

A Brief Discussion on Empowering Education in the Era of Artificial Intelligence

Youyuan Yu^{1, a}

¹Hangzhou Chovan Century City Experimental School, Hangzhou, China

^a380092096@qq.com

Abstract. With the rapid development of artificial intelligence technology and its wide application in various fields, the education sector has also ushered in an important opportunity for intelligent transformation. Artificial intelligence is reshaping the traditional education model by providing personalized learning, intelligent evaluation, and optimal allocation of educational resources, and offering new ideas for addressing educational equity and improving educational quality. This study starts from the connotation and significance of artificial intelligence empowering education, explores its impact on modern education and possible paths for future development, and at the same time deeply analyzes the challenges faced in the process of artificial intelligence empowering education. The empowerment of education by artificial intelligence not only brings about efficiency improvements and technological advancements, but more importantly, it provides significant support for the innovation of educational models and the transformation of talent cultivation methods. However, while enjoying the dividends of technology, it is also necessary to be vigilant against the toolization tendency, adhere to the essence and original intention of education, and seek a balance point between technological progress and humanistic care. In the future, the empowerment of education by artificial intelligence will continue to deepen and develop, and provide new possibilities for building a fairer, warmer and more dynamic education ecosystem.

Keywords: Artificial intelligence; Intelligent education; Personalized learning; Technology and Education

1. Introduction

With the rapid development of information technology, Artificial Intelligence (AI) is changing various fields at an unprecedented speed and depth [1], and education is no exception. From intelligent teaching assistants to personalized learning systems, from educational data mining to virtual reality technology, artificial intelligence is reshaping the traditional education model and injecting new vitality into modern education. This transformation not only brings about the improvement of efficiency and the advancement of technology, but also provides new possibilities for educational equity, lifelong learning and human-machine collaboration.

However, while technological progress brings about boundless opportunities, it is also necessary to carefully consider: How exactly can artificial intelligence empower education? In what aspects is its core value reflected? Then how can a balance be struck between technology and humanity? These issues are directly related to the development direction and ultimate effectiveness of educational intelligence.

1.1 The Development Background of Artificial Intelligence Empowering Education. Since the 21st century, a new wave of technological revolution has swept the world. As one of the core driving forces, artificial intelligence is reshaping all walks of life in society [2]. The field of education not only serves as a promoter of artificial intelligence technology but also is one of the core radiation areas of its influence. The application scope of intelligent technology is constantly expanding, from learning analysis, teaching management to teacher-student interaction, and even to the allocation of educational resources. Artificial intelligence has permeated every aspect of education.

Meanwhile, the in-depth advancement of globalization and informatization has made the imbalance of educational resources increasingly prominent. High-quality educational opportunities are concentrated among a few people, and there are significant differences in the distribution of

educational resources. These phenomena have prompted society to start thinking about how to optimize resource allocation and narrow the educational gap with the help of technological means. Against this backdrop, artificial intelligence has become an important means to solve these problems.

1.2 The Core Connotation of Artificial Intelligence Empowering Education. The technological development of artificial intelligence can clearly provide intelligent tools and platforms for education, making personalized learning and intelligent evaluation possible. At the same time, with the support of data-driven box technology, it can make educational decisions more scientific and precise. Therefore, it can be said that artificial intelligence can drive the innovation of the teaching model, making it possible to shift from the traditional "teacher-centered" to the "student-centered" reform, and promoting the construction of a learning ecosystem featuring collaboration between teachers and students as well as mutual assistance among students.

More importantly, the empowerment of education by artificial intelligence is not merely a technological innovation; its deeper significance lies in the fundamental changes it brings to educational concepts and methods. It not only enhances educational efficiency but also, to a certain extent, achieves a fair distribution of educational resources, providing each learner with a growth path that suits them.



Figure1. AI in education

1.3 The Significance of Artificial Intelligence Empowering Education. Artificial intelligence empowering education has profound social value and practical significance. First of all, at the social level, it provides new ideas and technical support for solving the problem of unbalanced educational resources. Through the application of intelligent tools, high-quality educational resources can break through the limitations of time and space and reach more students in need, thereby promoting educational equity.

Secondly, at the individual level, artificial intelligence can help learners achieve personalized development. Based on data analysis and algorithm recommendation, the system can accurately identify each learner's knowledge mastery and learning characteristics, and provide them with customized learning plans. This approach not only enhances learning efficiency but also stimulates learning interest and improves learning outcomes.

Finally, at the overall social level, the empowerment of education by artificial intelligence provides significant support for cultivating the compound talents needed for the future development of society. With the assistance of AI technology, education can better transform from knowledge imparting to ability cultivation, helping students develop core qualities such as critical thinking, innovation ability and collaboration ability.

This article analyzes the advantages of artificial intelligence in empowering education, the hidden problems it contains, ethical discussions and suggestions. From the perspective of front-line educators, it briefly discusses the opportunities and challenges brought by artificial intelligence to the current education cause. Looking at it from a dialectical perspective, it contributes its own thoughts to creating an organic and mobile intelligent education environment.

2. Artificial Intelligence Empowers Education

The rapid development of artificial intelligence is profoundly transforming various fields of human society. In this technology-driven transformation, education is not only a place for knowledge transmission but also an experimental field where technological innovation and humanistic care are deeply integrated [3]. The process by which artificial intelligence empowers modern education is actually a fundamental reconstruction of the traditional education system. This reconstruction is not only reflected in the improvement of teaching efficiency and learning outcomes, but more importantly, it has achieved the innovation of educational concepts and the transformation of educational models. In this transformation, it is not only the support of technology for education, but also a return to the essence of education - enabling every learner to find a development path that suits them, making educational resources truly accessible to everyone, and making education the cornerstone of everyone's lifelong growth.

The process by which artificial intelligence empowers modern education is essentially an educational revolution that takes technology as a means and fairness and efficiency as its core pursuits. On the one hand, we should maintain confidence in new technologies and actively explore the possibility of their application in the field of education. On the other hand, it is also necessary to pay attention to the factors of human nature. While technological progress is advancing, do not forget the essence of education that aims to cultivate and achieve people. The education of the future is bound to be one that combines personalization and inclusiveness, attaches equal importance to efficiency improvement and humanistic care, and is a new educational paradigm that deeply integrates technology and humanity.

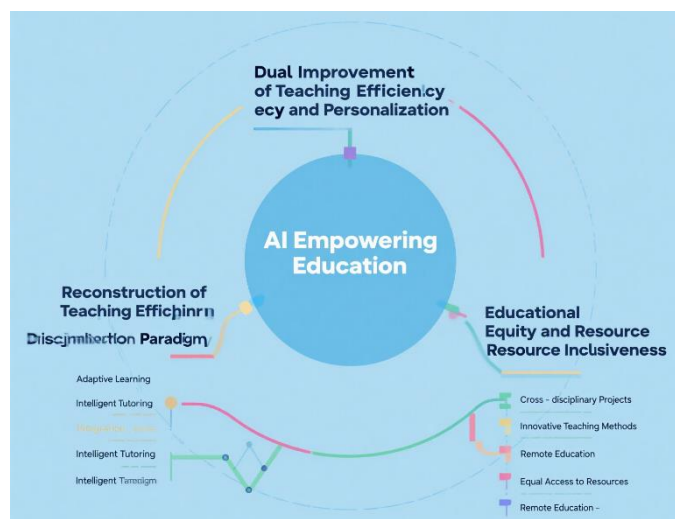


Figure 2. AI empowering education

2.1 Dual Improvement of Teaching Efficiency and Personalization. One of the most remarkable features of artificial intelligence is its powerful data processing capability. By collecting and analyzing various data of students during the learning process, including learning behaviors, knowledge mastery levels, and attention allocation, the AI system can accurately identify the unique needs and potential strengths of each student[4]. This kind of personalized demand analysis no longer remains at the theoretical level but can truly be applied in actual teaching.

Based on these data analysis results, artificial intelligence can customize an exclusive learning path for each student. This path is not fixed but a dynamic adjustment process. As students' learning behaviors change and their knowledge mastery improves, the system will automatically optimize the learning content and progress arrangement. Take mathematics learning as an example. The AI system can adjust the difficulty of the questions according to the depth of students' understanding. It neither makes students lose confidence because the questions are too difficult nor wastes time because the questions are too simple.

This personalized teaching mode not only improves the learning efficiency, but more importantly, it stimulates students' interest and initiative in learning. When the learning content happens to be in the students' "zone of proximal development", they can not only better understand and master the knowledge, but also gain the motivation for continuous learning in the sense of achievement. Artificial intelligence further enhances this positive learning experience through the design of real-time feedback and incentive mechanisms.

2.2 Disciplinary Integration and Reconstruction of Innovation Paradigms. The importance of interdisciplinary learning is becoming increasingly prominent in today's society. The traditional disciplinary boundaries can no longer meet the demand for versatile talents in modern society. Artificial intelligence offers the possibility of breaking down disciplinary boundaries. In a project on environmental protection, students need to apply natural science knowledge to understand the operation mechanism of ecosystems, analyze the impact of human activities on the environment with the help of social science research methods, and present research results through artistic expression.

With the support of AI technology, curriculum design can achieve true interdisciplinary integration. Learners are no longer confined to the knowledge framework of a single discipline, but are able to comprehensively apply knowledge from different fields in real problem situations. This learning mode not only enhances students' comprehensive thinking ability, but also cultivates their analytical ability and innovation ability in the face of complex problems.

The intelligent reconstruction of educational tools and teaching processes has brought about a brand-new learning experience [5]. Virtual reality technology can provide students with an immersive learning environment and enhance their understanding of abstract concepts. Augmented reality technology can combine theoretical knowledge with practical application scenarios, helping students establish intuitive cognitive connections. In the fields of programming and design, AI-assisted tools can not only enhance creative efficiency but also provide immediate feedback and guidance for beginners, lowering the learning threshold.

2.3 Educational Equity and Universal Access to Resources. The problem of uneven distribution of educational resources has a long history. High-quality educational resources are often concentrated in economically developed areas, while school-age children in remote areas have difficulty enjoying equal educational opportunities[6]. Artificial intelligence technology provides new ideas for solving this problem. Through online education platforms, high-quality teaching resources can break through geographical restrictions and achieve wide dissemination and sharing.

The realization paths of educational equity have become more diversified. The AI system can provide personalized learning support based on the actual situation of learners, and identify potential learning difficulties through data analysis to intervene in a timely manner[7]. This intelligent support approach enables educational resources to truly benefit everyone in need.

The significance of breaking the educational gap between urban and rural areas lies not only in narrowing the regional gap, but also in changing the educational ecology of the entire society. When high-quality educational resources are no longer exclusive to a certain region or group, the opportunity cost of education will be greatly reduced. Everyone has the opportunity to enhance their knowledge and abilities through their own efforts. This possibility itself is an important sign of social progress.

3. The Challenges Brought by Artificial Intelligence to Education

The development of artificial intelligence has brought unprecedented opportunities to modern education, but it is also accompanied by a series of profound and complex challenges[8]. These

challenges not only involve the application limitations of the technology itself, but also touch upon multiple aspects such as the essence of education, the value orientation of society, and the transformation of human cognitive patterns. In the pursuit of technological innovation and the improvement of educational efficiency, we have to confront a series of challenges such as the crisis of academic integrity and AI reliance, technological dependence and mental inertia, uneven resource distribution and the digital divide. The existence of these problems not only threatens the quality and fairness of education, but also may have a profound impact on the development of human society.



Figure 3. Challenges of AI in education

Although the empowerment of modern education by artificial intelligence brings many opportunities, it is also accompanied by severe challenges. The existence of issues such as academic integrity and the crisis of AI reliance, technological dependence and mental inertia, uneven resource distribution and the digital divide requires a more cautious attitude towards the application of this technology. The fundamental goal of education is to cultivate talents with independent thinking ability and innovative spirit, rather than to train "tool people" who overly rely on technology. While pursuing technological innovation, it is essential to pay attention to humanistic care and social equity, and find a balance point between technological progress and human development. Only in this way can we ensure that artificial intelligence truly becomes a force driving educational progress and does not become a hidden danger threatening the essence of education.

3.1 Academic Integrity and the Crisis of AI Reliance. The wide application of artificial intelligence in the field of education has brought great convenience to academic research and knowledge acquisition, but it has also raised serious concerns about academic integrity. Especially in the learning process of students, AI tools are widely used for tasks such as completing homework, writing papers, and answering questions. This phenomenon seems to improve learning efficiency on the surface, but in fact, it blurs the boundary between learners' own efforts and technical assistance, making it difficult to guarantee the authenticity and originality of academic achievements.

The deeper problem lies in that over-reliance on AI may lead to the degradation of thinking ability. When students get used to using intelligent tools to complete thinking and solve problems, their independent thinking ability and critical thinking may gradually weaken. This phenomenon not only affects students' academic performance, but may also have a negative impact on their future career development and social adaptability. The essence of education is to cultivate people's autonomous learning ability and innovative spirit, but excessive reliance on AI runs counter to this goal.

Furthermore, in terms of the allocation of educational resources, the use of AI tools has further exacerbated the unfairness. High-quality intelligent tools are often in the hands of students with superior economic conditions, while students in poverty-stricken areas have become the

disadvantaged group under this technological gap. This unequal distribution of technological resources not only exacerbates the educational gap but may also lead to the solidification of social classes.

3.2 Technological Dependence and Mental Inertia. The application of artificial intelligence is changing people's learning methods and thinking patterns. Intelligent tools can quickly answer complex questions, provide learning suggestions, and even generate complete academic works. This immediacy and convenience have led students to gradually develop an excessive reliance on technology. When facing problems, many students prefer to directly use AI tools to find ready-made answers rather than explore solutions through their own thinking.

The formation of mental inertia is a gradual process. When students are accustomed to relying on intelligent tools to solve problems, their cognitive abilities may deteriorate, and they are highly likely to experience a decline in their ability to analyze problems, weakened innovation capabilities, and insufficient logical reasoning skills. This phenomenon not only affects students' academic performance, but also may have a negative impact on their future career development.

The fundamental purpose of education is to cultivate talents with independent thinking ability and innovative spirit, while technology dependence runs counter to this goal. In an environment that overly relies on AI, students may lose their interest and ability in deep thinking, which poses a severe challenge to the development of education. We need to find a balance point where we can enhance learning efficiency by using AI tools while avoiding trapping students in the quagmire of mental inertia.

3.3 Uneven Resource Allocation and the Digital Divide. The unequal distribution of educational resources is a long-standing social problem, and the application of artificial intelligence has exacerbated this phenomenon to a certain extent. High-quality educational technologies are often concentrated in economically developed areas and wealthy families, while students in poverty-stricken areas have difficulty accessing these resources. This unequal distribution of technological resources has further widened the educational gap among different groups.

The digital divide is another issue that cannot be ignored. Against the backdrop of digital transformation, some students, due to the lack of necessary equipment, Internet access conditions or technical support, are unable to fully utilize the learning opportunities brought by AI tools. This kind of "hardware" inequality not only affects the academic performance of these students, but also may lead to their disadvantaged position in the future society.

What is more serious is that the uneven distribution of technological resources may trigger more extensive social problems. Education is an important guarantee for social equity, but the existence of the technological gap weakens this guarantee function. When educational resources and technical support become privileges accessible only to a few people, the overall fairness of society will be threatened. This imbalance not only affects the field of education, but may also spread to a broader social level.

4. Ethical Discussions Brought about by Artificial Intelligence

The rapid development of artificial intelligence technology has brought unprecedented transformation opportunities to modern education, but at the same time, it has also triggered profound reflections and discussions on ethics. In the field of education, the application of artificial intelligence involves multiple levels such as data collection, algorithmic decision-making, and human-computer interaction. These processes not only need to consider the effectiveness of the technology but also pay attention to its potential impact on human society, individual rights and interests, and long-term development[9]. Especially in aspects such as data privacy and algorithmic bias, ethical boundaries of human-machine collaboration, value alignment and technology for good, the ethical challenges faced by artificial intelligence empowering education are particularly prominent.

The introduction of artificial intelligence technology in the field of education must establish a clear ethical framework to ensure that its development does not deviate from the value system and moral standards of human society. Issues such as data privacy and algorithmic bias, the boundaries of human-machine collaboration, and value alignment require the joint attention and resolution of all

sectors of society. Only through continuous ethical reflection and technological innovation can the rational application of artificial intelligence in education be truly achieved, making it an important tool for promoting educational equity and progress.

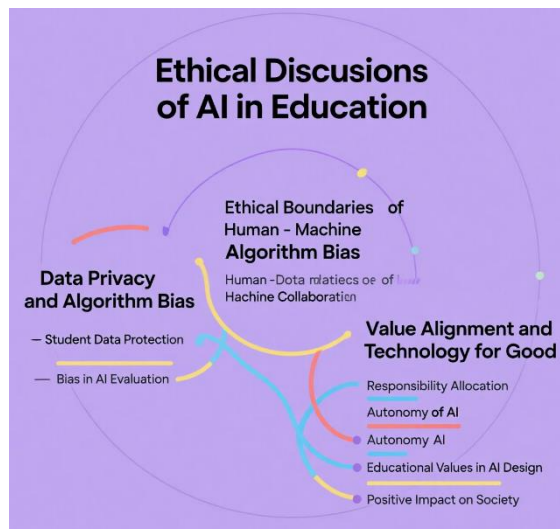


Figure 4. Ethical discussions

4.1 Data Privacy and Algorithmic Bias. In modern education, the application of artificial intelligence often requires the collection and processing of a large amount of student data, including information on learning behaviors, grade records, and even social interactions. The use of these data makes personalized teaching possible, but it also brings serious privacy risks. Through the analysis of data, AI systems can determine students' interests and hobbies, study habits, and potential learning needs. However, if this data collection and processing process lacks strict privacy protection mechanisms, it may lead to the abuse or leakage of students' information.

Algorithmic bias is another issue that cannot be ignored[10]. The decision-making of AI systems relies on training data, which may contain biases and inequalities existing in human society. In the intelligent scoring system, the algorithm may give unfair evaluations to certain groups of students due to the deviation of historical data. This prejudice will not only affect students' educational opportunities, but also may lead to a further imbalance in the distribution of educational resources.

The deeper problem lies in that the "black box" feature of the algorithm makes its decision-making process lack transparency and interpretability. Teachers and students find it difficult to understand why AI systems make certain judgments or recommendations. This not only undermines trust in technology but may also raise questions about the fairness of algorithms. The particularity of the education field requires that we must ensure that the application of artificial intelligence can serve all students fairly and impartially, rather than becoming a tool that exacerbates social inequality.

4.2 Ethical Boundaries of Human-machine Collaboration. With the in-depth application of AI technology in education, the human-machine collaborative teaching mode has gradually become an important trend in the field of education. In this mode, teachers and intelligent systems jointly undertake teaching responsibilities. The AI system provides personalized learning suggestions and teaching support by analyzing students' learning situations. However, in this collaborative process, how to define the responsibility boundaries between human teachers and machine systems has become an urgent ethical issue to be solved.

First of all, when an AI system makes mistakes or deviates, who should be held responsible? Is it a developer, a school or a teacher? This issue directly affects the quality of education and the protection of students' rights and interests. Secondly, will human-machine collaboration affect the relationship between teachers and students? Excessive reliance on intelligent tools may lead to a reduction in emotional interaction between teachers and students and weaken the humanistic care nature of education. Furthermore, the decision-making authority of AI systems may also trigger

ethical conflicts. For instance, when AI systems have different opinions from teachers, how should such differences be handled?

Another important issue lies in the unpredictability of AI systems. Although modern algorithms perform well in many aspects, their grasp of complex human emotions, motivations and values remains limited. This may lead the AI system to make unethical judgments in educational scenarios, and it may even have a negative impact on students due to technical malfunctions or data deviations.

4.3 Value Alignment and Technology for Good. The ultimate goal of artificial intelligence empowering education should be to serve the development needs of people, rather than merely pursuing technological progress or efficiency improvement. However, in practical applications, how to ensure that AI systems can accurately understand and follow human values has become a key issue. The core of value alignment lies in ensuring that the decisions and behaviors of AI systems are in line with socially recognized moral standards.

Under the concept of technology for good, we need to design AI systems that can reflect the core ethical values in the field of education. For instance, fairness, inclusiveness and respect for individual differences should be the fundamental principles of educational AI. However, the realization of this design concept requires overcoming many difficulties. First of all, how can machines understand and internalize complex social values? Secondly, how to balance commercial interests and social ethical demands in the process of technological development?

Furthermore, technology for good also requires us to have forward-looking thinking when designing and applying AI systems. Education is a long-term undertaking related to personal growth. Any technological innovation must be premised on safeguarding the long-term interests of students. For instance, when using AI for learning assessment, we need to ensure that it can not only detect the current learning outcomes but also provide beneficial support for students' future development.

5. Thoughts and Opinions

The rapid development of education empowered by artificial intelligence has brought both unprecedented opportunities and numerous challenges. In the process of the deep integration of technology and education, how to balance technological innovation and ethical constraints? How to build a sustainable educational ecosystem? These issues require the joint efforts of all sectors of society to promote the healthy development of artificial intelligence in the field of education through various means such as policy guarantees, transformation of teachers' capabilities, popularization of technology and humanistic care[11].

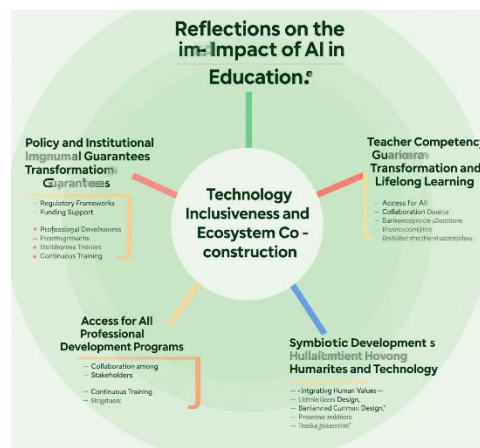


Figure 5. Analysis and discussion

The development of education empowered by artificial intelligence requires the joint efforts of all sectors of society. By improving policy guarantees, promoting the transformation of teachers' capabilities, achieving technological inclusiveness and emphasizing humanistic care, a healthier and more sustainable environment can be created for the integration of technology and education. Only

in this way can the potential of artificial intelligence in the field of education be truly brought into play, achieving a dual improvement in educational equity and quality, and cultivating more talents that meet the needs of The Times.

5.1 Policy and Institutional Guarantees. The improvement of policies and systems is the foundation for the sustainable development of education empowered by artificial intelligence. Facing the complex challenges brought by technology, the government and all sectors of society need to jointly formulate a scientific and reasonable policy framework to ensure that technological development is consistent with educational goals.

A clear data privacy protection mechanism should be established to regulate the collection, storage and use of educational data, and prevent students' information from being abused or leaked. At the same time, in terms of technical application standards, it is necessary to establish a quality assessment system for intelligent teaching tools to ensure the reliability and security of AI systems. This can be achieved by setting up a certification mechanism to conduct strict reviews of AI products in the educational field, preventing low-quality or harmful technologies from entering the education sector. In addition, policies should also encourage innovation and experimentation, and provide support and guarantees for the pilot application of new technologies in education. During the promotion process, a supervision mechanism should be established in a timely manner to promptly identify and solve problems that arise in the application of technology, ensuring that educational equity is not affected.

5.2 Teacher Capacity Transformation and Lifelong Learning. The popularity of artificial intelligence has put forward new requirements for the role and skills of teachers. Teachers in the future will not only need to master subject knowledge, but also possess certain technical literacy and be able to effectively use AI tools to support teaching work[12]. Therefore, promoting the transformation of teachers' capabilities is of vital importance. Digital training for teachers should be strengthened to understand and master the basic principles of artificial intelligence and its application scenarios in education. Through carrying out teacher training programs, active learning, etc., the cognition and usage ability of intelligent teaching tools can be enhanced. Artificial intelligence technology itself does not have the ability to make judgments. Therefore, teachers need to possess critical thinking, be able to rationally analyze the suggestions and data provided by AI systems, and make decisions in line with educational goals based on this. This requires teachers to keep learning and update their knowledge structure to adapt to the trend of the deep integration of technology and education. Furthermore, lifelong learning is not only the responsibility of teachers, but also a consensus of the entire society[13]. By establishing mechanisms that support the continuous development of teachers, such as providing online course resources and setting up special funds, more opportunities for teachers' career development can be provided.

5.3 Technology Inclusiveness and Ecological Co-construction. The effect of artificial intelligence empowering education largely depends on its coverage and the extent of its application. Only by achieving the universal application of technology can its role in promoting educational equity be truly exerted. To this end, multiple measures need to be taken to ensure that areas with weak educational resources can also enjoy the benefits brought by artificial intelligence. By lowering the technical threshold and developing AI educational tools suitable for different environments and needs, more schools can afford the related equipment and technical services. Design a lightweight online learning platform to meet the usage requirements in areas with poor network conditions. To make advanced technologies accessible to all, it is necessary to promote multi-party cooperation and build an open technology ecosystem. The government, enterprises, schools and research institutions should make joint efforts, share resources and experiences, and avoid the emergence of technological silos. Promote the integration of technological innovation and educational practice by establishing open-source projects or technology alliances. While promoting technological development, it is also necessary to establish a sustainable technological development mechanism to ensure that AI educational tools can be continuously updated and improved. This requires not only the support of funds and technology, but also the guidance of policies and the market to create a favorable environment for innovation.

5.4 The Symbiotic Development of Humanities and Technology. While pursuing technological progress, the core value of education - cultivating the all-round development of people - cannot be ignored. Artificial intelligence should serve the essence of education rather than replace or weaken humanistic care[14]. This requires that the people-oriented concept be always adhered to in the application of technology. When designing AI educational tools, attention should be paid to user experience and emotional needs. Through intelligent interactive methods, students' interest in learning and sense of participation can be enhanced, while protecting their mental health. In response to the issue of applying a single technology to human society, it is necessary to establish an ethical review mechanism to ensure that the application of artificial intelligence does not have a negative impact on students or teachers. A dedicated ethics committee can be set up to assess the impact of new technologies on educational equity, teacher-student relationships, and other aspects, and to adjust application strategies in a timely manner. At no time should the establishment and consolidation of one's values be overlooked, and the guiding role of values should be emphasized. Education is not only a process of knowledge transmission, but also an important way to cultivate values. While introducing AI technology, it is necessary to strengthen students' ideological and moral education, enabling them to grow up healthily in a balance between technology and humanity.

6. Conclusions

The core goal of AI empowering education is to enhance teaching effectiveness, optimize the learning experience, and achieve a balanced distribution of educational resources. Through intelligent tools, teachers and students can interact more efficiently, and personalized learning becomes possible. Meanwhile, data analysis can provide a scientific basis for educational decisions, helping to identify learning difficulties and intervene in a timely manner. However, this process needs to follow clear value orientations and ethical guidelines.

6.1 Technology Empowerment - Reshaping the Education Ecosystem. Artificial intelligence technology is redefining the connotation and practical methods of education, promoting the transformation of teaching models from traditional to intelligent. The application of intelligent tools makes personalized learning possible and also provides teachers with more powerful auxiliary means, reducing the teaching burden.

6.2 Value Adherence - Avoiding Alienation and Imbalance. The intelligentization of education must adhere to the core concept of people-oriented. Technology should serve educational goals rather than dominate or even replace the essence of education. While pursuing technological innovation, it is necessary to be vigilant against the tendency of toolization. The ultimate goal of education is to cultivate well-rounded individuals, not merely to enhance learning efficiency.

6.3 Ethical Assurance - Building a Framework for Sustainable Development. Clear norms and systems need to be established for issues such as data privacy protection, algorithm fairness evaluation, and the boundaries of interaction between teachers and students. Multiple stakeholders such as the government, schools, and enterprises should jointly participate in the supervision and governance of technology application to ensure data security and ethical compliance in the process of educational intelligence.

6.4 Future Development - Balancing Innovation and Humanity. Artificial intelligence should not become a "black box" in education, but should serve teaching practice transparently and explainably. While technological progress is advancing, it is necessary to strengthen the guidance of values, cultivate students' critical thinking and moral judgment abilities, and ensure that technological development does not weaken the humanistic care of education.

In conclusion, the empowerment of education by artificial intelligence represents a profound transformation[15]. While enjoying the dividends of technological innovation, we need to respond to this trend with an open but prudent attitude. We should not only fully utilize the power of technology to promote educational progress, but also adhere to the essence and original intention of education. We should seek a balance point between technological innovation and humanistic values, and jointly build a fairer and warmer educational future.

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