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Retraction

Retracted: Artificial Intelligence for Higher Education Development and Teaching Skills

Wireless Communications and Mobile Computing

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Wireless Communications and Mobile Computing has retracted the article titled "Artificial Intelligence for Higher Education Development and Teaching Skills" [1] due to concerns that the peer review process has been compromised.

Following an investigation conducted by the Hindawi Research Integrity team [2], significant concerns were identified with the peer reviewers assigned to this article; the investigation has concluded that the peer review process was compromised. We therefore can no longer trust the peer review process and the article is being retracted with the agreement of the Chief Editor.

References

- [1] X. Xia and X. Li, "Artificial Intelligence for Higher Education Development and Teaching Skills," *Wireless Communications and Mobile Computing*, vol. 2022, Article ID 7614337, 10 pages, 2022.
- [2] L. Ferguson, "Advancing Research Integrity Collaboratively and with Vigour," 2022, https://www.hindawi.com/post/advancingresearch-integrity-collaboratively-and-vigour/.

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Research Article

Artificial Intelligence for Higher Education Development and Teaching Skills

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In the context of the information age, the development of artificial intelligence is flourishing, and it is becoming more and more closely integrated with economic life, which is an inevitable trend of future social development. Education is also inseparable from the support of science and technology. The penetration of artificial intelligence has changed traditional teaching models and methods. Under the influence of artificial intelligence technology, college education is developing more and more in the direction of informatization and intelligence. For college teachers, the study and application of artificial intelligence is an important and necessary means to achieve professional development. It is more important to train students to take independent self-study exams and focus on applying social skills, so that students can better adapt to the coming era of intelligence. Therefore, the purpose of this article is to explore the development of higher education and the improvement of teaching skills based on artificial intelligence and to analyze the problems and solutions in the process of higher education development. This article will use the research methods of specific problems and specific analysis to compare the data and draw conclusions. The research results show that in the information-based education innovation created by knowledge sharing, the teaching goals and methods are constantly changing. And about 85% of the students believe that the development prospect of intelligent teaching is good, which verifies the feasibility of artificial intelligence technology in the development of college education. Only by training students' imagination, creativity, critical thinking, and autonomous learning can they adapt to today's rapidly developing society. Therefore, active learning and research on artificial intelligence is the embodiment of cultivating lifelong learning ability, improving rich teaching skills, constantly summing up experience, actively improving and trimming relevant change programs, and jointly promoting the rapid development of higher education under artificial intelligence.

1. Introduction

The concept of artificial intelligence has attracted a lot of attention in the society since it was mentioned in the 1950s. It has become a relatively mature technology and has considerable development prospects in the future. With the wide use of big data, Internet, and other technologies, artificial intelligence technology has become the forefront of information technology, which integrates into various fields to promote their more rapid development [1–3]. Many countries establish it as a new national strategic direction, which will be the strategic means to determine the future

and will become the object of competition among countries. In the face of severe international forms and technical containment of developed countries, only by continuously improving the international competitiveness of China's artificial intelligence, can each expert, scholar, and all citizens work together to make artificial intelligence better serve the country and society all areas of the meeting. In the process of scientific and technological development, talents are indispensable [4]. The development of higher education provides a source of talents for China's modernization construction. In the background of the rapid development of artificial intelligence, it is necessary to, the teaching of higher

education must be aware of the revolutionary influence of artificial intelligence on the development of education, strengthen the teaching of higher education, and explore the cultivation of new teaching skills. To adapt to the current development form and realize the deep integration of artificial intelligence and higher education, we should make the construction of the education system develop with artificial intelligence and promote the modernization and informatization of higher education [5, 6].

Science and technology are the first productivity. Facing the coming of the fourth industrial revolution, we should seize the opportunity to accelerate the development of various industries in the new wave of scientific and technological revolution and realize the revolutionary changes in all aspects of human life [1]. The Ministry of Education recently issued the action plan for the innovation of artificial intelligence in colleges and universities, which clearly pointed out that accelerating the application of artificial intelligence in the field of education, using intelligent technology to support the innovation of talent training mode, the reform of teaching methods, the improvement of education governance ability, and building an intelligent, networked, personalized, and lifelong education system are to promote the balanced development and promotion of education The important means of advancing education equity and improving education quality are the indispensable power and support to realize education modernization [7-9]. As the leader of all kinds of science and technology in the new era, artificial intelligence not only changes the mode of production but also profoundly affects our daily life [10-12]. It has also changed the form of education and our way of understanding the world. In the face of the ever-changing world, it is urgent to integrate education and artificial intelligence to achieve profound changes in teaching skills, teaching content, talent training mode, and education governance. Colleges and universities are at the center of technological innovation and talent concentration. They must take the lead in learning new Internet technologies and move with the trend, give full play to the value of artificial intelligence in the teaching reform of higher education to provide a new way for educational reform, and promote the modernization of higher education in China [13-15], so as to lead the scientific and technological innovation, talent training and technological application demonstration in the field of artificial intelligence in China and lay a solid foundation for the realization of the fundamental educational task of cultivating people through virtue and the modernization of higher education. Based on this purpose, this paper thinks about the teaching reform of higher education from the perspective of artificial intelligence and puts forward the practical direction of the teaching reform of higher education from the perspective of artificial intelligence, so as to train more useful talents for the society [16, 17].

The basic realization of socialist modernization is the goal put forward by the 19th National Congress of the Communist Party of China. The construction of socialist modernization is inseparable from the development of education [18–20]. Therefore, it is more necessary to strengthen education first, give priority to the development of educa-

tion, realize the construction of a powerful country with talents, and the construction of a strong country with education is inseparable from the realization of a powerful country with education [21, 22]. In the current situation, the development of the university is inseparable from the research and application of artificial intelligence. Colleges and universities have incomparable advantages in the basic theory of artificial intelligence, natural science, computer vision, robotics, and other key technologies [23]. In order to achieve rapid development in the period of great opportunity for the development of artificial intelligence and to promote the innovation of higher education and the improvement of teaching skills, it is necessary to guide and drive university researchers to further strengthen the technological innovation of the new generation of artificial intelligence based on the existing achievements and the current advantages [24]. As the core symbolic technology of the fourth industrial revolution, artificial intelligence, like the previous industrial revolution, has strong vitality. In the initial stage of the development of artificial intelligence, we need to grasp the opportunity, keep learning, and strive for the forefront of development. At present, artificial intelligence has a trend of integrated development in various fields. In the field of higher education, it is particularly necessary to pay close attention to the current situation and trend of artificial intelligence development, judge the development direction from the perspective of development, integrate the existing theoretical basis, and transmit it to students, so that students can constantly update their ideas and enhance their awareness of innovation. As educators, we need to master the application of artificial intelligence in the field of education and actively invest in the research, development, and application of artificial intelligence education products to relay the development of artificial intelligence. In recent years, the research on artificial intelligence has shown an explosive growth trend. Throughout the existing research, more attention has been focused on the discussion of the science and engineering direction with artificial intelligence as the core. Some scholars have also proposed that intelligent science and technology should penetrate into all disciplines and specialties. The breakthrough of artificial intelligence technology, together with other technologies, will improve the efficiency of education and promote new teaching and learning methods Digital education or reality [25]. The domestic research on the development of artificial intelligence started relatively late. At present, the research on the professional development of teachers in China mainly focuses on the research on the stage of teacher development and the connotation of teacher professional development [26]. The domestic scholars mainly focus on the discussion of teaching methods and curriculum construction, and the research on the development direction and teaching skills of macro higher education lessens and need to combine practice in-depth discussion and research in this area [27–29].

Starting from the meaning and characteristics of artificial intelligence, this paper explores the development process of higher education, expounds the current educational methods and the theory of teacher development stage of higher education, mainly analyzes the problems existing in

the current situation of higher education, finds out the reasonable solutions and the balance basis point in line with the characteristics of artificial intelligence, and organically combines the two. The difference between the development of artificial intelligence in higher education and the development of traditional education lies in whether it is intelligent and informatized. This is also one of the biggest characteristics of the development of artificial intelligence in higher education. It can maximize the sharing of educational resources. However, there is a shortcoming of insufficient experience, and the biggest feature of traditional education is face-toface teaching. On the basis of combing the application conditions of artificial intelligence and teachers' professional standards and other related theories, this paper attempts to explore the problems of teaching skills in the new era and the specific application in the actual teaching activities from the application level. It can provide a suggestion for improvement and perfection for the development of higher education and provide a novel direction for the sustainable development of education in the future. As a teacher, he must successfully integrate technology into the curriculum teaching, which is the innovation of teaching philosophy and teaching methods, which is the era of intelligence the challenge teachers must face is also a new development opportunity. Based on the positioning of the current business mode and learning from foreign experience, the paper analyzes the similarities and differences of the development of artificial intelligence education both at home and abroad through comparative advantage. And through the latest experimental survey data, it studies advanced experience, puts forward improvement methods and paths, combines with the development of new ways, and finally puts forward a new model of the development of China's higher education and puts forward some suggestions for promoting the development of China's new higher education.

2. Method

2.1. Core Concepts

(1) Artificial intelligence

Artificial intelligence is a specific branch of computer science. Through research and development, it can simulate, extend, and expand the theory, method, technology, and application system of human intelligence. The research scope of this field is wide, including language processing, language image recognition, and intelligent robot. Since the advent of artificial intelligence technology, it has been deeply studied by scholars all over the world. The theory and technology research are becoming more and more mature, and the application field is also expanding. In the future, the scientific and technological products brought by artificial intelligence will be the aggregation of human intelligence. To some extent, artificial intelligence can carry out digital simulation of the information process of human consciousness and thinking and even surpass human in thinking ability class. At the same time, artificial intelligence is a science with great development potential. It not only involves the digitization of science and engineering such as computer knowledge but also needs to master sociology, psychology, and philosophy, involving many fields as well. The important purpose of developing artificial intelligence is to make computer combined with mechanical equipment competent for some complex work which usually needs human intelligence and greatly reduce the burden of human beings. With the development of society, the application level of artificial intelligence will change constantly.

(2) Higher education

Higher education generally refers to the professional education and vocational education carried out by students on the basis of completing secondary education. It is the main social activity of training senior specialized talents and vocational personnel. Generally, high-level learning, research, social activities, and other educational contents are completed with the help of schools and other carriers. Higher education is one of the important parts in the education system. With the rapid social change, the demand for high-level talents continues to grow, and higher education ushered in rapid development. Individuals are more urgent to receive higher education opportunities, and gradually from elite education to popular education. With the increase of the number of audiences, the competition in the education industry is also increasing. For public education and private education, general education, and vocational education, domestic higher education is also facing foreign higher education, which provides more learning opportunities and accelerates the cooperation of higher education. The development of modern science and technology and production requires higher education to be more and more integrated as a whole, which is reflected in higher education as the integration of courses. It is to make basic education and professional education, application research and development research permeate each other and cross carry out, and train students to adapt to the needs of social development and have the skills to solve complex issues. Nowadays, every country develops higher education vigorously and strictly controls the teaching achievements. Its importance lies in enhancing the level of social productivity and promoting the dual development of economy and culture. The continuous reform of higher education in the curriculum reserves a large number of follow-up talents for the society.

(3) Teaching skills

Teaching skill is the embodiment of a teacher's comprehensive quality, which measures whether he can successfully complete the established teaching tasks, achieve the teaching objectives, and use reasonable teaching methods. At the same time, it is the perfect unity of teachers' creativity and teaching requirements to have insight into students' psychological characteristics, learning characteristics. and personality characteristics. On the surface, teaching skill is an effective way for teachers to promote students' learning in teaching activities. From the deep analysis, it is a token of teachers' professional personality and professional accomplishment and an

important sign of teaching ability. Every teacher has different teaching styles and different teaching levels. To master teaching skills, teachers' teaching skills include teaching design, classroom teaching, homework correction, and after-school guidance, teaching evaluation, teaching research, etc. Artificial intelligence technology can integrate teacher technology scientifically and can exert these skills systematically and effectively. Teachers use the existing theoretical knowledge of teaching, through practice to form a stable and complex teaching behavior system. On the basis of teaching theory, the primary teaching skills can be achieved by improving teachers' own quality, and then, the advanced teaching skills of automation level can be achieved through repeated consolidation exercises, so as to form stable teaching skills. Teaching skill is a necessary teaching skill for teachers. It plays a positive role in achieving good teaching effect and realizing teaching innovation.

2.2. AI Influences the Development of Higher Education

(1) The change of university management mode and education concept. China's higher education investment cost is large, the cycle is long, the number of colleges and universities is large, and resources are tight. The lack of educational funds often hinders the deepening and promotion of teaching and scientific research in colleges and universities, thus affecting the development of higher education. With the integration and development of artificial intelligence technology and social production, the management mode of colleges and universities has also been promoted. Artificial intelligence technology has improved its management efficiency and paid more attention to the learning experience of the educated. The concept of education should also keep pace with the times. Training students to improve their own management efficiency. This educational philosophy is reflected in the daily and student status management, teaching management, research management, and financial management of students. It can use artificial intelligence technology and Internet technology to intelligentize this transactional management work, reduce costs, and improve efficiency. At the same time, intelligent technology can also make intelligent decisions on management methods and improve the utilization rate of resources such as laboratories and libraries in colleges and universities. In terms of the experience of college students, we should attach importance to the development of artificial intelligence; improve the quality of higher education by providing individualized and diversified multidimensional learning space for learners to break the boundaries of disciplines; enhance the comparative advantage of graduates in the employment market; encourage the integration of production, learning, and research to bring students learning experience that is different from traditional education; and promote the internationalization of higher education And lifelong, to bring students a better learning experience

(2) The reform of teaching contents and methods. The teaching contents and methods in colleges and universities have been improved. Under the new situation, according to the needs and the ability of colleges and universities, the subject system of artificial intelligence or artificial intelligence has been established. The artificial intelligence literacy has been brought into the general education system, and the students' general interest, sustainable development, and global governance have been cultivated. We have made great efforts to build modularization of online courses, focused on improving students' knowledge and skills, and established a "artificial intelligence + X" composite talent training program. Similarly, the teaching methods in colleges and universities have also been reformed. The teaching activities in colleges and universities will focus on learning and acquisition, and the learning mode of learners will be changed into individual learning rather than traditional collective learning. Compared with the powerful intelligent reading room, the electronic reading room has transformed the former independent book collection organization and single paper book collection method into the computerbased and network-based service; enriched the resource base; improved the retrieval efficiency; greatly improved the service function; provided the service for the readers faster, more timely, and more accurate; guaranteed the effective implementation of the composite reading activities; and made the university. The function space of the library has been expanded on a large scale. At the same time, it is necessary to solve the corresponding problems. The necessary monitoring and restriction of reading time may help readers better use their time to acquire network knowledge and to a certain extent prevent them from being lost in the colorful and seductive network world

2.3. Characteristics of the Application of Artificial Intelligence in Modern Higher Education

- (1) In the future of intelligent informatization, massive information data and algorithm model will complete many tasks by virtue of high-performance parallel operation. The implantation of artificial intelligence technology will provide more intelligent tools to support teaching and learning in the field of education. Intelligent education and teaching will give learners unprecedented learning experience. In addition, online autonomous learning will perfectly combine with life scenes, with free human-computer interaction, and highlight the new normal of ubiquitous learning and lifelong learning everywhere
- (2) Release personalization. The application of AI technology in education can fully meet the individual needs of learners and push the optimal learning resources, learning paths, and learning services.

Before class, teachers push personalized preview content to students' personal learning space. Teachers can monitor students' learning trajectory remotely, push personalized learning resources in time, and provide remote guidance intelligent teaching platform at any time to automatically generate preview reports, so that teachers can master students' learning situation; in class, through intelligent teaching platform, teachers and students can interact in real time, so that teachers can "one to many" to solve different students' problems and monitor each student's learning in real time After class intelligent platform through the data analysis of students' classroom learning, intelligent judgment of students' individual knowledge difficulties, easy to achieve personalized learning guidance

(3) The key factor for the future integration of multidimensional collaborative artificial intelligence technology into education is the effective multidimensional collaborative development of the government, enterprises, and universities, which provides support for algorithm improvement, teaching mode update, educational resource aggregation, and other aspects. The application scenarios of AI technology education, technology research and development funds, and school enterprise cooperation and docking mode will reflect the maximum effect of collaboration. In the short term, human-computer collaborative development is a trend of artificial intelligence to promote the development of educational intelligence. From the perspective of learning science, learning is a process in which learners actively construct and understand new knowledge according to their existing knowledge. For AI, new knowledge is beyond their comprehension, so learners need teachers' cooperation, assistance, and coordination. Therefore, in the intelligent learning environment, the participation of teachers is essential, and human-computer cooperation will be the prominent feature of AI-assisted teaching

3. Experiment

3.1. Data Source. This study conducted a survey in some colleges and universities in China. Based on the key words of classroom teaching quality evaluation, college teachers' teaching ability and classroom teaching design, dozens of teachers and students in different development periods, different types, different scales, and different majors were selected as interview samples. The interviewees involved the basic situation of teachers, including age, education background, and subject background scene, teaching age, and the situation of participating in teacher training. A total of 200 questionnaires were sent out, and 180 valid questionnaires were recovered. The results were valid. It includes the new teachers' cognition of the concept of classroom teaching objectives, their attitude towards the design of classroom teaching objectives, and their attitude towards the presenta-

tion of classroom teaching objectives. All the experimental data sources of this study are obtained. Table 1 shows the views of college teachers and students on the application of artificial intelligence.

3.2. Experimental Method. First of all, content analysis is used, which is an important method of this research direction. The representative samples were collected and quantified according to multiple dimensions, and the trend was judged by corresponding statistics. At the same time, it analyzes the field distribution of emotion computing literature, the recognition methods involved in literature, and the common emotion states. In addition, it makes statistical analysis of data mining methods, tasks, education systems, application systems, and corresponding functions in the field of education data mining. Second, in order to understand the teachers' understanding and use of AI more comprehensively, this paper specially formulated a special questionnaire on AI and higher vocational teachers' specialization for the higher vocational teachers group, hoping to understand the teachers' mastery of educational information technology through the questionnaire and put forward better suggestions and countermeasures for teachers' professional development. This study does not attempt to depict all the fine features of artificial intelligence research in education research. In this paper, around the purpose and problems of the research, the samples that can explain the problems are selected with certain standards, which makes the scattered, static, and isolated content have liquidity. When grasping the overall characteristics of the artificial intelligence research in education research, the problems that can exist in this field are mapped out from different aspects. For example, in order to grasp the important issues in the field of artificial intelligence and education research, the quality of sample papers is considered when selecting relevant coding samples. The lower quality literature often has lower academic quality, which makes the overall problems presented numerous and numerous and is not helpful to grasp the core issues of academic research. Third, deductive reasoning. For some rapidly changing research objects, it is difficult to make relatively accurate judgments based on the traditional data based on the past research methods, and the prediction results are often delayed in the development process of research objects, as is the case in the artificial intelligence industry. Therefore, it is necessary to make reasonable deduction and reasoning on the basis of objective facts, so as to judge and predict the future trend of the rapid development industry prospectively. Through the way of deductive reasoning, we try to predict the future development trend of online education industry more comprehensively and reflect the comprehensiveness of research.

3.3. Purpose of the Experiment. The goal of educational technology researchers is to achieve efficient teaching and promote the development of students' personality, overall development, and innovation through technological change in education. The research combines the technology of artificial intelligence, big data, and learning analysis to explore the changes caused by the way teachers teach and students

Teacher	Understanding of AI teaching 21%	AI will improve teaching 55%	AI will reduce workload 47%	The development prospect of intelligent teaching is good 68%
Student	Understanding of AI teaching	AI will improve teaching 63%	AI will reduce workload	The development Prospect of intelligent teaching is good 85%

TABLE 1: Views of college teachers and students on the application of artificial intelligence.

learn. On the one hand, it discusses the way of intelligent teaching of teachers, analyzes the development process of teaching and the connotation of intelligent teaching, constructs the intelligent teaching mode, and makes specific exploration from intelligent preparation before class, accurate teaching in class, intelligent answer, and guidance after class. On the other hand, it discusses the way of intelligent learning for students, analyzes the development process of learning and the connotation of intelligent learning, and probes into the general process and method of intelligent learning from the aspects of adaptive preview, intelligent interactive learning, intelligent accompany practice, intelligent guide in-depth learning, etc. The change of resources and environment is the basis of teaching reform. The development of artificial intelligence has given birth to many intelligent teaching tools, learning tools, and intelligent platforms, driving the teaching environment from digital to intelligent. This paper studies the characteristics and functions of new intelligent teaching tools and intelligent teaching platforms; discusses the characteristics, functions, application status and development trend of intelligent teaching robots, and intelligent learning software; discusses the intelligent evolution, intelligent push, and intelligent retrieval of teaching resources; and discusses the connotation and characteristics of intelligent teaching environment, so as to create and create an intelligent teaching environment through the intelligent resources and environment more in line with the needs of students' learning environment, driving the reform of teaching.

4. Discussion

4.1. Problems in the Development of Higher Education

(1) The teachers are not professional, and their concept understanding is not comprehensive. Artificial intelligence education can intuitively and comprehensively display concepts and meanings to students. In many colleges and universities, facing the lack of practical application perspective of this new science and technology, teachers can only explain the concept and meaning, the teaching method is single, and they are aware of the necessity and feasibility of integrating artificial intelligence technology into teaching. They did not master the skills of how to cooperate with AI in teaching. In the process of teaching, students' autonomy is greatly enhanced, and teachers are easy to blur their own positioning without adjusting their teaching skills. Artificial

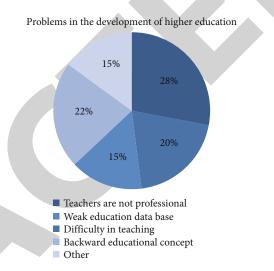


FIGURE 1: Problems in the development of higher education.

intelligence is different from other majors. It is closely related to social development. The development speed and variability of the major are increasing. The negative public opinion will affect teachers' indepth understanding and mastery of it. The application of artificial intelligence technology in modern education can replace modular tasks, but the emotional care for students and the construction and cultivation of values are not competent for the completion of artificial intelligence. As shown in Figure 1, there are still various problems to be solved in the development of higher education.

(2) There is a wide range of professional connections, and it is difficult to teach artificial intelligence technology. In the development of higher education, different regions, different schools, and different subjects have their own unique knowledge system and application scenarios. Each teacher's teaching method and student's learning method are also different, which cannot be generalized. Therefore, in the face of the complexity of the education system, it is required that the integration process of artificial intelligence technology should be combined with different scenarios to improve the adaptability and clearly understand the shortcomings of technology development and the difficulty of in-depth application of education system.

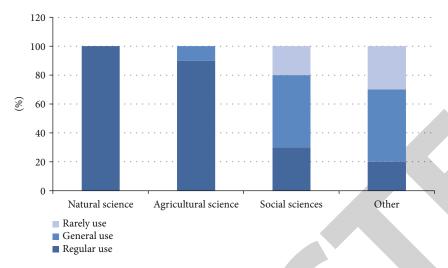


FIGURE 2: Use of educational information technology by teachers.

These problems can be solved by the emotional computing technology of artificial intelligence technology, that is, the ability to understand and convey text information and voice information. Artificial intelligence is becoming more and more mature in the field of speech and text, but the processing of Chinese natural language and emotional computing still need to be improved by teachers. Figure 2 shows the use of educational information technology by teachers.

(3) The foundation of education data is weak, and the exertion of technology value is limited. In recent years, artificial intelligence applications have sprung up, many areas have been combined with applications, but high-quality use cannot do without a large number of effective data. Artificial intelligence needs to track and record the data of teachers' teaching process and students' learning process, so as to find problems and solve them. At present, the data standards involved in the field of education are not unified, and the incomplete collection greatly affects the integration of the two. Due to the variety of data formats such as hypermedia in the process of education and teaching, the data quality is not high, which also hinders the spread of personalized teaching services and intelligent accuracy.

4.2. Countermeasures for the Development of Artificial Intelligence Higher Education

(1) Constantly update the education concept and improve the publicity level. In the emergence of new science and technology, the most important thing is to let teachers and students have the correct cognition and application practice, including the application of artificial intelligence technology in modern higher education and application scenarios.



FIGURE 3: Intelligent educational robot.

In the era of big data and the popularization of online education, students will become the core of education. Teachers should not only change teaching concepts but also constantly improve teaching skills; cultivate students' ability to explore personalized learning, adaptive learning, and in-depth learning; and fully grasp the basis of theoretical framework, so that they can adapt to new industries and fields in the future society, expanding work in new areas

(2) Deepen the research and development of artificial intelligence education products and upgrade technical services. Relevant Internet companies and intelligent technology enterprises should go deep into the reality, tap the convergence point between market demand and modern education, research and develop educational intelligent products, promote the practical application of scientific and technological products, and deepen the research, development, upgrading, and landing application. At the same time, we should broaden the function modules of educational AI

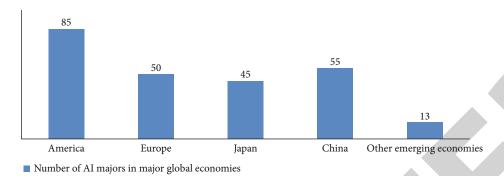


FIGURE 4: Number of AI majors in major global economies.

products, appropriately assist education and teaching and improve learning effect, and improve the overall satisfaction of teachers' teaching needs and students' personalized learning needs. As shown in Figure 3, at present, some colleges and universities in Shanghai have used intelligent robots for attendance and assignment arrangement, establish the supervision and evaluation system of artificial intelligence education products, formulate corresponding laws, regulations and standards, and effectively guarantee that intelligent technology enterprises provide safer and better products and services for modern education

(3) Set up artificial intelligence specialty in colleges and universities. In order to take the lead in the field of artificial intelligence in the new situation, it is necessary to cultivate talents. In developed countries, many colleges and universities have begun to pay attention to the education and training of artificial intelligence and have set up the major of artificial intelligence. With the help of electronic information science and other disciplines, the system chain of production and learning can be directly formed in colleges and universities. As shown in Figure 4, this major has been opened in different regions of the world, but there are still some gaps in the number. As shown in Figure 4, the major developed countries of Britain and the United States started earlier, and China's development speed is fast. In Japan, Osaka University and Waseda University have set up artificial intelligence, robotics, and other majors based on information engineering; in Britain, Oxford University has set up machine learning course in undergraduate stage, intelligent system, memory network, and other technologies in master stage; in the United States, computer school of Stanford University has built-in artificial intelligence, agent, natural language and data, robotics, etc. curriculum. The course of artificial intelligence is the basic carrier of artificial intelligence education. To promote the development of higher education, it is inseparable from its own teaching

5. Conclusion

The maturity of artificial intelligence technology has led to the reform in the field of education, updated the concept of higher education, innovated the mode of running a school, and optimized the personnel training system. At the same time, it combines the new technology to carry out life-long education, borderless education, intelligent campus construction, and so on, making people's value realization and ability promotion highly integrated. Artificial intelligence not only optimizes teaching skills but also leads to the reform of higher education evaluation mechanism and the system innovation of crossdomain and cross-regional coordination of school running resources. It accelerates the reform from higher education system innovation to governance innovation and makes the quality of higher education in China develop continuously.

Artificial intelligence has completed the function of lowlevel teaching in higher education. At present, the application of intelligent auxiliary teaching system in colleges and universities is more and more extensive. In the specific teaching links, through data collection and analysis, classification and matching can understand students' learning situation in all aspects and at multiple levels, and establish an effective communication bridge between teachers and students. It helps college teachers design teaching plans, collect teaching materials, answer questions online, test and evaluate teaching, and reduces the burden of daily work. So that teachers have new teaching methods to cultivate students' innovative thinking, unity and cooperation ability, emotional interaction ability, complex problem solving ability, and other social skills. Let students come out of books, no longer stick to rigid teaching objectives and classroom tasks, more practical learning and training learning, and optimize the development path of higher education.

With the vigorous promotion of the combination of artificial intelligence and higher education in line with the new direction of modern economic development and the promotion of the level of employment in China, the development speed of artificial intelligence technology will be faster and faster. We need to grasp the development context, study and judge the development trend of industry demand, take the initiative to seize opportunities, actively respond to challenges, and work together for the development of higher education in the new era.

Data Availability

This article does not cover data research. No data were used to support this study.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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References

- [1] M. F. Allawi, J. Othman, E. Mohammad, M. H. Firdaus, and A. El-Shafie, "Synchronizing artificial intelligence models for operating the dam and reservoir system," *Water Resources Management*, vol. 32, no. 10, pp. 3373–3389, 2018.
- [2] Y. Feng, N. B. Cui, Q. W. Zhang, L. Zhao, and D. Z. Gong, "Comparison of artificial intelligence and empirical models for estimation of daily diffuse solar radiation in North China plain," *International Journal of Hydrogen Energy*, vol. 42, no. 21, pp. 14418–14428, 2017.
- [3] S. Price and P. A. Flach, "Computational support for academic peer review," *Communications of the Acm*, vol. 60, no. 3, pp. 70–79, 2017.
- [4] S. Singh, A. Okun, and A. Jackson, "Learning to play Go from scratch," *Nature*, vol. 550, no. 7676, pp. 336-337, 2017.
- [5] L. M. Prevedello, B. S. Erdal, J. L. Ryu, K. J. Little, and R. D. White, "Automated critical test findings identification and online notification system using artificial intelligence in imaging," *Radiology*, vol. 285, no. 3, article 162664, pp. 923–931, 2017.
- [6] Y. J. Choi, J. H. Baek, H. S. Park, W. H. Shim, and J. H. Lee, "A computer-aided diagnosis system using artificial intelligence for the diagnosis and characterization of thyroid nodules on ultrasound: initial clinical assessment," *Thyroid*, vol. 27, no. 4, pp. 546–552, 2017.
- [7] R. Vashistha, D. Chhabra, and P. Shukla, "Integrated artificial intelligence approaches for disease diagnostics," *Indian Journal of Microbiology*, vol. 58, no. 2, pp. 252–255, 2018.
- [8] P. Chemouil, P. Hui, W. Kellerer, Y. Li, and Y. Zhang, "Special issue on artificial intelligence and machine learning for networking and communications," *IEEE Journal on Selected Areas in Communications*, vol. 37, no. 6, pp. 1185–1191, 2019.
- [9] B. Gyawali, "Does global oncology need artificial intelligence?," *Lancet Oncology*, vol. 19, no. 5, pp. 599-600, 2018.
- [10] H. W. Liu, J. P. Yin, X. D. Luo, and S. C. Zhang, "Foreword to the special issue on recent advances on pattern recognition and artificial intelligence," *Neural Computing & Applications*, vol. 29, no. 1, pp. 1-2, 2018.
- [11] K. Cao, J. Xu, and W. Q. Zhao, "Artificial intelligence on diabetic retinopathy diagnosis: an automatic classification method based on grey level co-occurrence matrix and naive Bayesian model," *International Journal of Ophthalmology*, vol. 12, no. 7, pp. 1158–1162, 2019.

- [12] X. W. Liang, Y. Y. Cai, J. S. Yu, J. Y. Liao, and Z. Y. Chen, "Update on thyroid ultrasound: a narrative review from diagnostic criteria to artificial intelligence techniques," *Chinese Medical Journal*, vol. 132, no. 16, pp. 1974–1982, 2019.
- [13] X. Yang, H. Li, L. Ni, and T. Li, "Application of artificial intelligence in precision marketing," *Journal of Organizational and End User Computing*, vol. 33, no. 4, pp. 209–219, 2021.
- [14] S. Ivanaj, G. Nganmini, and A. Antoine, "Measuring E-Learners' perceptions of service quality," *Journal of Organiza*tional and End User Computing, vol. 31, no. 2, pp. 83–104, 2019.
- [15] K. Y. Chau, K. M. Law, and Y. M. Tang, "Impact of self-directed learning and educational technology readiness on synchronous E-learning," *Journal of Organizational and End User Computing*, vol. 33, no. 6, pp. 1–20, 2021.
- [16] D. A. Hashimoto, G. Rosman, D. L. Rus, and O. R. Meireles, "Artificial intelligence in surgery requires interdisciplinary collaboration and understanding," *Annals of Surgery*, vol. 269, no. 6, p. 1, 2018.
- [17] Y. Fu, S. Wang, C. X. Wang, X. M. Hong, and S. McLaughlin, "Artificial intelligence to manage network traffic of 5G wireless networks," *IEEE Network*, vol. 32, no. 6, pp. 58–64, 2018.
- [18] X. Xiang, Q. Li, S. Khan, and O. I. Khalaf, "Urban water resource management for sustainable environment planning using artificial intelligence techniques," *Environmental Impact Assessment Review*, vol. 86, article 106515, 2021.
- [19] N. O. García et al., "Remote academic platforms in times of a pandemic," *International Journal of Emerging Technologies in Learning*, vol. 16, no. 21, pp. 121–131, 2021.
- [20] C. A. T. Romero, J. H. Ortiz, O. I. Khalaf, and W. M. Ortega, "Software architecture for planning educational scenarios by applying an agile methodology," *International Journal of Emerging Technologies in Learning*, vol. 16, no. 8, pp. 132– 144, 2021.
- [21] J. Kohoutek, R. Pinheiro, I. Čábelková, and M. Šmídová, "The role of higher education in the socio-economic development of peripheral regions," *Higher Education Policy*, vol. 30, no. 4, pp. 401–403, 2017.
- [22] A. J. Ryder, "Higher education and society ed. by Joseph L. DeVitis and Pietro A. Sasso," *Journal of College Student Development*, vol. 58, no. 6, pp. 964–966, 2017.
- [23] M. Adil, M. K. Khan, M. Jamjoom, and A. Farouk, "MHADBOR: AI-enabled administrative distance based opportunistic load balancing scheme for an agriculture internet of things network," *IEEE Micro*, vol. 42, no. 1, pp. 41–50, 2022.
- [24] L. Qiao, Y. Li, D. Chen, S. Serikawa, M. Guizani, and Z. Lv, "A survey on 5G/6G, AI, and robotics," *Computers & Electrical Engineering*, vol. 95, article 107372, 2021.
- [25] J. Y. Hong, H. Ko, L. Mesicek, and M. B. Song, "Cultural intelligence as education contents: exploring the pedagogical aspects of effective functioning in higher education," Concurrency and Computation Practice and Experience, vol. 33, article e5489, 2019.
- [26] V. L. Lowell and I. V. Ashby, "Supporting the development of collaboration and feedback skills in instructional designers," *Journal of Computing in Higher Education*, vol. 30, no. 1, pp. 72–92, 2018.
- [27] J. I. Venegas-Muggli, K. A. Muñoz-Gajardo, and M. J. González-Clares, "The impact of counseling and mathematics

- remedial programs on the academic achievement of higher education students in Chile," Journal of College Student Development, vol. 60, no. 4, pp. 472-488, 2019.
- [28] T. L. Owens, "Higher education in the sustainable development goals framework," *European Journal of Education*, vol. 52, no. 4, pp. 414-420, 2017.
- [29] H. Hu, Y. G. Wen, T. S. Chua, and Y. L. Li, "Toward scalable systems for big data analytics: a technology tutorial," IEEE

