

Research on the Influence of AI on Classroom Teaching Quality

Xiaohang Dong

Graduate University of Mongolia, Ulaanbaatar, 11000, Mongolia

ABSTRACT

With the rapid development of artificial intelligence technology, its application in the field of education is increasingly extensive, especially the quality has a significant impact on classroom teaching. This paper aims to explore the influence of AI on the quality of classroom teaching and the mechanism of action. First, the development of artificial intelligence and its application in education are reviewed. Secondly, the influencing factors of artificial intelligence on classroom teaching quality are analyzed, including teaching content, personalized teaching and learning support, teacher role change, classroom management efficiency and learning atmosphere. Then, the positive impact of AI on the quality of classroom teaching is verified through empirical studies and case analysis. Finally, suggestions on the improvement of classroom teaching quality in the era of artificial intelligence. The results of this paper can help educators and policy makers to better understand the application value of AI in education, and provide theoretical basis and practical guidance for improving the quality of classroom teaching.

KEYWORDS

Artificial Intelligence; Classroom Teaching; Quality; Influence; Development Suggestions.

1. INTRODUCTION

With the rapid development of science and technology, artificial intelligence has gradually entered the field of education, which has brought unprecedented challenges and opportunities to the traditional classroom teaching mode. The application of artificial intelligence technology has not only changed the way of obtaining educational resources, but also greatly enriched the teaching means, and provided new possibilities for improving the quality of classroom teaching. However, the application of artificial intelligence in classroom teaching has also caused a lot of controversy, such as whether it can really improve the quality of teaching, and how to balance the application of technology with students' subjectivity. This study aims to explore the impact of AI on classroom teaching quality and analyze its strengths and disadvantages in order to provide a useful reference for educators and policy makers.

2. OVERVIEW OF ARTIFICIAL INTELLIGENCE DEVELOPMENT

2.1. The Definition and Development Course of Artificial Intelligence

Artificial intelligence is a branch of computer science dedicated to the research, design and development of intelligent machines and systems. It aims to enable machines to simulate, extend and extend human intelligent functions, enabling adaptive, self-learning and self-decision-making. The development process of artificial intelligence can be divided into several stages:

1) Creation stage (1950s): At this stage, the foundation of the AI field was laid. In 1950, Alan Turing published his famous paper, "Computer Devices and Intelligence", which proposed the Turing test and pushed artificial intelligence research to a climax. Since then, John McCarthy and other scholars began to pay attention to the research of artificial intelligence, and formally proposed the term "artificial intelligence" at the Dartmouth Conference in 1956.

2) Exploration phase (1960s-1970s): At this stage, AI research has made important progress in AI. For example, the ELIZA program became the first successful chatbot; expert systems such as Dendral and MYCIN were used in medicine. However, due to methodological and technical limitations, AI research hit a slump at this stage, leading to the so-called "AI winter".

3) Revival stage (1980s-1990s): At this stage, AI research has been revived. Remarkable results have been achieved in machine learning, natural language processing, knowledge representation and reasoning. In addition, the fifth generation of computers, intelligent agents, mobile robots and other research progress has also made breakthroughs.

4) Deep Learning and Big Data stage (2000s-to now): At this stage, the rise of deep learning and the application of big data technology bring new opportunities for the development of artificial intelligence. Deep neural network has made remarkable achievements in image recognition, speech recognition, natural language processing and other fields, making the artificial intelligence research reach a new height.

5) The outbreak of artificial intelligence application: In recent years, artificial intelligence technology has been widely used in many fields such as intelligent home, intelligent transportation, medical and health care, financial investment and so on. Artificial intelligence is moving from theoretical research to practical application, bringing great changes to human society [1].

In short, the development process of AI has gone through multiple stages, and each stage has achieved important results. With the continuous progress of technology and the expansion of application fields, artificial intelligence will bring a more profound impact on human society.

2.2. Application of Artificial Intelligence in Education

The increasing application of artificial intelligence technology in the field of education has had a profound impact on the quality of classroom teaching. First, in terms of teaching content, AI can provide rich resources, such as online courses, educational software and virtual experiments, to help teachers and students acquire more diverse and practical knowledge. Secondly, in terms of personalized teaching, AI can provide students with customized learning plans and resources according to their learning characteristics, interests and abilities, so as to teach students in accordance with their aptitude. In addition, AI technology can also assist teachers in classroom management, such as automatic recording of students' attendance, performance evaluation and teaching analysis, to improve teaching efficiency.

At the same time, the application of AI in education also poses some challenges. First of all, teachers need to have a certain degree of information technology literacy when applying artificial intelligence technology, which may be a big challenge for some teachers. Secondly, over-reliance on AI may lead to reduced communication between teachers and students and affect the establishment of teacher-student relationship. In addition, the application of AI technology may also exacerbate educational inequalities, such as in resource-poor areas, students may not be able to enjoy high-quality AI education services.

To sum up, the application of AI in the field of education has provided strong support for improving the quality of classroom teaching, but it also brings a series of challenges. Therefore, in the process of promoting the application of AI education, it is necessary to pay attention to these problems and take corresponding measures to ensure that the AI technology can truly benefit the education cause.

2.3. The Impact of AI on Education

AI is rapidly changing all fields, and education is no exception. In the field of education, the application of artificial intelligence is gradually deepening, which has had a profound impact on education.

First of all, artificial intelligence has brought about the enrichment and expansion of teaching content. Through the intelligent education system, the corresponding teaching content can be pushed according to the students' learning progress and interests, so as to realize the optimal allocation of teaching resources. At the same time, artificial intelligence can assist teachers in curriculum design and development, and improve the teaching quality of [2]. Second, artificial intelligence provides the possibility for personalized teaching and learning support. Based on big data analysis and learning analysis technology, AI can identify students' learning needs and difficulties, and provide students with personalized learning suggestions and guidance, so as to improve their learning effects. In addition, AI also helps teachers change their roles and improve their abilities. In the intelligent education environment, teachers can use artificial intelligence assistant to conduct teaching management and student evaluation, and put more energy into teaching design and student interaction. At the same time, teachers need to constantly improve their educational technology ability to adapt to the educational changes brought about by artificial intelligence. AI can also improve the efficiency of classroom management. Through the intelligent teaching management platform, teachers can easily grasp the students' attendance, homework and grades, and realize the real-time monitoring and management of the classroom. Finally, AI can stimulate the learning atmosphere and students' initiative. Intelligent education tools such as virtual reality (VR) and augmented reality (AR) can provide students with an immersive learning experience and stimulate students' interest and enthusiasm in learning [3].

3. FACTORS AFFECTING CLASSROOM TEACHING QUALITY

3.1. Teacher Factor

Teacher factor is a crucial link in exploring the influence of artificial intelligence on the quality of classroom teaching. As the organizer and guide of teaching activities, teachers' professional quality, teaching concept, technical ability and adaptability will directly or indirectly affect the integration effect of AI technology and classroom teaching.

Teachers' professional quality is the foundation of teaching quality. In the AI era, teachers need to have the corresponding technical background and application ability to effectively use AI tools for teaching design, classroom management and student evaluation. In addition, teachers' acceptance and adaptability of AI technology is also one of the influencing factors. Teachers' attitudes and beliefs will influence their willingness to apply the AI technology, as well as their anxiety levels and coping strategies in the face of technological change. Secondly, the teaching concept of teachers is particularly important in the era of artificial intelligence. The traditional teaching mode emphasizes the central position of teachers, while the modern educational concept advocates the student as the center, emphasizing cooperation, inquiry and personalized learning. The introduction of AI technology provides the possibility for the realization of this concept. Teachers need to update their ideas, learn to cooperate with AI, give full play to their advantages in data analysis and personalized learning support, and provide students with a more flexible and personalized learning experience. Moreover, the technical ability of teachers is the key to using artificial intelligence tools for teaching. This includes not only the skills to operate AI software and platforms, but also the ability to analyze, interpret and apply teaching data. Teachers need to improve their technical ability through continuous learning and practice, so as to better integrate AI technology with classroom teaching, and improve the teaching efficiency and quality. Finally, teachers' emotional and social skills are irreplaceable human characteristics. Although AI can provide

personalized learning advice and immediate feedback, teachers' emotional support, motivation and interpersonal communication are important conditions for students' psychological growth and in-depth learning. Therefore, teachers should make full use of AI tools while maintaining effective interaction with students to create a positive classroom atmosphere.

3.2. Student Factors

In the study of exploring the influence of artificial intelligence on classroom teaching quality, the student factor is a link that cannot be ignored. Students are the main body in the teaching process, and their characteristics, needs and behaviors directly affect the teaching effect. First, the individual difference of students is an important factor affecting the quality of teaching. Artificial intelligence can understand the learning characteristics, interests and abilities of each student through data analysis, so as to realize personalized teaching and meet the needs of different students. Secondly, the students' learning motivation and participation have a direct impact on the teaching quality. Artificial intelligence can improve students' interest in learning and stimulate their enthusiasm for learning through gamified learning, virtual reality and other technologies. Thirdly, students' independent learning ability is also the key to affect the quality of teaching. Artificial intelligence can provide students with rich learning resources and tools, guide them to actively explore, practice and reflect, and cultivate their ability of independent learning. In addition, students' mental health and social skills should not be ignored. Artificial intelligence can pay attention to students' mental health and improve their social skills through online psychological counseling and social networking platforms. To sum up, the influence of student factors on the quality of classroom teaching is multifaceted, and we should pay attention to the individual differences of students, stimulate their learning motivation, and cultivate their self-directed learning ability and mental health. As an emerging technology, artificial intelligence has great potential and possibilities, which can help us better cope with these challenges and improve the quality of classroom teaching.

3.3. Teaching Resources and Environmental Factors

Teaching resources and environmental factors are the important aspects affecting the quality of classroom teaching. Teaching resources include teaching materials, teaching facilities, network resources, etc., which are of great significance to the development of teaching activities. First of all, as the main carrier of teaching content, the quality of teaching materials directly affects the teaching effect. High-quality teaching materials should be scientific, systematic and practical, and can meet the learning needs of students. Secondly, the perfection of teaching facilities is also an important factor affecting the quality of teaching. For example, multimedia teaching equipment, laboratory and other facilities can enrich the teaching means and improve the teaching effect. In addition, the development of network resources also provides more possibilities for teaching, such as online teaching platform, digital teaching resources, etc., which can help to improve the teaching quality of [4].

Environmental factors also have an impact on the classroom teaching quality. First of all, the campus atmosphere plays an important role in the students' learning enthusiasm. A positive campus atmosphere can stimulate students' interest in learning and improve their learning initiative. Secondly, classroom discipline and the teacher-student relationship will also affect the quality of teaching. Good classroom discipline can ensure the smooth progress of teaching activities, and a harmonious relationship between teachers and students helps to build trust and promote the development of students' personality. In addition, the macro-environmental factors such as education policy and education funding investment also have an indirect impact on the quality of classroom teaching.

3.4. Teaching Methods and Strategic Factors

Teaching methods and strategies are one of the important factors affecting the quality of classroom teaching. Traditional teaching methods are usually teacher-centered, who teach knowledge in class and students listen and take notes below. However, with the development of artificial intelligence technology, the teaching methods and strategies have changed a lot.

The application of artificial intelligence technology provides more possibilities for teaching. Teachers can use artificial intelligence technology to design personalized teaching programs, and adjust the teaching content and rhythm according to the learning situation and needs of each student. For example, artificial intelligence systems can provide students with learning materials and exercises suitable for them according to their learning progress and ability, so as to help students better master knowledge. In addition, AI technology can also provide teachers with more classroom management tools. For example, artificial intelligence systems can help teachers monitor students' learning status and learning progress, find out students' problems in time and provide corresponding help. Teachers can assign homework, correct homework and conduct tests through the artificial intelligence system, saving a lot of time and energy, so as to pay better attentions to the students' learning situation [5]. In addition, the application of artificial intelligence technology can also improve the classroom atmosphere and stimulate students' interest and initiative in learning. Artificial intelligence system can create vivid and interesting learning scenes through gamified learning, virtual reality and other technologies, so that students can learn in a relaxed and happy atmosphere. This helps to improve the students' learning enthusiasm and learning effect.

4. ANALYSIS OF THE INFLUENCE OF ARTIFICIAL INTELLIGENCE ON CLASSROOM TEACHING QUALITY

4.1. Enrich and Expand the Teaching Content

The AI can provide personalized learning materials. Through the analysis of students' learning data, AI can understand students' learning needs and learning styles, and recommend suitable learning materials for students to them. Such personalized learning materials can not only improve students' interest in learning, but also help students to learn more effectively. Second, AI can provide a rich interactive learning experience. Through virtual reality, augmented reality and other technologies, AI can provide students with a more vivid and intuitive learning experience. This interactive learning method can stimulate students' interest in learning and improve their enthusiasm for learning. In addition, AI can also provide students with intelligent tutoring. Through technologies such as natural language processing, AI can understand students' questions and provide corresponding answers. This kind of intelligent tutoring can not only improve students' learning efficiency, but also help students develop the ability to solve problems [6].

4.2. Personalized Teaching and Learning Support

Artificial intelligence can analyze students' learning data, understand students' learning habits, mastery degree and potential needs, and customize learning plans for each student. Such a personalized teaching program can make students more active and engaged in learning and improve the learning effect. Secondly, AI can provide students with intelligent learning guidance and q & A. Through natural language processing and machine learning technologies, AI can understand and answer students' questions, provide real-time answers and guidance, and help students solve difficult problems in learning. In addition, AI can also provide students with personalized learning recommendations and content feeds. Through the analysis of students' learning records and behaviors, AI can recommend learning materials and courses suitable for their level and interest, helping students to expand their knowledge and improve their interest in learning [7].

4.3. Teacher's Role Change and Ability Improvement

The change of teachers' role and ability improvement are the key to the improvement of classroom teaching quality in the era of artificial intelligence. In the context of artificial intelligence, teachers are no longer the transmitters of knowledge, but the guides, tutors and partners of students' learning. The role of teachers has changed from the leader of teaching to the helper of teaching, which requires teachers to have higher educational technology literacy and teaching design ability. Teachers need to have educational technology literacy, understand and master the use of artificial intelligence education tools, be able to use artificial intelligence technology to develop and design teaching resources, and improve teaching quality and efficiency. Secondly, teachers need to have the ability of teaching design, and to be able to design personalized teaching programs according to students' learning needs and learning characteristics, so as to help students achieve efficient learning. In addition, teachers also need to constantly learn and improve their professional knowledge and teaching ability to adapt to the educational changes in the era of artificial intelligence. Teachers can improve their professional quality and teaching ability by participating in professional training and learning the latest educational theories and teaching methods.

4.4. The Improvement of Classroom Management Efficiency

In the field of education, the application of artificial intelligence technology is of great significance to the improvement of classroom management efficiency. First of all, artificial intelligence can realize the real-time monitoring and analysis of students' learning behavior, and teachers can adjust their teaching strategies according to the analysis results, so as to improve the teaching effect. Secondly, the AI assistant can assist teachers to complete the repetitive work such as classroom attendance and homework correction, reduce the burden of teachers, and make teachers have more energy to pay attention to the personalized needs of students. In addition, the intelligent teaching resource management system can provide teachers with rich and diverse teaching resources and improve the quality of classroom teaching [8]. At the same time, artificial intelligence technology can also help teachers to achieve personalized management of students. Through big data analysis, teachers can understand the learning characteristics, interests and advantages of each student, so as to develop a teaching plan more in line with the needs of students. In addition, AI can also provide students with personalized learning advice and guidance, so that students can also get effective learning support outside of the classroom. In addition, another important role of AI technology in classroom management is to optimize the classroom atmosphere. Intelligent teaching environment can stimulate students' interest in learning and improve students' participation and initiative. For example, virtual reality (VR) technology can provide students with an immersive learning experience, making the classroom more lively and interesting. However, a series of challenges need to be overcome to fully leverage the strengths of AI in classroom management. First of all, teachers need to have certain information technology literacy to effectively use AI tools effectively. Secondly, schools need to provide corresponding technical support and resource guarantee to ensure the smooth implementation of AI technology. Finally, education departments need to formulate relevant policies to guide and regulate the application of AI in the field of education, so as to ensure that it will improve the efficiency of classroom management without having a negative impact on students' learning.

4.5. Learning Atmosphere and the Stimulation of Students' Initiative

The integration of artificial intelligence technology into classroom teaching plays a positive role in stimulating the learning atmosphere and students' initiative. First of all, artificial intelligence can provide students with personalized learning resources and tasks, so that students can conduct in-depth learning in the areas they are interested in, so as to improve their enthusiasm for learning. Secondly, the AI-assisted teaching platform can timely feedback students' learning situation, so that students can understand their own progress and shortcomings, and further stimulate students' learning

motivation. In addition, artificial intelligence can also simulate real teaching scenes, carry out interactive teaching, increase students' sense of participation and experience, so as to improve students' initiative. At the same time, the application of artificial intelligence technology also enables teachers to better pay more attention to each student's learning situation, adjust their teaching strategies in time, and provide effective support for students' learning. The role of teachers has also changed from the traditional knowledge imitator to the guide and facilitator of students' learning. This role change helps to establish a good learning atmosphere and stimulate students' interest in learning [9]. However, we should also note that the application of AI technology may bring some potential problems. For example, excessive reliance on AI technology may lead to a decline of students' ability to learn independently, as well as may aggravate the gap among students. Therefore, while using artificial intelligence technology to stimulate students' enthusiasm for learning, we also need to pay attention to these problems and take corresponding measures to solve them.

5. AN EMPIRICAL STUDY

5.1. Study Design

In terms of sample selection, this study selected several primary and secondary schools in China as the research object, covering students from different regions, different types of schools and different grades. When selecting samples, try to ensure the representativeness of the samples, so that the research results have a certain universality. Secondly, in the data collection, multiple methods were used in this study. On the one hand, subjective data such as satisfaction and frequency of AI application are collected through questionnaire survey; on the other hand, classroom teaching quality is measured by objective data such as classroom observation and teaching performance. In addition, interviews and suggestions on the application of AI were collected. Then, in the data analysis, this study used descriptive statistical analysis, correlation analysis and regression analysis. Descriptive statistical analysis is used to understand the basic situation of the sample, correlation analysis is used to explore the relationship between AI application and classroom teaching quality, and regression analysis is used to reveal the influence of AI application on classroom teaching quality [10]. Finally, in order to ensure the validity and reliability of the study, the following points were noted in the design process: first, to ensure the scientific and rational nature of the questionnaire design; second, to train investigators to improve the quality of data collection; third, to use anonymous survey to ensure the authenticity of the survey results.

5.2. Data Collection and Processing

In terms of data collection, we mainly used questionnaire survey, interview and classroom observation. The questionnaires and interviews included teachers and students, and we designed targeted questions to understand their actual needs in classroom teaching and the current status of AI applications. Classroom observation is to record and analyze the teachers' use of artificial intelligence in the actual teaching, so as to understand the application of artificial intelligence in the classroom. Secondly, in terms of data processing, we first organize and cleaned the collected raw data to remove invalid and incorrect data and ensure the quality of the data. Then, we used statistical analysis methods to analyze the valid data, such as descriptive statistics, correlation analysis and regression analysis, to reveal the extent of AI influence on the quality of classroom teaching. In addition, we analyzed the data from interviews and classroom observations to gain deeper insight and understanding. Finally, in terms of results presentation, we present the analysis results in the form of charts and text, so as to intuitively show the impact of AI on the quality of classroom teaching. At the same time, we also discussed the results, discuss the advantages and disadvantages of the application of AI in classroom teaching, and put forward corresponding suggestions for improvement.

In conclusion, in the process of data collection and processing, we focus on the combination of multiple methods to ensure the comprehensiveness and accuracy of the data. Through rigorous data processing and analysis, we aim to reveal the real impact of AI on the quality of classroom teaching and provide a scientific basis for educational reform and development [11].

5.3. Analysis and Discussion of the Results

Through data collection and processing, we find that the application of AI in classroom teaching has a positive impact on improving the quality of teaching. First of all, the enrichment and expansion of artificial intelligence-assisted teaching content enable students to have access to a wider range of knowledge resources, and improve the interest and practicability of learning. Secondly, in terms of personalized teaching and learning support, artificial intelligence provides customized teaching programs according to students' learning characteristics and needs, which is helpful to improve students' learning effect. In addition, the introduction of artificial intelligence technology has changed the role of teachers from traditional knowledge imitators to instructors and facilitators of students' learning, which helps to improve teachers' educational and teaching ability. At the same time, the application of artificial intelligence in classroom management has improved the management efficiency, enabling teachers to pay better attention to students' learning situation. Finally, the application of artificial intelligence stimulates students' learning atmosphere and initiative, and helps to cultivate students' independent learning ability and innovative thinking.

In the Discussion section, we will further explore the impact of AI in classroom teaching. First of all, whether the application of artificial intelligence brings the problem of fairness in education, we need to pay attention to whether all students can enjoy the benefits of artificial intelligence. Secondly, whether the application of AI in teaching has changed students' learning style, and whether it helps to cultivate students' information literacy and digital skills. In addition, we also need to pay attention to whether the application of AI in education has had an impact on the career development of teachers, how teachers adapt to this change, and how to improve their educational and teaching ability. Finally, we need to explore whether the application of artificial intelligence in education promotes the connotative development of education, and whether it helps to cultivate students' comprehensive quality and innovation ability.

To sum up, the application of artificial intelligence in classroom teaching has a positive effect on improving the teaching quality of teaching, but it also needs to pay attention to related issues, such as educational equity, change in students' learning style, teachers' career development, etc. We need to explore these issues in depth in further research to promote the deep integration of artificial intelligence and education and realize the sustainable development of education.

6. CASE ANALYSIS

6.1. Application Cases of AI in Education at Home and Abroad

There are many application cases of artificial intelligence in the field of education. The following are some typical cases at home and abroad:

In China, the intelligent education platform 17 zuoye is a typical example. It uses artificial intelligence technology to provide students with personalized learning programs, and recommends suitable courses, tests and learning materials for students by analyzing their learning data. In addition, 17 zuoye also has the intelligent correction function, which can reduce the work burden of teachers by [12].

Another example is the homework help. Homework Help is an APP that uses artificial intelligence technology to provide guidance to students. It can identify the students' problem-solving process, and

provide the correct answers and steps. At the same time, the homework help also has an intelligent question and answer function, students can get immediate answers through voice or text questions.

Abroad, Khan College is a well-known online education platform, which uses artificial intelligence technology to provide free educational resources to students. Video explanations and exercises on the platform help students study by themselves. Khan College's personalized recommendation system recommends appropriate courses and exercises for students based on their learning progress and abilities.

Chegg, an American education technology company, is also worth watching. Chegg offers services such as online tutoring, rental textbooks and homework help. Using artificial intelligence technology, Chegg can provide real-time questions and homework assistance, as well as recommend suitable tutors and courses for students.

These cases demonstrate that the application of AI in education can improve the quality of teaching and learning effectiveness, and provide personalized learning support for students. With the continuous progress of technology, the application of artificial intelligence in the field of education will be more extensive and deeper in the future.

6.2. Case Analysis and Enlightenment

The case analysis mainly selected two typical AI education application cases at home and abroad, namely Knewton, an intelligent education platform in the United States, and 17 zuoye, an intelligent education company in China. These two cases are typical and representative in the field of AI education. By analyzing their practical experience, they can provide useful enlightenment for the development of AI education in China.

Knewton Is a personalized education platform based on artificial intelligence technology. Through real-time analysis of students' learning data, it provides students with personalized learning suggestions and resources. Knewton The platform can intelligently recommend suitable learning content and learning path according to students' learning progress, ability and preferences, so as to improve students' learning effect and learning interest. Knewton The successful experience shows that AI can provide personalized teaching support for education and improve the quality of teaching [13].

17 zuoye is a Chinese intelligent education company that mainly provides online education tutoring services. 17 zuoye provides artificial intelligence technology to provide students with intelligent learning tutoring and homework correction services. Students can get real-time question answers and learning guidance through the 17 zuoye platform, while teachers can correct homework through the platform and provide personalized feedback and suggestions. 17 The practice of zuoye shows that AI can improve the efficiency and quality of educational services and reduce the work burden of teachers.

Through the analysis of these two cases, we can get the following enlightenment: first, the application of AI education needs to pay attention to the personalized needs of students and provide personalized learning resources and counseling services; second, the application of AI education needs to strengthen the professional development of teachers and improve the educational and teaching ability; finally, the application of artificial intelligence education needs to pay attention to educational fairness, so that more students can enjoy high quality educational resources.

7. COPING STRATEGIES AND DEVELOPMENT RECOMMENDATIONS

7.1. Teacher Professional Development and Training

Teacher professional development and training is one of the important strategies to deal with the impact of AI on classroom teaching quality. With the continuous development of artificial

intelligence technology, the role and responsibilities of teachers in education and teaching are also changing. Therefore, it is particularly important to improve teachers' professional quality and ability, so that they can better adapt to the educational needs of the era of artificial intelligence.

First of all, teachers' professional development should pay attention to the cultivation of teachers' information literacy. Teachers should master the basic knowledge of AI, understand the application status and development trend of AI in the field of education, and how to combine AI technology with education and teaching. Through training and self-study, teachers can constantly improve their information teaching ability and make better use of artificial intelligence to assist teaching. Secondly, teachers' professional development should pay attention to teachers' innovation ability. The rapid development of artificial intelligence technology requires teachers to have strong innovation ability and be able to use new technologies and new methods to improve teaching. Teachers should learn to use artificial intelligence to carry out teaching research, and explore the teaching mode and strategy adapted to the era of artificial intelligence [14]. In addition, teacher professional development should also emphasize the renewal of teachers' educational ideas. The application of artificial intelligence technology makes education more personalized and intelligent. Teachers need to change the traditional educational concept, establish the student-centered educational concept, pay attention to the personalized needs of students, and give full play to the advantages of artificial intelligence in education. Finally, teacher professional development should strengthen the communication and cooperation among teachers. Teachers can share their AI teaching experience through seminars and workshops, and jointly discuss how to use AI to improve the quality of classroom teaching. At the same time, teachers can carry out joint research to discuss in-depth the application of artificial intelligence in education.

7.2. Education Policy and Resource Support

Education policy and resource support are crucial for the application and development of AI in the educational field. First, the government should formulate relevant policies to encourage and promote the application of AI in education. These policies can include financial support, tax incentives, talent training and other measures to promote the development of AI education. Second, the education sector should increase its investment in AI education and provide sufficient resources and support. This includes providing AI education equipment and software, establishing an AI education platform, and providing AI education and training. Only by providing sufficient resources and support can we ensure the smooth application and development of AI in the field of education.

In addition, the education authorities should also strengthen cooperation with enterprises and research institutions to jointly promote the application of AI in education. Companies can provide AI technologies and products, research institutions can provide AI education and research results, and education departments can provide educational scenarios and needs. Through cooperation, resource sharing and complementary advantages can be realized, and the rapid development of artificial intelligence in education can be promoted. Finally, the education departments should pay attention to the quality and effect of AI education, and strengthen the research and evaluation of AI education. Through research, the development status and problems of AI education can be understood to provide a basis for policy making. Through the evaluation, the effect of AI education can be understood to provide a reference for education reform. Only by ensuring the quality and effect of AI education can the application value of AI in education be truly realized.

7.3. Improvement of Students' Information Literacy

In today's information society, the improvement of students' information literacy has become an important issue of education reform. Information literacy refers to the individual's ability to obtain, understand, evaluate and use information in the information society, which includes information awareness, information knowledge, information ability and information morality.

Improving students' information literacy will not only help them adapt to the development of the future society, but also promote their lifelong learning.

First of all, education departments should incorporate information literacy education into the curriculum system and formulate corresponding teaching objectives and content standards. By offering information technology courses, students can systematically learn the knowledge of computer operation, network application, information retrieval and evaluation. In addition, teachers should also integrate information literacy education into subject teaching and cultivate students' ability to apply information technology in practical situations. Secondly, schools should strengthen the construction of libraries, laboratories, multimedia classrooms and other resources to provide students with rich information resources. At the same time, students are encouraged to use Internet resources to conduct independent study and research, so as to cultivate their ability to obtain and process information independently. In addition, teachers should pay attention to cultivating students' information evaluation ability in the teaching process. Guide students to learn to examine information from multiple angles and judge the authenticity and reliability of information. Through case analysis, discussion and debate, to cultivate students' critical thinking. Finally, education departments and schools should regularly organize competitions and activities related to information literacy to stimulate students' interest in learning information technology. At the same time, students are encouraged to participate in the construction of community information, apply the knowledge learned to real life, and improve their information practice ability.

7.4. Deep Integration of Artificial Intelligence and Education

The application of artificial intelligence technology can change the traditional teaching mode. In the past, teachers were the transmitters of knowledge, and students were the passive recipients. However, with the help of artificial intelligence, students can obtain personalized learning plans and resources through the intelligent education system, and realize self-learning and inquiry learning. Such a teaching mode not only improves students' interest in learning, but also helps to cultivate students' innovation ability and problem-solving ability. Secondly, the application of artificial intelligence technology can change the traditional educational methods. Artificial intelligence can provide students with intelligent evaluation and feedback, and help students to better understand their own learning situation, so as to improve targeted learning methods and strategies. At the same time, artificial intelligence can also provide teachers with intelligent teaching tools and resources to improve teaching efficiency and quality. Finally, the application of AI technology can change the imbalance of educational resources. In the past, high-quality educational resources were often concentrated in urban and developed areas, while in rural and less developed areas, educational resources were relatively scarce. However, through AI technology, high-quality educational resources can be shared, thus narrowing the educational gap between urban and rural areas and regions.

8. CONCLUSION

The study has found that the application of AI technology has had a positive impact on the quality of classroom teaching. First of all, artificial intelligence helps to enrich the teaching content and expand the students' knowledge horizon. Secondly, artificial intelligence can realize personalized teaching and meet students' differentiated learning needs. In addition, the application of artificial intelligence technology also helps to improve the teaching level of teachers, change the role of teachers, and make teachers pay more attention to students' learning process and ability cultivation. At the same time, artificial intelligence also has significant advantages in classroom management, learning atmosphere creation and stimulating students' initiative. However, there are also some problems in the application of artificial intelligence technology in education, such as insufficient professional development of

teachers, and poor support of education policies and resources. Therefore, in the process of promoting the deep integration of AI and education, we need to adopt a series of coping strategies and development suggestions, such as strengthening teacher training, formulating relevant policies, and supporting the sharing and optimization of educational resources.

The influence of artificial intelligence technology on the quality of classroom teaching has two sides. We should fully realize this point and make reasonable use of artificial intelligence technology to promote the innovation and development in the field of education. At the same time, we should also pay attention to the challenges that AI may bring in the application of AI technology in education, and actively respond to them to ensure the fair, effective and sustainable development of education. In the future, the deep integration of AI technology and education will inject new vitality into China's education cause, and help to cultivate more talents with innovative spirit and practical ability.

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