



The Development of Intelligent Technology in Preschool Education Strategy

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Abstract. Early childhood is not only the enlightenment stage of children's intellectual development, but also the key period of children's life development. Good early childhood education can lay a good foundation for children's life development. It is of great significance to put forward the strategy of sustainable development in preschool education.

Keywords: Intelligent technology · Preschool education · Personalized recommendation · Collaborative filtering

1 The Current Situation of Preschool Education

At present, the development of preschool education in China is as follows:

1. The condition of running a school is not satisfactory. Preschool education in China is not a compulsory education stage, the state does not have a fixed financial allocation for preschool education, which to a certain extent leads to the education leaders ignore the importance of preschool education, and rarely arrange special kindergarten and employment funds for preschool education. Based on this, the school running conditions of preschool education institutions in some areas are generally poor, which are mainly reflected in the following aspects: insufficient infrastructure and backward teaching equipment; lack of some health facilities and large outdoor game facilities. The school running of preschool education institutions in remote areas often only includes a few rooms, a few tables and a few stools. The environment for children is very monotonous, which is not conducive to the development of early childhood education [1].
2. The teachers of preschool education are insufficient, and the quality of most preschool education is not high. As we all know, good teachers are an important material guarantee to ensure the quality of education, but there are some areas, especially the underdeveloped county areas, which are limited by the backward economic conditions. Their monthly income of preschool education is often lower than that of urban preschool education, and the school environment is difficult. In some areas, preschool education teachers are generally lacking. Because of this, teachers who

are willing to teach in preschool education institutions in remote areas generally do not meet the high school standard, and some even graduate from primary school, which seriously does not meet the national standard. This is also a major reason for the low quality of preschool education in most colleges and universities.

2 Problems in the Development of Preschool Education

- (1) The number of pre-school education teaching institutions is small, the teaching equipment is backward, China's rapid economic development, people's living standards are constantly improving, so people also put forward high requirements for the teaching equipment of term education, but because the number of pre-school education institutions is very limited, the number of government-owned kindergartens is very few, leading to the high cost of teaching institutions. These problems make institutions far from being able to meet the needs of parents for their children's preschool education. In addition, the only educational institutions have a limited number of teaching equipment. Some institutions even have the problems of non-standard basic equipment and seriously backward equipment, which has a great hidden danger for children's safety.
- (2) The preschool education system is not perfect. Because the development of preschool education industry in China is not long, preschool education has not formed a perfect system. Although many institutions claim to be "preschool education", the teaching content tends to be primary school. They think that preschool education is to let children feel the learning atmosphere of primary school in advance and learn the teaching content of primary school in advance. Therefore, all aspects are implemented according to the standards of primary schools, including allowing children to do a lot of homework, carrying out the so-called mid-term and final examinations, and only paying attention to the learning of Chinese, mathematics and other contents. In addition, this kind of exam oriented education leads to children's early learning weariness, which is very harmful to children's later learning career [2].
- (3) Teachers are not strong enough. Due to parents' attention to preschool education, the demand for preschool education teachers is increasing, and many preschool education graduates and teachers do not have a precise understanding of the preschool education system. Teachers have misunderstandings about preschool education, which leads to problems in students' education. Children in preschool not only have a desire to explore the world, but also have a desire to know. At the same time, their outlook on life, values and world outlook are also in a blank period, while the former teachers only pay attention to the teaching of Chinese and mathematics knowledge to students, and do not actively guide them to form correct ideas and learning habits.

Euclidean distance. It is the most widely used distance calculation method in the process of cluster analysis:

$$d(x_i, x_j) = \|x_i - x_j\|_2 = \sqrt{\sum_{k=1}^q (x_{ik} - x_{jk})^2} \quad (1)$$

Manhattan distance. It takes the absolute value of the difference between the features in each data and accumulates them:

$$d(x_i, y_j) = \sum_{k=1}^q |x_{ik} - x_{jk}| \quad (2)$$

Chebyshev. Which means to take the maximum absolute value of the difference between features in each data. The Chebyshev distance formula is shown in Fig. 3

$$d(x_i, x_j) = \max_k (|x_{ik} - x_{jk}|) \quad (3)$$

3 Countermeasures to the Problems in the Development of Preschool Education

3.1 Promote the Development of Preschool Education Institutions

Preschool education plays an irreplaceable role in the education system. The study in this period has a great impact on children's life. Children are the future of the motherland, receiving a good education is the premise of children's good growth, and preschool education is the basis of education [3]. Therefore, the state should attach importance to the construction of pre-school education institutions, so that they can be included in the national education planning. In addition, we should provide financial support for existing educational institutions, encourage and support them to improve teaching equipment, improve their own education level and teaching ability, and meet parents' needs for preschool education from multiple channels and perspectives. At the same time, educational institutions should improve their own rules and regulations, such as the establishment of a sound management mechanism for preschool teachers, innovation and development of more adaptive preschool education model. In addition, parents should also pay attention to the children's preschool education, let the children study in a better educational institution, provide a good environment for the children, cultivate good learning habits.

3.2 Guide the Whole Society to Establish a Correct Awareness of Preschool Education

Parents are the main decision-makers of children's education. There are still some parents who lack proper understanding of pre-school education, which leads to children's lack of proper pre-school education. Therefore, the state and pre-school teaching institutions can publicize the importance of pre-school education, such as holding seminars, distributing publicity materials and making various advertisements, so as to guide parents to establish correct concepts and awareness of pre-school education. In addition, preschool teachers in preschool teaching institutions should also organize more parents to visit or parent-child activities, so that they can deeply understand the importance of preschool teaching and truly understand the content of preschool teaching. For children, parents are the first teachers. Therefore, parents should not only place their hopes on preschool teaching institutions, but also imperceptibly establish a good learning environment for children, cultivate children's excellent learning habits, and set an example for children to form correct three outlooks. Parents should cooperate with pre-school teaching institutions and guide their children in the right way.

3.3 Improving the Teaching System of Preschool Education

With the development of quality education, educational institutions and teachers should change their teaching concepts and teaching purposes, and truly realize the importance of preschool education and the learning content that preschool education should have. In terms of teaching content, we should let children accept the quality teaching they should receive at their age, meet their curiosity about the world, and carry out more courses such as art, sports, music, etc., so that students can understand the world from the perspective of colorful colors and wonderful music. In addition, from the perspective of teaching mode, teachers can carry out more extracurricular activities. On the premise of ensuring students' safety, children can freely explore and feel the world, which has a great positive impact on children's life development. At the same time, teachers can actively guide students to develop correct learning habits in the term education stage, which also plays an important role in children's later learning career (see Fig. 1).

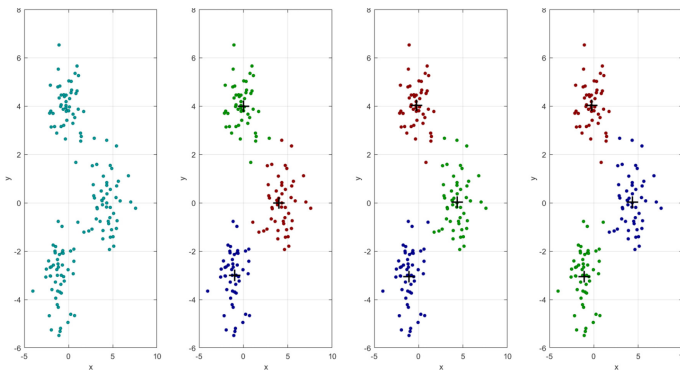


Fig. 1. Improving the teaching system simulation analysis

3.4 Improving Teachers' Professional Quality

In addition to providing financial support for preschool education, the state should also pay attention to the cultivation of preschool education teachers and the improvement of their professional quality. For example, we can set the assessment system to ensure the quality of teachers, to ensure that children get the quality of teaching. As the “impartor” of teaching content, teachers play an important role. Only by accumulating excellent professional knowledge, can they freely use what they have learned to educate and guide the development of students. All pre-school education institutions should also improve the threshold of applying for teachers, through continuous professional training, to improve teachers' teaching ability, so as to improve work efficiency [4]. Teachers should also be strictly controlled to ensure the teaching quality and teaching level of teachers, so as to ensure the development of students. Teachers should innovate and develop their own teaching forms, and use information-based teaching mode or situational teaching mode to stimulate children's interest in learning. Children are in the age of curiosity, lively

and active. Teachers should make good use of children's characteristics, improve their interest in learning, and make them develop good learning habits (see Fig. 2) [4].

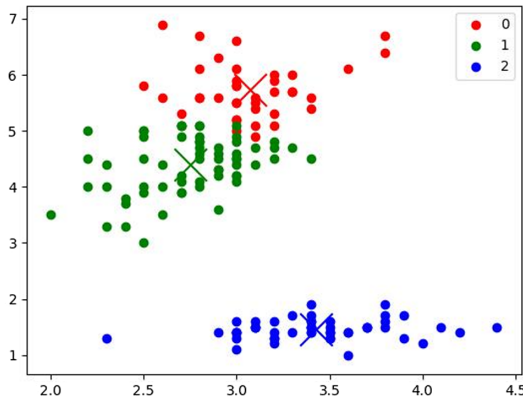


Fig. 2. Improving teachers' professional quality simulation analysis

4 Application of Artificial Intelligence in Preschool Education

The application of artificial intelligence in education has been widely studied [5]. As a basic part of the education system, it is particularly important to integrate the application of artificial intelligence into preschool education. On the one hand, the application of artificial intelligence in preschool education will improve the infrastructure environment of preschool education, help teachers improve their teaching level, help parents accompany their children more scientifically, and ultimately improve the comprehensive quality of the educated; on the other hand, the improvement of the quality of preschool education will enhance the development level of preschool education in China, To further promote the self-renewal and development of China's education, the application of artificial intelligence in preschool education mainly includes intelligent counseling, intelligent kindergarten management and intelligent wearable devices. At present, the main application products of artificial intelligence in preschool education are intelligent robots. The intelligent robots represented by alpha egg series provide high-quality educational resources for children, assist teachers to enrich teaching methods, and finally provide different solutions for different children to realize personalized teaching. The intelligent robot will discover children's potential in a certain aspect in advance from the aspects of children's learning ability, cognitive thinking and personal interest, so as to help teachers and parents better understand children and achieve the effect of teaching students in accordance with their aptitude [6]. The application of artificial intelligence in preschool education is shown in Fig. 3.

Artificial intelligence also has important applications in kindergarten management, including campus security management and early warning, The intelligent wearable devices can monitor children's health and safety in real time, Daily Mobile Smart parts

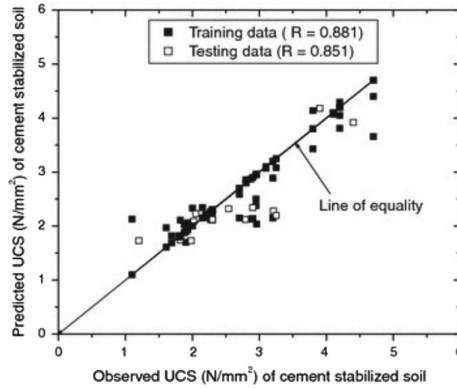


Fig. 3. Application of artificial intelligence in preschool education

monitoring data analysis to get the health status of the body, output the most reasonable diet, send to parents on time. In kindergartens, intelligent wearable devices can monitor children's physical state and timely reflect abnormal conditions to teachers. Classroom environment control devices can adjust the brightness, air, temperature and humidity of the classroom according to children's state to create the most comfortable nap environment. At present, the application of artificial intelligence products in preschool education stage is single, mainly intelligent robots, with simple functions. Scholars have little research on the application of artificial intelligence in preschool education [7]. The application of artificial intelligence in preschool education is still in the early stage of exploration. The universality of various intelligent products is low, but the potential is huge. Therefore, the application of artificial intelligence in preschool education should learn from the achievements of artificial intelligence in other education stages, expand the scope of application, enrich intelligent products, and promote the development of preschool education [8].

5 Reform of Preschool Education in China

In the era of artificial intelligence, the development concept of preschool education needs some changes. We can start from three aspects, that is, the transformation from learning style to carrying style, the transformation from curriculum teaching method to project teaching, and the transformation from short supplement teaching to long development teaching. It is a change from learning style to carrying style. It is urgent for China's preschool education to get out of the dilemma of learning orientation. At present, China's preschool education is still learning oriented. The growth and development of children's body and mind is more urgent and important than the simple "behavior change or potential for change" (that is, learning). The main purpose of preschool education is to let children grow up. We must cherish children's world and children's life, and fully understand and respect children's ideas. Preschool education activities should be carefully arranged and precisely planned, and should be child-centered and child centered, consciously making use of children's original ecological life, or even partially retaining

children's natural original ecological life. Preschool education should gradually weaken the learning orientation and give full consideration to life orientation or growth orientation [9]. The second is the change from curriculum teaching method to project teaching method. The traditional curriculum teaching method is guided by the teaching content, which aims to instill knowledge into children by teachers, and children passively accept knowledge. For some children, it is difficult to concentrate and the learning effect is poor. Project teaching is a kind of active learning and cognitive process starting with children's interest, which can promote children to carry out interesting, personalized and meaningful exploration in their own world [10]. It originates from children's interest, can balance skill learning and children's interest, pay attention to children's learning goals, and let children participate in purposeful and meaningful learning activities. In this way, it is an important direction for the development of preschool education in the future to promote the enthusiasm of children's exploration, deepen sensory understanding and achieve the best learning effect. Preschool education teaching can gradually infiltrate the project-based teaching method, integrate knowledge into the process of project exploration, and let children actively excavate and discover new knowledge, so as to achieve the teaching purpose. The third is the change from short form teaching to long form teaching. Everyone in the education of knowledge is not all necessary, so from early childhood, how to teach them the necessary ability is the most important, according to the children's talent, potential and various, interest to design personalized curriculum, try to make up for the shortcomings of education and promote the combination of education. At present, education is mostly short education, especially in the process of children's education, focusing on all aspects of training, as well as mining and making up for the shortcomings, the process is hard and easy to hit the enthusiasm and self-confidence of children's learning. The education of developing one's strong points enables teachers, parents and even children to constantly tap their own potential, make themselves more confident and actively explore the unknown. In preschool education, it can improve children's nature, potential and creativity [11].

6 Application Trend of Artificial Intelligence in Preschool Education

To explore the application of artificial intelligence in school education, firstly, select appropriate teaching activities according to the teaching methods, contents and objectives in different periods of preschool education [12]. Then, with the help of the functions and characteristics of artificial intelligence technology, get the combination point of artificial intelligence products and teaching activities. Finally, construct the application scenarios of artificial intelligence in different periods of preschool education. The application of artificial intelligence in preschool education will start from the current content of preschool education teaching activities, namely campus education, family education, preschool special education, combined with the development needs of rural preschool education, preschool education resource allocation, preschool education specialty, preschool education for special children. The application of artificial intelligence in preschool education will start from the current content of preschool education teaching activities, namely campus education, family education, preschool special education,

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6.1 Application of Artificial Intelligence in Preschool General Education

To explore the application of artificial intelligence in preschool education, first of all, select appropriate teaching activities according to the teaching methods, contents and objectives in different periods of preschool education; then, with the help of the functions and characteristics of artificial intelligence technology, find out the combination of artificial intelligence products and teaching activities; finally, construct the application scenarios of artificial intelligence in different periods of preschool education [13].

Gifted children, more emphasis on early intellectual development and enlightenment, these children in life ability and other aspects do not need too much help, the content is relatively simple. For problem children, it aims at early intervention and prevention, more is psychological counseling. According to the psychological index parameters measured by artificial intelligence, using the appearance characteristics and functional characteristics of artificial intelligence products, we patiently and gradually carry out education and guidance. For children with disabilities (deaf mute, hearing-impaired, visually impaired, mentally retarded, autistic and physically disabled), it mainly includes early rehabilitation training, education and compensation for all-round development and correction of defects, involving the early stage of 03 years old and preschool education of 4–6 years old.

6.2 The Application Direction of Artificial Intelligence in Preschool Education

The application of artificial intelligence in preschool education will start from the current development needs of preschool education, focusing on rural preschool education, the inclusive nature of kindergartens, the allocation of educational resources, preschool education specialty and preschool education for special children [14].

7 Problems in the Application of Artificial Intelligence in Preschool Education

At present, there are three problems in the application research of artificial intelligence in Education: there are few application scenarios of artificial intelligence in the process of education and teaching, lack of systematic description and evaluation system of application scenarios of artificial intelligence in campus, lack of emotional training and emotional interaction in the process of interaction between artificial intelligence products and educates. Taking this as a reference, the application of artificial intelligence in preschool education can start from three aspects.

One is to increase the research on the application scenarios of artificial intelligence in the process of preschool education. A small number of artificial intelligence education products and application scenarios are difficult to meet the “teaching” and “learning” needs of education intelligence, and are not enough to promote the development of

education intelligence. Only by proposing a series of subdivided application scenarios and implementation measures, can we meet the needs of the development of preschool education and promote the development of intelligent chemistry preschool education.

The second is the systematic description and evaluation system of the application scenarios of artificial intelligence in preschool education. The systematic description of AI application scenarios in campus should include: teaching tasks, teaching objectives, teaching modes, strategies and tools, teaching process design, teaching evaluation and so on. Perfect systematic application scenario description is an important reference to further implement the application of artificial intelligence in the field of education, which guides teachers, students, education administrators and designers of educational intelligence products to jointly realize the application of artificial intelligence in teaching. In addition, the evaluation of the application of artificial intelligence in preschool education is an important way to promote its self-renewal and development. Building and improving a scientific and comprehensive evaluation system is an important research content to promote the application of artificial intelligence in the field of education at this stage.

Children's demand for emotional care is higher, emotional training is related to children's mental health and character training is particularly important. Therefore, teachers and parents should participate in the research and development of artificial intelligence products and scene construction, and take the initiative to carry out emotional interaction and emotional cultivation with children. In addition, the change of preschool education mode should be the basis for the construction of application scenarios of artificial intelligence in preschool education. The change of education mode should be fully considered in the design of teaching content in application scenarios. It makes preschool education give full play to the advantages of life oriented or growth oriented learning style, project-based teaching method and long-term teaching.

8 Conclusion

Nowadays, preschool education has been widely concerned by the society. The development of preschool education determines the education level of children. Therefore, the development of preschool education has a long way to go. Starting from the actual situation, it is very important for the educated children to improve the teaching quality of preschool education and develop the educational hardware equipment of preschool education, which also has a positive impact on the development of preschool education.

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