

Application Of Chatgpt in The Field of Preschool Education from The Perspective of Personalized Learning

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Abstract. With the rapid change in science and technology, ChatGPT has become a topic of concern in all walks of life, and ChatGPT's development in education has also received extensive attention. This paper explores the application of ChatGPT in the field of preschool education against the background of John Dewey's child-centered theory in educational practice. ChatGPT's education model is of great significance to the current way of children's education, which is conducive to further optimizing the comprehensive reform of the kindergarten curriculum. Through the conclusions, it is concluded that ChatGPT can better promote the innovation and progress of education in preschool education. Based on this, this paper puts forward the following suggestions: firstly, the new artificial intelligence should be applied in preschool education from many aspects. Secondly, the use of new artificial intelligence in home, school, and social education can better realize the reform and innovation of education. Finally, the use of new learning methods can promote the development of children's abilities and provide a more personalized learning experience.

Keywords: Child-centered; personalized learning; preschool education; ChatGPT; new artificial intelligence and educational reform.

1. Introduction

Preschool education is currently in a new stage of high-quality development, and it should shift from the scale and growth of preschool education to the quality and connotation of development, ChatGPT is a high-quality and novel tool for developing the quality and connotation of education. ChatGPT can focus on the optimization of preschool education resources, from blind selection to precise input, to maximize the input and output of preschool education and further improve resource efficiency.

The significance of Dewey's child-centric theory is to shift traditional education from the center of educational disciplines to the center of the child itself. The theory argues that education is purposeless and that it is the child himself that needs to be focused. Education is growth, education is life, and education is the transformation of experience. These three are "interrelated and inextricable" and establish a problem-centred curriculum system, where children gain knowledge and abilities from what they do and learn by doing. This paper uses the personalized learning system for children to analyze the opportunities and challenges brought about by the use of new artificial intelligence in preschool education for teachers and children themselves.

2. Conceptual Interpretation

2.1. Dewey's Child-Centered Theory

Dewey was a famous American philosopher, psychologist, and educator. John Dewey advocated a child-centered approach to education. "Education is growth, education is life, and education is the continuous transformation of experience" is Dewey's educational philosophy. He advocated that teaching activities should be student-centered and that individualized qualities such as students' needs, abilities, interests, and hobbies should be developed. Dewey believed that children are the starting point of teaching, and education and teaching should fully respect the individuality of students, so the teaching process is not the inculcation process of established knowledge, but the natural process of students' various abilities and natural development. The final foothold of preschool education reform

is teachers, so in today's education reform, teachers need to find the most suitable education method for young children. Interest is the driving force of children's learning, and interest has two meanings here, one refers to interest as the unity of subjective attitudes and objective objects, and the other refers to interest as an intermediary connecting the beginning and end of activities. Once a child is interested in a teaching activity, he will be very concerned about the impact of the activity on him, and then the child will develop the teaching activity in a better direction according to his subjective desire, that is, to let the expectations or foresight of the teaching activity. Therefore, education should fully respect children's instincts and instincts, and teaching activities should give full consideration to children's needs and interests [1].

2.2. Individualized Learning

Individualized learning is one of the important assertions of child-centered theory. The ancient Chinese Confucius held that teaching should be done in different ways according to the differences and characteristics of the learning objects so that everyone can develop according to their own needs, that is, teaching should be different from person to person. The U.S. Department of Education has put forward the importance of students' learning needs and proposed that the learning pace and teaching methods should be tailored to the learning needs of each learner. Through the analysis of relevant literature, Luo Xin believes that personalized learning mainly has the following characteristics: the difference in learning goals, the customization of learning content, the diversity of learning resources, the autonomy of learning methods, the multiplicity of learning effects, and the diversity of learning evaluation [2]. Kindergarten personalized development refers to the kindergarten education process, teachers and students through interaction, pay attention to the unique personality and development needs of each student, according to the student's personality characteristics, interests, hobbies, ways of thinking, behavioral habits, etc., to take corresponding educational measures to meet the individualized psychological, educational and behavioral needs of children, and promote the comprehensive development and healthy growth of children.

3. The Use of ChatGPT in Preschool Education from the Perspective of Personalized Learning

3.1. Achieving Personalized Education

The key to improving the quality of preschool education is to ensure that all children can receive high-quality preschool education. The criteria for measuring the quality of preschool education mainly include "process quality" and "structural quality", among which process quality has a more significant impact on children's development [3]. ChatGPT, as an artificial intelligence in the new era, has greatly improved the quality of teaching through the mode of personalized education compared with traditional education methods. ChatGPT guides children's development according to each child's different interests and learning characteristics. ChatGPT can stimulate children's creativity and imagination, as well as their language skills. ChatGPT can generate a complete picture book story that meets children's interests based on children's initial ideas or the beginning of a story. This interaction stimulates children's creativity and imagination, allowing them to conceive and create their own stories in an open environment. Children can then further enrich the details of the story based on the story synopsis generated by ChatGPT, and in the process, they can exercise their imagination and innovative thinking. In the process of interacting with ChatGPT, young children need to express their ideas and story synopsis clearly, which helps to improve their language organization and expression skills.

ChatGPT also has instant feedback, and conversation features that can encourage young children to participate more actively in conversations and improve their language skills. Digital technology can stimulate children's creativity and problem-solving skills. Through the use of creative design software, programming tools, etc., young children can engage in creative activities that develop their

creative thinking and problem-solving skills [4]. A kindergarten in Nanjing participated in the Jiangsu Province Youth Artificial Intelligence Activity Bionic Creative Robot Challenge. Young children participate in the Biomimetic Creative Robotics Challenge, which often requires them to design and build robots that mimic biological characteristics. This activity encourages children to think outside the box and find innovative ways to solve problems. In the face of challenges and difficulties, they need to constantly try, adjust, and improve their designs, to exercise their innovative thinking and problem-solving skills. Children can experience the charm and practicality of technology, which stimulates their interest and love for technology. It can cultivate children's spirit of exploration and make them willing to take the initiative to learn and try new technical knowledge and skills. Robotics challenges often require young children to work together in teams where young children need to learn to communicate, collaborate, and share resources with others to achieve common goals. Through activities, children can improve their teamwork and communication skills and lay a solid foundation for future studies and work. Currently, many AI education tools are being used to develop learners' basic literacy skills, subject teaching, and STEM education, and to develop students' curiosity, initiative, creativity, teamwork, and adaptability [5]. Teachers should teach discrete technology skills to students and train them to become confident, lifelong technology users and tech-savvy problem solvers [6]. Preschoolers are curious about their surroundings and love to explore the unknown. Respect the child and do not rush to judge him for good or bad [7].

They will take the initiative to ask questions, actively observe and think, carry out thinking activities through personal experience and cognitive perception, mainly rely on their intuition and imagination, and confirm through experiments and problem-solving, and their cognitive abilities are greatly improved at this stage. They begin to form simple concepts, can understand simple logical relationships, and begin to use language to communicate and express. It has unique advantages in observation, imagination, and memory. Therefore, attention should be paid to cultivating preschool children's language ability, observation ability, and memory ability in teaching. ChatGPT can provide a personalized learning experience based on children's interests, abilities, and learning progress. This kind of customized teaching can stimulate children's interest and motivation to learn and promote their personalized development.

3.2. Support for Personalized Learning

In personalized education assistance, ChatGPT can provide personalized learning suggestions and resource recommendations for each child by analyzing children's language habits and interests. ChatGPT uses advanced and natural language processing technology to understand each child's different interests, learning styles, and needs, to provide them with customized teaching content. This individualized instruction meets each child's unique learning needs so that they can thrive in the learning environment they are interested in. First of all, it promotes children's reading level and language ability, and ChatGPT can recommend suitable picture books and reading materials according to children's reading level and interests, to improve children's reading interests and abilities. ChatGPT can provide a personalized learning experience based on children's interests, abilities, and learning progress. This kind of customized teaching can stimulate children's interest and motivation to learn and promote their individualized and all-round development. In the course of daily life, young children can explore and try different challenges independently, which helps to develop their self-exploration skills. Secondly, ChatPGT has intelligent Q&A and learning guidance. ChatGPT can be used as an intelligent question-answering system, which can respond to various questions raised by children promptly and guide them to explore learning. At the same time, ChatGPT can also adjust teaching strategies according to children's learning progress and feedback and provide more accurate learning guidance. Allowing children to ask questions and solve problems independently through the interactive process can help them gradually build up the awareness and ability of independent learning, which is also very important in children's future development, helping them to solve problems through independent thinking without panic when facing difficulties and problems.

3.3. Diversified Use of ChatGPT

According to SCDN data, the cost of economic, time, and knowledge required for children to hire a tutor has far exceeded the cost of using ChatGPT as a tutor. For example, the economic cost of both parties, ChatGPT as an online intelligence tool, has higher convenience and lower cost, if parents choose to use ChatGPT as a teacher, then the price can greatly alleviate the financial pressure on the family. In terms of time cost, ChatGPT can also achieve the goal of saving and efficiency, so that children can better and more reasonably allocate their time to complete what needs to be done. ChatGPT can also provide children with real-time help and diversified learning resources so that children can quickly understand and obtain timely learning resource information. In the process of children's learning, teachers of different subjects need to be invited for different subjects, and the knowledge of individual subjects is limited, and the knowledge of individual subjects cannot be answered in every field of the five fields, but ChatGPT can do all subjects, all fields, all knowledge, and all can answer children's questions, starting from the five major areas to extend to every subtlety.

4. Suggestions on the Use of ChatGPT in Preschool Education

4.1. Using ChatGPT to Promote Home Cooperation in Preschool Education

Co-parenting in kindergartens may encounter the problem of lack of professionalism, and the lack of professional guidance and help in the families of young children requires the guidance and help of teachers [7]. Although kindergartens and families attach great importance to home co-education, the education carried out by kindergartens using home co-education is more at a low level. The two sides exchange information about children at home or in kindergarten through "individual communication" or "group communication", especially after discovering certain problems in children's mental health, focusing on communication and discussing strategies. The combination of home co-education and children's mental health education is not deep. Therefore, ChatGPT can also be very flexible to help kindergartens establish an online platform for home-school interaction, upload the data of each child promptly, and parents can understand the educational activities of the kindergarten and the performance of children in the curriculum through the platform, and can understand the children's learning and life in school in real-time. Parents can also use the platform to communicate with teachers online, ask questions, or share their homeschooling experiences. Parent-kindergarten cooperation is an important prerequisite for the healthy development of young children and their early childhood education, and educators play an important role in the initiation of this partnership [8].

4.2. ChatGPT's Strategies for Improving Teachers' Literacy

Teachers should adopt a variety of teaching methods to enable students to better grasp knowledge in a relaxed and enjoyable learning atmosphere [9]. Teachers can use ChatGPT to access a large number of teaching resources from the Internet, covering different topics and different levels of difficulty. This helps teachers to better prepare their teaching content and improve teaching effectiveness. By using ChatGPT, teachers can provide more flexible teaching methods, and ChatGPT can automatically adjust the teaching content and difficulty according to the learning situation and needs of students and provide students with more personalized teaching services. This flexibility allows teachers to better adapt to the needs of different students, increasing students' interest and motivation in learning. Digital technology can provide personalized learning content and teaching methods according to children's individual differences and learning needs. By using learning software or online education platforms, teachers can provide children with challenging and adaptive learning tasks based on their learning level and interests, helping them better develop their potential [10]. As educators, teachers need to promote educational innovation, and through rich educational resources, teachers can be stimulated to think more innovatively in education and promote the development of education. By using ChatGPT, teachers can communicate and interact with students more conveniently, keep abreast of students' learning and needs, and better guide students' learning. At the

same time, ChatGPT can also provide personalized teaching suggestions and feedback for teachers, helping teachers improve their teaching methods and improve teaching effectiveness.

5. Conclusion

ChatGPT can better promote educational innovation and improve teaching quality in preschool education, whether it is from the perspective of young children or teachers as educational innovators. In the context of the high-quality development of contemporary preschool education, ChatGPT technology provides children with a more personalized learning experience, which is difficult to meet in traditional education, and also provides teachers with more efficient and convenient teaching support. However, Dewey's child-centered theories continued to evolve and develop. Future research could explore the role of ChatGPT in supporting child-centered learning environments, the impact of teachers' use of ChatGPT in implementing child-centered practices, and the role of evaluation in ensuring that all students reach their full potential. However, preschool education also needs to pay attention to the potential risks and challenges of ChatGPT, such as privacy security, information security, and other issues, and make reasonable use of ChatGPT technology to ensure its healthy and sustainable development in the field of education.

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