Research on the Effect Realization Path of Smart Classroom Technology on Children's Learning

Qinyu Gao[1,*]

[1]Department of Xuzhou University of Technology, Jiangsu, China

*Corresponding author: 20210202238@xzit.edu.cn

Abstract:

With the development of science and technology, people pay more and more attention to the field of education, and a lot of attempts have been made in the field of education. Smart classroom is a new teaching mode, which combines traditional learning methods with information technology. It plays an important role in enhancing children's learning interest, improving teaching quality and promoting children's all-round development. This paper takes the practice and application of smart classroom in kindergarten as the research object, combines the characteristics of children's cognitive development and smart classroom teaching mode, and takes promoting children's all-round development as the starting point, analyzes the curriculum content, teaching methods and learning environment, and explores the specific application path of smart classroom technology in kindergarten teaching, with a view to providing references for educators. To promote the development of early childhood education.

Keywords: Wisdom education; wisdom classroom; early childhood education.

1. Introduction

With the rapid development of the Internet, new media technology has been widely used in the field of education. Smart classroom is a new education model that uses artificial intelligence, cloud computing, internet, and other technologies to provide personalized services for teachers and students in learning environment, teaching content, teaching methods, teaching management and other aspects. It combines traditional learning methods with information technology, which plays an important role in enhancing children's learning interest, improving teaching quality and promoting children's all-round development. Early childhood is the fastest developing period in people's life, they understand the world by perceiving things and learn various knowledge and skills. At this stage, preschool teachers should make full use of smart classroom technology to provide a good learning environment for children, improve children's learning interest and learning efficiency through technical means, and lay a solid foundation for their future development. „3-6 years old Child Development Guide"[1] also clearly points out that children's intellectual education should be carried out according to the characteristics of children's development, learn

„how to learn", and acquire shallow knowledge and skills. This paper takes the practical application of smart classroom in kindergarten as the research object, combines the cognitive development of children and the characteristics of smart classroom teaching mode, and aims to promote the all-round development of children as the starting point, analyzes the curriculum content, teaching methods and learning environment, and explores the specific application path of smart classroom technology in kindergarten teaching.

2. The Definition of the Wisdom Classroom

Smart classroom is a new type of classroom teaching model based on new technologies. Using mobile Internet, artificial intelligence, cloud computing and other technologies, personalized learning environment is built to achieve personalized teaching. Wisdom classroom has the following characteristics:

1. Intelligence occupies a core position in the wisdom classroom. It uses computer technology, network communication technology and other cutting-edge information technology to provide comprehensive support services for education [2]. In this way, teachers can use advanced

information technology to build an intelligent learning environment in which students can learn and grow. In the smart classroom, intelligent terminal devices such as computers are no longer just tools to transmit information, they have become the center of intelligent interaction and data interaction. These terminal devices can collect, analyze, and process children's learning content in real time, to provide strong support for children's personalized learning.

2. Personalization is also essential in the wisdom classroom. Smart classroom to meet the individual needs of children as a starting point, carefully designed learning environment and curriculum resources. This is helpful for students to establish their own logical relationship between the original knowledge, new knowledge, and other knowledge, and provide objective scientific basis for them to make learning path decisions[3]. Through the blessing of artificial intelligence technology, the wisdom classroom can have an in-depth understanding of each child's cognitive development level and interests. Based on this data analysis, Smart Classroom provides tailored courses and resources for young children to ensure that each child can get a learning experience that suits them in the process, and on this basis, constantly improve their own abilities.

3. Convenience is another highlight of wisdom classroom. Relying on advanced technologies such as mobile Internet and cloud computing, smart classroom realizes the digitalization and mobility of teaching resources as well as personalized management and push. This means that, whether at home or at school, young children can easily access curriculum resources and information about learning activities through mobile terminals. At the same time, this convenience also greatly facilitates teachers to carry out personalized teaching activities, making teaching activities more accurate and efficient. In addition, smart classroom supports diversified teaching models and learning methods, so that online and offline learning methods can be effectively combined to meet the needs of children of different ages and different learning needs.

4. Contextualization is another feature of the wisdom classroom. Through a variety of teaching methods such as situational simulation and situational experience, children learn knowledge and skills in actual situations and experiences, which significantly enhances the learning effect. This teaching mode breaks through the traditional concept of „teacher center, textbook center and student center" in traditional teaching, but takes „Internet +" as a supporting platform to provide children with a learning environment and curriculum resources that combine virtual and reali-

ty. The key of learning situation adaptation is to identify learners, determine learning tasks and determine learning needs [4]. In such a classroom, the interaction between teachers and students is no longer a one-way infusion teaching, but a two-way deep communication. Wisdom classroom has completely changed the past kind of „infusing" teaching method, and adopted a livelier and more interesting, interactive teaching method, which greatly stimulated children's learning interest and enthusiasm.

3. The Necessity of Applying Smart Classroom to Kindergarten Education

3.1 Benefits for Children's Cognitive Development

The so-called information literacy is the ability of individuals to master and use information technology, which includes the ability to obtain information, identify information, analyze information, process information, and use information technology. It is especially important in the early years of young children's education because this is the golden age for them to form their cognition and explore the world. Their cognitive system is in a stage of rapid development, which is mainly reflected in three aspects: perception, cognition and understanding. In such a critical period, through teaching means such as smart classroom, young children can access a variety of information resources in a pleasant and interactive learning environment, thereby enriching their sensory experience and cognitive structure. This can not only stimulate their curiosity and thirst for knowledge, but also help them build sensitivity and discernment of information, laying the foundation for comprehensive and lifelong learning in the future [5].

The introduction of smart classroom means that educators can design more flexible teaching content and present abstract knowledge to children in a vivid and interesting form. This teaching mode encourages children to take the initiative to participate, through hands-on operation, discussion, communication, group cooperation and other forms, let them learn and think in practice, not only helps them to build a complete knowledge system, more importantly, but also cultivate their independent thinking and independent learning ability. In such a classroom, each child could become the master of their own learning, and the teacher acts as a guide and companion to guide them along the right learning path, and provides timely feedback and guidance to ensure that they are able to master the content.

3.2 To Improve Teaching Efficiency, Increase Interest in Learning

Smart classroom is a teaching mode based on new technology, which has certain advantages compared with traditional teaching mode. In the smart classroom, teachers can use multimedia technology to enrich the teaching content and teaching forms, change the shortcomings of traditional teaching methods that are too dull and single, and improve the teaching efficiency and quality [6]. In addition, the wisdom classroom can fully stimulate children's interest in learning, so that they can obtain knowledge in independent exploration, cooperation, and communication [7]. To a certain extent, wisdom classroom can help children change the shortcomings of passive learning and mechanical memory, and stimulate their interest and enthusiasm for learning.

For example, in the teaching process of „Beautiful Hometown", the teacher can use the function of smart classroom to design a series of interesting questions and rich activities. This not only allows children to change from passive acceptance of knowledge to active exploration of knowledge, but also through practical activities, allow them more deeply understand and master the beautiful natural scenery of their hometown, local customs, and other related knowledge. In addition, teachers can also use the smart classroom to design some environmental protection issues, so that children can actively think about how to protect the environment, and cultivate their environmental awareness and responsibility.

3.3 Benefits for Children's Personalized Development

Driven by smart classroom technology, researchers get a glimpse of the new landscape of future education. This technology, with its highly personalized characteristics, opens a whole new dimension for early childhood education. When teachers use smart classroom technology to teach, they are no longer the subject of one-way knowledge transfer, but become a key role in guiding and stimulating the personalized development of children.

Smart classroom technology provides a personalized learning environment by tapping into the unique personalities and needs of young children. It not only considers the differences between children, but also carefully designs the learning path suitable for each child. In this teaching model, each child can be regarded as a unique individual, and their interests, hobbies, and personality traits will be fully respected and utilized.

For example, if a child is particularly interested in cars, he can click on the screen and choose the car he likes. For those who like insects, they can see pictures and descriptions of butterflies. Such personalized settings not only increase the fun of learning, but also greatly improve the efficiency of learning. In such a situation, children naturally learn how to choose the right toys, and have a strong interest in these items, to achieve the purpose of personalized development [8].

The application of smart classroom technology is not limited to providing rich and diverse learning resources. It also uses data analysis to help teachers better understand each child's learning progress and preferences, thereby providing more precise and personalized guidance and feedback. This dynamic learning process allows young children to try new things in a safe and protected environment, boosting self-confidence and promoting the development of innovative thinking and problem-solving skills.

3.4 Benefits for Strengthening Teacher-student Interaction

Under the traditional teaching mode, the interaction between teachers and children is often limited, and the education mode is biased towards one-way indoctrination, which ignores children's subjectivity and sense of participation to a certain extent, making it difficult for them to have a lasting interest in learning. In the classroom, the teacher's words dominate the whole teaching process, and children are more like passive receptors for knowledge rather than active partners in exploring new knowledge. Such an environment makes it very difficult to develop children's interest in learning, because they lack the opportunity to gain a sense of accomplishment through their own efforts and discoveries.

However, with the introduction of smart classroom technology, all this is changing. In the smart classroom, teachers can use advanced information technology to monitor each student's learning situation in real time and give timely feedback. This kind of instant communication not only improves the efficiency of teaching, but also allows teachers to quickly understand the specific problems encountered by students in learning. When students encounter difficult problems, they can seek help through the online question-and-answer system in the smart classroom, and teachers can also get instant information feedback through these interactions, to adjust the teaching strategy.

In addition, the wisdom classroom also increases the depth of interaction between teachers and students. In this process, students are no longer isolated individuals, but become little masters who actively participate in dis-

cussions and learning in the classroom. The interaction between teachers and students can not only stimulate students' enthusiasm for learning, but also help teachers to better understand each student's learning characteristics and needs, and provide them with more personalized guidance and support. This mode of interaction promotes mutual understanding and respect between teachers and students, and at the same time enhances the attraction of the content, making learning a fun and fulfilling experience.

4. The Specific Application of Wisdom Classroom in Kindergarten Teaching

The specific application of smart classroom in kindergarten teaching is mainly reflected in three aspects: curriculum content, teaching method and learning environment.

First, the teaching method using smart classroom technology can make the educational content in a more refined and efficient form among children. This method greatly simplifies the process of knowledge transfer, makes it flexible and fast to show to children, and allows children to master and absorb the knowledge more easily. For example, in science activity programmers, children are usually curious about phenomena in the natural world but often find it difficult to explore them in depth due to age and cognitive level constraints. At this time, teachers can use the smart classroom system to decompose complex scientific principles into specific and intuitive questions, and then display these questions through various forms such as videos, animations, or interactive games, to guide children to think and explore from multiple angles, thus stimulating their internal interest and promoting their independent exploration and learning.[7]

The traditional teaching method mainly consists of teachers teaching knowledge content, which has certain limitations. The smart classroom technology can strengthen the communication and cooperation between teachers and children. In a traditional classroom, teachers may impart information to students mainly in one direction, while the smart classroom provides a platform where teachers and young children can interact in real time, share information, and discuss issues together. This not only enhances the emotional connection between teachers and students, but also enables teachers to timely understand the cognitive development and ability development of children, to make more personalized educational guidance. In addition, smart classroom can also apply multimedia technolo-

gy to classroom teaching, and display courseware content and video effects through multimedia technology; Virtual reality technology can also be used to simulate the scene; Big data analytics techniques are also available to analyze data on students' learning behaviors [9].

Finally, the smart classroom can also provide more interesting learning environments for children. Smart classroom technology can collect a wealth of learning resources, and smart classroom platform integrates many high-quality education resources, including but not limited to physical geography, human history, and other fields of information. These resources are not only diverse, but also beautifully designed and can be presented to young children in the intuitive form of pictures and videos, which greatly attracts their attention and inspires their enthusiasm to explore the unknown world. Smart classroom can also combine relevant knowledge points with multimedia materials such as pictures and videos to create an interactive learning experience. In this way, children can either watch relevant video content, or participate in virtual questions and answers, discussions, and group activities. This comprehensive learning method can significantly improve their independent learning ability and inquiry ability.

In addition, the smart classroom also introduces virtual reality technology, through the construction of realistic virtual scenes, so that children can feel a variety of situations, to deepen the understanding and memory of knowledge. This immersive way of learning not only improves children's interest in learning, but also greatly improves their ability to learn independently. Through these technologies, the smart classroom creates a well-rounded environment for young children, promoting their intellectual development, emotional expression, social skills, and physical motor abilities.[10]

5. Conclusion

Under the background of the new era, early childhood education has shown a trend of informatization and modernization, and the mode of „Internet + education" has gradually entered the daily teaching of kindergartens. Based on the characteristics of children's cognitive development and smart classroom technology, this paper discusses the specific application of smart classroom in kindergarten from three aspects: curriculum content, teaching method and learning environment, to promote the all-round development of children.

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