Education Reform and Development, 2026, Volume 8, Issue 1
https://ojs.bbwpublisher.com/index.php/ERD
Online ISSN: 2652-5372
Print ISSN: 2652-5364

From Learning to Life, The Practical Application and Impact of AI Technology Among Student Groups

Ziyi Jiang, Wenjun Wang, Wei Liu*

Shanghai Maritime University School of Economics and Management, Shanghai 200135, China

**Author to whom correspondence should be addressed.*

Abstract: With the rapid development of artificial intelligence technology, AI is gradually penetrating into students' learning and daily lives, exerting a profound impact on learning methods and concepts. Taking the actual usage scenarios of student groups as the entry point, this paper analyzes the application of AI in knowledge acquisition and understanding, the improvement of autonomous learning ability, and the construction of human-machine collaborative learning models. The research holds that the rational application of AI technology helps alleviate learning difficulties, improve learning efficiency, and enhance students' sense of subjectivity in learning. At the same time, the application of AI has also promoted the transformation of students' role cognition and learning concepts to a certain extent. On the basis of affirming its practical value, this paper conducts necessary reflections on relevant issues, aiming to provide a reference for the scientific application of AI technology among student groups.

Keywords: Artificial intelligence; Student groups; Learning methods; Autonomous learning; Human-machine collaboration

Online publication: February 4, 2026

1. Introduction: Practical background and research significance of AI entering students' daily lives

In recent years, artificial intelligence technology has rapidly penetrated into many scenarios of learning and life, and student groups are among the earliest and most frequent users. Different from previous information technologies mainly serving teaching management or classroom demonstrations, current new-type tools represented by generative artificial intelligence have directly intervened in students' learning processes and changed the way students acquire knowledge and solve problems to a certain extent.

Some scholars believe that artificial intelligence has not weakened the value of university education, but has transformed students from passive knowledge recipients to active explorers and problem-oriented learners [1]. A survey shows that college students generally recognize the application prospects of AI, but their understanding of

its functions is still at a shallow level, which also indicates the importance of rational use [2].

In addition, the impact of AI is not only on academic performance. With the expansion of application scenarios, AI has gradually entered students' time planning, information screening, and development planning, thus exerting a continuous impact on learning methods and life rhythms. Therefore, starting from the perspective of students and focusing on the practical application of AI in learning and life, this paper mainly analyzes its positive value and conducts rational reflections on this basis.

2. AI application in learning scenarios: Transformation from "Efficiency tool" to "Cognitive support"

2.1. AI-assisted knowledge acquisition and understanding: Alleviating learning difficulties and improving learning efficiency

First, the application of AI in "instant Q&A" has greatly reduced students' understanding pressure. The learning method of "asking and answering at any time" breaks the constraints of time and space, allowing students to initially digest knowledge blind spots during self-study. Research shows that timely feedback has a significant impact on learning effects, which can effectively reduce learning frustration and increase the willingness to continue learning [3].

In addition, AI's reorganization of knowledge and multi-modal presentation of knowledge can deepen students' understanding of abstract content. Relevant studies have proven that multi-channel information input can improve learners' cognitive processing effects and has a positive impact on meaningful learning [4]. This is more obvious in learning such as science and engineering formula derivation, and liberal arts theory collation.

Furthermore, the role of artificial intelligence technology in improving learning efficiency has begun to emerge. Some scholars believe that data-based learning support models can reduce the time students spend on ineffective repetitive learning, enabling a more reasonable allocation of limited learning time [5].

2.2. AI and the improvement of autonomous learning ability: From passive acceptance to active construction

First, artificial intelligence technology provides feasible learning scaffolding for students' autonomous learning. Students can independently set learning tasks according to their own learning progress and goals through intelligent learning platforms or conversational AI. Research shows that when learners participate in the formulation of learning goals and paths, their learning motivation and effects are more significant [6].

Second, the function of artificial intelligence in guiding students to think actively and construct knowledge has been reflected. Unlike traditional auxiliary tools that provide standard answers, some AI systems guide students to improve their understanding step by step through questioning, prompting, or example comparison. Some scholars believe that the essence of learning is not the simple reception of information, but the process of learners actively constructing meaning [7].

Finally, artificial intelligence technology has opened up new ways for students to reflect on learning. Sorting out and analyzing the learning process and results enables students to review their learning process, identify frequent errors or cognitive biases, thereby promoting students to form self-monitoring and self-regulation abilities. Research shows that learners with better metacognitive abilities generally adjust learning strategies better, thus achieving better long-term learning effects [8].

2.3. The formation and significance of human-machine collaborative learning models

In terms of the learning process, human-machine collaborative learning is complementary in division of labor. Students are still the main body of learning. In the process of course learning or thesis writing, students can use AI to quickly obtain background materials and organize logical frameworks, thereby focusing more energy on forming viewpoints and deepening thinking. Some scholars believe that reasonable human-machine collaboration can significantly reduce the cognitive load in the learning process, allowing learners to focus on higher-order cognitive activities [9].

One of the core characteristics of the human-machine collaborative learning model is interactivity. The learning process of AI's real-time response and dynamic adjustment is more flexible. The learning mechanism of real-time dialogue and immediate correction can shorten the time of learning feedback and improve learning efficiency. Relevant studies have shown that timely and effective feedback is one of the important factors to improve learning effects [10].

In addition, the human-machine collaborative learning model has changed students' cognitive boundaries of tools to a certain extent. AI has gradually become an external support system for promoting thinking and reflection. In the process of use, students continuously judge the rationality and applicability of AI output content, which is itself a kind of thinking training.

3. AI application in life and development scenarios: A practical manifestation of students' "Intelligent life governance"

3.1. The application of AI in learning and life management: Time planning and information screening

In terms of time planning, AI does not simply make decisions for students, but provides reference suggestions by analyzing the priority of learning tasks. Students still need to make judgments and adjustments based on their own actual situations, and this process itself also strengthens their reflective ability in time management. Studies have pointed out that the positive role of technical tools in learning management is often reflected in supporting learners' self-regulation abilities, rather than directly replacing their decision-making processes [11].

At the same time, AI's advantage in information screening is particularly prominent. Faced with a large number of fragmented learning resources, students are prone to the dilemma of "having a lot of information but not knowing where to start". Through keyword extraction, content summarization, and key point annotation, AI helps students quickly grasp the core of information. Relevant surveys show that students have a high acceptance of AI in information sorting and screening, and generally believe that it can improve learning concentration and efficiency [12].

3.2. AI and students' career cognition and employment preparation

In terms of career cognition, AI can help students more intuitively understand the development directions of different occupations through a comprehensive analysis of job information, industry trends, and skill requirements. Studies have pointed out that data-driven career information support can effectively alleviate students' confusion in career choices and enhance their decision-making confidence [13].

At the level of employment preparation, the application of AI is more specific and direct. Through structured analysis and optimization suggestions on resume content, AI can help students present their advantages more accurately, avoiding information redundancy or unclear focus. At the same time, the simulated interview function

based on virtual scenarios provides students with low-cost and high-frequency practice opportunities, enabling them to gradually improve their expression and adaptability through repeated attempts.

It should be noted that the role of AI in employment preparation is more inclined to "auxiliary support" rather than replacing students' subjective judgments. When using AI tools, students still need to make rational choices based on their own interests and practical conditions. As some scholars have emphasized, the improvement of employment quality in the context of artificial intelligence depends on the collaboration between personal ability accumulation and external support, rather than the intervention of a single technical means.

3.3. Rational boundaries in AI use: Balancing life convenience and ability cultivation

From the perspective of life convenience, AI has significantly reduced students' time and energy costs in information integration, task reminders, and plan generation. However, if AI is regarded as the "default answer provider" and excessive reliance is placed on its conclusions while ignoring the thinking process, it is easy to lead to the superficialization of learning behaviors. Studies have pointed out that when generative AI assists learning, the lack of appropriate guidance may trigger the phenomenon of "cognitive outsourcing", which harms the cultivation of higher-order thinking abilities [14].

At the level of ability cultivation, the key is not whether to use AI, but "how to use it". Regarding AI as the starting point rather than the end of thinking can avoid dependence risks to a certain extent. By questioning, revising, and reprocessing AI output content, students can instead strengthen the depth of understanding and judgment ability in interaction.

4. Impact and reflection on AI application

4.1. Impact on learning methods and thinking structures

In terms of learning methods, the intervention of AI has transformed students' learning methods from those dominated by memory and repetition to those dominated by understanding, integration, and application. With the help of AI tools, students can quickly obtain basic information and use limited learning time more on constructing connections between concepts and analyzing problems.

In terms of thinking structures, the use of AI places new requirements on students' cognitive styles. Faced with various answers provided by AI, students need to screen, compare, and judge before forming a more open and diverse thinking structure, prompting students to view problems from different angles.

4.2. Impact on students' role cognition and learning concepts

In terms of role cognition, the addition of AI has made students no longer rely on a single authoritative source of knowledge. Students can use AI to expand their learning boundaries, independently raise questions and find answers. This learning method strengthens students' awareness as the main body of learning.

In terms of learning concepts, the use of AI has gradually enabled students to form a process-oriented learning concept. Compared with the traditional result-oriented learning method, AI pays more attention to the process of exploration, revision, and reflection in learning. In the process of continuous interaction with AI, students gradually find that learning is not completed at one time, but a dynamic process that can be continuously improved.

At the same time, the widespread application of AI has also made students begin to rethink the relationship between effort and tools. Using AI to complete learning tasks does not mean reducing learning investment, but

making judgments and choices at a higher level. Some scholars believe that the rational use of intelligent tools can liberate learners from repetitive labor, allowing them to focus more on creative and critical thinking [15]. In this sense, the use of AI has not weakened the value of learning, but has put forward higher requirements for learning.

5. Conclusion

In general, AI technology has been integrated into students' learning and daily lives in a relatively natural way. Its impact is not limited to the tool level, but gradually penetrates into deeper structures such as learning methods, learning roles, and learning concepts. With the help of AI to assist knowledge acquisition, promote autonomous learning, and create human-machine collaborative learning models, students not only reduce learning difficulties and improve learning efficiency but also gain more initiative and choices in learning. This process has verified the academic basic judgment that AI empowers rather than replaces learning subjects in practice.

From the perspective of practical effects, the rational use of AI has improved students' learning experience to a certain extent, making the learning process more personalized, continuous, and adjustable. Relevant studies have shown that generative AI has a significant positive impact on students' academic performance and learning efficiency, which is more obvious for students with poor learning foundations or strong learning adaptability. It also shows that AI is not a panacea to simply narrow the learning gap, but a tool that is correctly guided and used in specific scenarios.

Of course, the application of artificial intelligence to student groups does not mean ignoring the potential problems of students. How to prevent excessive dependence on intelligent tools and maintain the ability of independent thinking while using AI are still issues that students constantly reflect on in practice. As pointed out in relevant studies, only when learning goals are clarified and subject awareness is strengthened, can artificial intelligence truly play a role in promoting students' learning.

Therefore, it is inappropriate to regard AI as an impact on traditional learning methods; instead, it should be seen as an opportunity for students to re-recognize the essence of learning. On the basis of reasonable guidance and standardized use, AI can become a capable assistant in students' learning and growth process, providing realistic possibilities for creating an open, efficient, and flexible learning ecology.

Funding

Municipal Project of National College Students' Innovation and Entrepreneurship Training Program, "Academic Career Intelligent Companion—Application and Promotion of Learning-Assisted AI Tools" (Project No.: S20250416)

Disclosure statement

The authors declare no conflict of interest.

References

[1] Cai J, 2025, What Should Universities Teach in the Age of Artificial Intelligence? From AI-Enabled Teaching to AI-

Reconstructed Education. Journal of Tianjin Foreign Studies University, 2025: 1–9.

[2] Li R, Zhu R, Chen L, et al., 2025, Collaborative Classroom of "Student-Peer-AI-Teacher" in the Age of Artificial Intelligence: Feynman Learning Method-Driven Teaching Reform in Physical Chemistry. University Chemistry, 2025: 1–10.

[3] Tang W, Zhou X, Zhao Y, 2025, Research on AI Empowering Teachers' Intelligent Teaching. The Science Education Article Collects, 2025(24): 20–23.

[4] Liu L, 2025, Research on Countermeasures for AI Empowering the Improvement of Vocational College Students' Job-Hunting Abilities——Taking Hebei Tourism Vocational College as an Example. Journal of Hebei Tourism Vocational College, 30(04): 108–112.

[5] Lin H, 2025, Research on Strategies for Improving College Students' Employment Quality in the Age of Artificial Intelligence. Qinzhi, 2025(12): 31–33.

[6] Deng C, Li Y, Zhang X, et al., 2025, Research on the Impact Mechanism of Technical Perception Characteristics on College Students' Information Literacy Level in AIGC-Assisted Learning Scenarios. Journal of Modern Information, 2025: 1–13.

[7] Wan M, Jiang M, Lü P, et al., 2025, The Impact of Generative Artificial Intelligence on College Students' Academic Performance——Heterogeneous Treatment Effects Based on Generalized Random Forest Model. Journal of Zhejiang Sci-Tech University (Social Sciences Edition), 54(06): 766–778.

[8] Li X, Zheng Y, Chen M, et al., 2025, Investigation and Countermeasure Analysis of College Students' Cognition and Attitude Towards AI. Modern Business Trade Industry, 2025(23): 55–57.

[9] Zhuang L, Zhu Q, Tang Y, et al., 2025, Research on AI Empowering College Students' Ideological and Political Education. University Education, 2025(33): 81–84.

[10] Yin F, 2025, Research on the Current Situation, Problems and Countermeasures of College Students' Learning Methods in the Digital Intelligence Era, thesis, Qufu Normal University.

[11] Zhang S, 2024, Research on the Design of College Students' Blended Learning Oriented by Higher-Order Thinking, thesis, Yunnan Normal University.

[12] Liu D, 2023, Research on Intelligent Teaching of College Students' Ideological and Political Education, thesis, Southwest University.

[13] Zhong Z, 2023, Research on the Construction and Application of Intelligent Learning Models Supported by Artificial Intelligence, thesis, Northeast Normal University.

[14] Pan S, 2022, Research on Improving College Students' Learning Abilities in the "Internet + Education" Era, thesis, Xi'an University of Technology.

[15] Chen W, 2012, Research on the Future Classroom from the Perspective of Educational Technology, thesis, East China Normal University.