research is predominantly found in Asia, particularly in China, and is mostly associated with education and computer science. While many studies are influenced by constructivist theories, having clear theoretical frameworks helps integrate AI with teaching approaches and enhances educational outcomes.

However, there is little focus on issues of fairness and objectives related to the Sustainable Development Goals [9]. The effectiveness of AI in education depends on the

preparedness of teachers, the compatibility of AI with teaching strategies, and the presence of strong ethical guidelines. Concerns regarding data privacy and biased algorithms remain significant challenges. Research indicates that AI primarily contributes to academic performance by supporting the teaching and learning process, rather than just automating tasks[10].

### III. CONCLUSION

Artificial intelligence is transforming higher education in significant ways by offering customized learning experiences, assisting with administrative duties, predicting student performance, and providing intelligent tutoring support. In all education institute, student must be flexible to use these AI tools for best satisfaction due to their own learning process. They also support educators in both teaching and managing the institution [4].

However, the future of education is shifting toward a more inclusive, human-centred, and ethical approach known as Education 5.0. This new model integrates AI, machine learning, emotional intelligence, and sustainability to create more equitable and comprehensive learning environments [11].

Colleges and universities must prioritize the responsible use of AI through robust ethical guidelines, teacher training, and inclusive design practices. As AI continues to evolve, the future of higher education will depend on the thoughtful integration of these technologies in a way that complements—rather than replaces—human teachers. This approach ensures equitable access, ethical use of AI systems, and a lasting dedication to high-quality teaching in an increasingly digital world.

### REFERENCES

- [1]. Helen Crompton, D. B. (2023). Artificial intelligence in higher education: the state of the field. *International Journal of Educational Technology in Higher Education*. <https://doi.org/10.1186/s41239-023-00392-8>
- [2]. Thanet Yuensook, T. J. P. L. (2025). AI-Driven Adaptive Learning Systems in Higher Education: A Systematic Review. *Journal of Education and Learning*. <https://doi.org/10.5539/jel.v15n2p117>
- [3]. Olga Tapalova, N. Z. (2022). Artificial Intelligence in Education: AIED for Personalised Learning Pathways. *The Electronic Journal of e-Learning*. <https://doi.org/10.34190/ejel.20.5.2597>
- [4]. Xu, X. (2025). AI optimization algorithms enhance higher education management and personalized teaching through empirical analysis. *Scientific Reports*. <https://doi.org/10.1038/s41598-025-94481-5>
- [5]. Thai Son Chu, M. A. (2025). Artificial Intelligence in Curriculum Design: A Data-Driven Approach to Higher Education Innovation. *Knowledge*. <https://doi.org/10.3390/knowledge5030014>
- [6]. O. Gulich, V. C. (2025). Generative artificial intelligence as a tool for psychological and motivational support in foreign language learning. *Educational Challenges*. <https://doi.org/10.34142/2709-7986.2025.30.2.19>
- [7]. Anderias Henukh, A. U. K. R. I. (2025). From Promise to Practice: Systemic Factors Influencing AI Adoption in Higher Education. *Jurnal Fisika Terapan Dan Inovasi Indonesia*. <https://doi.org/10.61978/jftii.v1i1.579>
- [8]. Huang, S. (2025). AI in Education: A Critical Review of Applications, Bias, and Equity Challenges. *Advances in Engineering Technology Research*. <https://doi.org/10.56028/aetr.15.1.1679.2025>
- [9]. Jun Peng, Y. L. (2025). Frontiers of Artificial Intelligence for Personalized Learning in Higher Education: A Systematic Review of Leading Articles. *Applied Sciences*. <https://doi.org/10.3390/app151810096>
- [10]. Kaur, D. (2026). Role of AI in Enhancing Teaching Learning Processes and Academic Performance. *International Journal for Multidimensional Research Perspectives*. <https://doi.org/10.61877/ijmrp.v4i2.308>
- [11]. Seema More, D. G. (2025). AI-Enhanced Higher Education: Building Adaptive, Ethical, and Inclusive Models for Education 5.0 – Review. *International Journal of Scientific Research in Engineering and Management*. <https://doi.org/10.55041/ijserm55545>
- [12]. Marat Zhumashev, A. B. A. K. A. S. S. K. (2025). A systematic review (2010–2024) of smart textbooks and intelligent tutoring systems: Models, methods, subjects, and geographies. *International Journal of Innovative Research and Scientific Studies*. <https://doi.org/10.53894/ijirss.v8i6.10048>
- [13]. Florine Hoogers, C. T. J. M. (2026). Artificial Intelligence in Blended Learning for Higher Education: A Systematic Literature Review (2020–2025). *IGI in Education Insight*. <https://doi.org/10.53905/edu.v1i01.07>
- [14]. Muhammad Ali Chaudhry, E. K. (2021). Artificial Intelligence in Education (AIED): a high-level academic and industry note 2021. *AI and Ethics*. <https://doi.org/10.1007/s43681-021-00074-z>