Research on the Application of AI Technology in Early Childhood Enlightenment Education

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Abstract. The "artificial intelligence education" involved in this article mainly refers to the ability to apply artificial intelligence technology to the enlightenment teaching of AI science for young children, and to make education informatization. How to apply this to the educational concept of the new era and how to combine it effectively has become an important topic of concern to various government education departments and the public in social development. It is necessary to play the active role of various social forces, among which the importance of scientific and technological development and the role of scientific and technological personnel cannot be ignored. In fact, the emergence of artificial intelligence is based on the high efficiency required in national development and social development and the needs of people in fast-paced social life. Judging from the research results and time conditions at hand, academia and practitioners lack corresponding understanding and attention to the role of artificial intelligence in the research on early childhood enlightenment education.

Keywords: AI enlightenment education · artificial intelligence education · AI era · education · science education

1 Introduction

With the development of the times, the increase of social demand, the development of my country's teaching system has roughly gone through three stages, from the first-generation school examination system to the second-generation personalized learning system and then to today's third-generation artificial intelligence-based teaching system, namely the intelligent teaching system. Intelligent Tutoring System (ITS) plays an important role in helping learners acquire knowledge and skills without the guidance of human tutors with the help of artificial intelligence technology. [1] AI technology from only for scientific research gradually popularized into human daily life, in response to the current situation, in the rapid development of artificial intelligence technology, human attention to early childhood education gradually increased, this article through the combination of artificial intelligence technology and early childhood enlightenment education mode introduction, pointing out that in the era of big data, virtual reality technology under the artificial intelligence collaborative science and technology enlightenment education

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system is not perfect, And the current artificial intelligence collaborative early childhood science and technology enlightenment education system is analyzed to find out the imperfections, and the theoretical knowledge of artificial intelligence technology and artificial intelligence practical operation technology are deeply embedded in the daily scientific enlightenment education of young children. The scientific and technological enlightenment education for young children is not only a topic that the government education departments need to care about, but also requires scientific and technological experts and all sectors of society to continuously improve their learning ability and professional level, through the integration of artificial intelligence and the whole process of education, to construct a new ecology of intelligent education, return to the essence of education and education, and cultivate intelligent talents.

2 Literature Review

Using advanced retrieval methods on CNKI, with subject and article title as retrieval conditions, artificial intelligence and early childhood enlightenment involved in this topic as subject headings, precise retrieval was carried out without setting a time period, and a total of 18 articles were retrieved. There are 15 articles, excluding articles that are not closely related to academic research, such as "Realistic Thinking of Sexual Health Education Curriculum in Kindergarten: Background, Framework and Implementation Path", "The "Pappa di Parma" integrated approach against moderate acute malnutrition", etc. It is related to the academic research on the application of artificial intelligence in the enlightenment of young children. In general, there are few researches on the application of artificial intelligence in early childhood enlightenment. But for now, the research on the application of artificial intelligence in early childhood education has not yet had a complete system and actual teaching equipment, and further research and improvement are needed. As far as the current situation in China is concerned, the number of early childhood enlightenment education classes has been increasing every year since 2015, but the increasing trend has declined. From 1173 classes opened in 2015 to 1512 in 2016, the annual increasing status has changed from 28.9% to 27.5% until 7.8% in 2021. Its financing from AI to the education industry increased from 1 billion yuan in 2013 to 2.5 billion yuan in 2014, decreased from 2015 to the minimum of 3.5 billion yuan in 2017, and then increased to 5.8 billion yuan in 2019. It can be seen from the current situation that although the scale of infant enlightenment education is gradually expanding, the growth rate is rapidly decreasing. It can be seen that the society is gradually paying attention to infant enlightenment education, but its demand is gradually decreasing (Figs. 1 and 2).

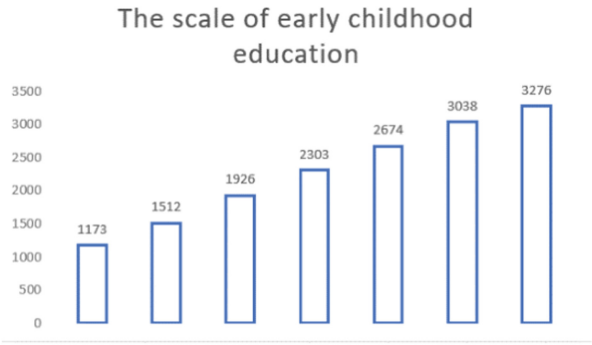

Fig. 1. The scale of early childhood education. (Photo credit: Original)

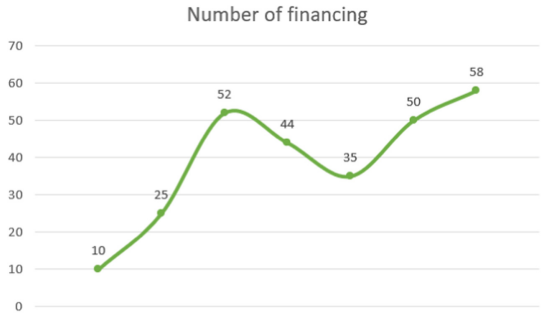

Fig. 2. Number of financing on childhood education. (Photo credit: Original)

3 Method

The integration of artificial intelligence technology and physical education curriculum ideology and politics should achieve the effect of further expanding and enriching the curriculum content. Educators should build a modern and rich network resource library based on artificial intelligence technology to provide high-quality resources for teaching design and implementation. Teachers should enter high-quality network audio-visual resources and key knowledge of teaching materials into the network resource database, and conduct data search and target positioning by setting search keywords. The massive teaching resources are reasonably classified, different types of learning packages are made according to the laws and characteristics of students' physical and mental growth, and information is pushed in a targeted manner according to the actual teaching situation. [2] The core of artificial intelligence education in the application of early childhood enlightenment education should focus on early childhood education, so the important key to solving the problem lies in how to apply artificial intelligence technology to the maximum extent in early childhood enlightenment education to help the progress and development of enlightenment education. Natural education change refers to a non-human-made educational change, with neither a special plan nor a special program. The revolution in education and teaching implemented with the help of artificial intelligence

technology is a planned change [3]. The essence of educational reform in the era of artificial intelligence is not to comprehensively negate traditional education and teaching, but to absorb and integrate the advantages of traditional education and teaching, and on this basis, to optimize the education and learning process, and to innovate the methods and means of teaching and learning, is to carry out systematic changes in the form of teaching resources, the way teaching activities are organized, the forms of learning activities, and the way of learning evaluation. [4] Through the analysis of the investigation of local early childhood enlightenment centers and kindergartens, statistics can be made of the parts of the early childhood initiation process that can be better developed with the help of artificial intelligence technology, and the results of the construction project of the early childhood enlightenment curriculum must include two parts: curriculum content and teaching practice, and the following tasks are to be completed:

1. Formulate a syllabus of early childhood enlightenment education curriculum containing artificial intelligence technology equipment, including specific course schedules, chapter arrangements of each enlightenment course, performance tracking records in early childhood courses, etc., and understand the children's personality, the current development of cognitive perception, etc. to analyze the situation of young children, and upload data, the data is private, and customized teaching plans in combination with each open platform.
2. Each lesson of the course needs to provide PPT courseware, lecture notes, record the course objectives and classroom situation; Courses need to be extended by artificial intelligence to the old-fashioned way of education, from just language teaching to social media teaching. The practical course guides and learns all aspects of children's perception on the basis of theoretical courses, and uses artificial intelligence technology to let children have their own perceptual feelings in the learning process.
3. The learning process has its own perceptual feelings. The analysis of technology cannot stop at a single design and update of many technical tools. A complete educational process requires a set of technologies that provide different functions. Various technologies perform their own functions, resulting in the fragmentation of the use of technology in the complete teaching practice. To explore the internal development logic and trend of technology, it is inseparable from the integration and perception at the systematic level. [5] The results of the construction project of the early childhood enlightenment course must include the equipment content: the artificial intelligence early childhood enlightenment education equipment mainly has three parts: the infrastructure part, the AI technology part, and the practical application part. Among them, the infrastructure part mainly includes hardware, software and infrastructure, neural networks, artificial intelligence learning, etc. The function of the AI technology layer is to combine the actual part with the infrastructure part as a springboard. Artificial intelligence can develop personalized teaching machines, which can communicate with young children according to their specific life situations, cognitive needs and personality analysis, as well as interests and hobbies, and help children to carry out all aspects of enlightenment.

4 Conclusion

By first understanding the children, according to the children's personality and various aspects of development degree input into the AI, we can know the children's personality characteristics, strengths and weaknesses, according to the situation of children for analysis. Through a specific integration analysis, with the help of AI artificial intelligence to help children to continue to cultivate their own good points, and help children to improve the growth of mistakes, help children to make up for their shortcomings. By tracking children's situation through daily teaching, teachers can record the changes of children's situation and further improve AI according to the changes of children. Into young children's life is good for AI in the limited life to help children develop vision and thinking, to apply artificial intelligence technology in the preschool enlightenment is equivalent to the database, artificial intelligence technology can not only provide database of huge reserves material can also use the mobile animation and so on can let the children accept the way to help children to learn. Infant stage to learn and grow will be targeted record and analysis, changed before a teacher more than corresponding to the present situation of the students, also improved some parents to children, give attention to two or more things AI intelligent as tools in education children, parents and teachers to shift from the position of the educators in the observer's point of view, can be better assisted help children to learn and grow.

1. Cultivate children's artificial intelligence technology. With the rapid development of society and the country, the country has gradually begun to bring artificial intelligence into the campus, and accelerated the development of emerging artificial intelligence majors and new artificial intelligence technologies, and laid out the training of data-based talents in advance; pay attention to the future of artificial intelligence education technology.
2. Help cultivate children's perception and cognition: Compared with traditional teaching methods that require face-to-face emotional communication from teachers, there may be situations where all students cannot be taken into account. The application of artificial intelligence can be popularized in schools to everyone. Students, through the research and development of the education department and the technology department, find a way for young children to learn, and use artificial intelligence to input equipment for each student's situation.
3. Improve the preliminary knowledge reserve of young children: With the development of the era of big data, the country's demand for talents has increased. Due to the increase in the average knowledge reserve content of the society, the requirements for the new generation of knowledge reserve are greatly increased. Data science-based early childhood education can use the help of artificial intelligence so that children can get appropriate and good education at an important age for intellectual development, help children find their own areas of expertise to a certain extent, and reduce the obstacles for children to enter the adolescent stage, so that children can better connect with primary and secondary schools smoothly.

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