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Research on Artificial Intelligence Education Practice in Primary and Secondary Schools Based on STEAM Education Concept

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Abstract

The development of economy promotes the arrival of the era of artificial intelligence, not only become an important part of People's Daily life, but also promote the rapid development of education, so that education reform and innovation. However, education develops with the development of the new era. With the increase of people's attention to the development of artificial intelligence education in primary and secondary schools, more stringent requirements are put forward for artificial intelligence education in primary and secondary schools, so as to cultivate students into qualified talents with good intelligence literacy. At the same time, in order to promote the better development of society, more talents with innovative ability and divergent thinking ability are needed, and STEAM education is suitable for it. Based on this, this paper introduces the practical research of artificial intelligence education in primary and secondary schools based on the concept of STEAM education in detail.

Keywords

STEAM education concept, artificial intelligence education, in primary and secondary schools

Introduction

With the mature development of information technology, school teaching has also changed. Primary and secondary schools are an important period for students to grow up, which plays a promoting role in the cultivation of students' learning habits and the establishment of lifelong learning concepts. Therefore, teachers need to guide students correctly. The integration of STEAM education concept in teaching and the study of artificial intelligence education model in primary and secondary schools can maximize the stimulation of students' interest in learning, promote the improvement of students' learning ability, so as to promote the all-round development of students.

1. Practical significance of artificial intelligence education in primary and secondary schools under the concept of STEAM education

1.1 Stimulate students' interest in learning

In general, the concept of STEAM education is project-based and task-driven, which stimulates students' interest in learning and makes them more willing to engage in classroom teaching. The combination of STEAM education concept and artificial intelligence education can make traditional programming teaching full of fun. Students can learn from each other and make progress together in a group cooperative learning method. Therefore, under the concept of STEAM education, artificial intelligence education in primary and secondary schools is easier to stimulate students' interest in learning, make students invest more in practical learning related knowledge, and promote the formation of students' learning habits.

1.2 Play the main role of students

The concept of STEAM education is student-oriented, and the teaching methods and teaching concepts contained in STEAM reflect the dominant position of students. At the current stage, with the effective implementation of the new curriculum reform and quality-oriented education, the student-oriented and teacher-assisted teaching method is vigorously promoted, and STEAM education is just in line with it (Zhou Jie, 2022). The content of artificial intelligence education design is relatively extensive. Teachers take student-oriented teaching methods, which can not only play the main role of students, but also activate the classroom atmosphere. Therefore, the artificial intelligence education in primary and secondary schools under the concept of STEAM education highlights the dominant position of students, which is conducive to the improvement of teachers' teaching efficiency and quality, and also enables students to apply what they have learned.

2. Analysis of artificial intelligence education model in primary and secondary schools based on STEAM education concept

2.1 Setting the Situation

It is very important to set up the situation in any teaching process, and it is also necessary to ensure the authenticity, interest and diversity of the situation. This requires teachers to have rich knowledge and set up real situations for students that are both interesting and can learn more knowledge. In the process of setting the actual situation, teachers need to have a comprehensive understanding of the explanation content, and also need to ensure that it can be better applied in real life. In short, the setting of the situation not only needs to meet the needs of students for knowledge, but also should cultivate students' learning enthusiasm and problem-solving ability in the situation. It is particularly important to note that teachers need to appear from actual life to ensure that the setting situation can be appropriate.

2.2 Thinking Questions

After setting up the situation, teachers need to raise questions related to the principles of intelligence and algorithm in artificial intelligence, so as to stimulate students' thinking. In the actual teaching process, teachers need to reasonably design the difficulty of questions according to the actual situation of students, and combine them with students' actual cognition to maximize the desire of stimulating knowledge exploration. At the same time, teachers guide students to conduct in-depth research on problems, put forward specific solutions, and encourage students to express their own ideas and suggestions (Lu Yu, 2020). In this way, students can not only cultivate their autonomous learning ability, but also learn to communicate and cooperate, and have a deeper understanding and application of the principle of intelligence and algorithm. At the same time, students can also improve their problem exploring ability and communication ability in this process.

2.3 Organizational Inquiry

Organizing inquiry in the teaching process is the most important and the most difficult part to design. Although artificial intelligence education practice is different from traditional theoretical education, if there are problems in the design, it will not stimulate students' interest in learning. Therefore, the teacher can to STEAM the education idea as the premise, using the project as the guidance, combining with the knowledge of physics, Chinese, and artificial intelligence in education program design, combining the practice operation, maximize play STEAM education function, the prompting students research ability, divergent thinking and logical thinking ability to ascend.

2.4 Display and Evaluation

Display and evaluation can promote teachers and students to better understand the teaching and learning results, so as to timely adjust and improve their own teaching and learning. The application of artificial intelligence education communication can make full use of STEAM reflection and evaluation of education concept, optimize and improve the design and with PPT show results, and integrated into the questions and discussion, through self assessment, evaluation methods such as others, encourage students to good development, it can lead to an improvement in students' innovative ability and thinking ability.

3. Practical measures of artificial intelligence education in primary and secondary schools based on STEAM education concept

3.1 Take students as the center

Under the concept of STEAM education, artificial intelligence education in primary and secondary schools needs to be student-centered. Therefore, in the process of classroom teaching and practice, it is necessary to meet the requirements of students and highlight the subject status of students. While AI education helps students accumulate more knowledge of programming and robot design, it also develops practical skills, communication skills and problem solving skills. But artificial intelligence education smoothly is the premise of need to fully stimulate students' interest in learning, so teachers need through diversified teaching methods, to maximize stimulate students to explore the desire, can take advantage of the multimedia broadcast video data related to this course to students, teachers and students to discuss the knowledge in life, and through the game teaching method, to explore the knowledge content, So as to focus students' attention and enable them to learn more knowledge (Zhang Panfeng, 2022). In a word, it is necessary to take students as the center, play the main role of students, and fully consider the ideas and suggestions of students, so that the STEAM education concept can be combined with artificial intelligence education to achieve the ideal effect.

3.2 Use diversified evaluation methods

Under the concept of STEAM education, evaluation activities are carried out in the process of artificial intelligence education in primary and secondary schools, which is the process of students' inquiry, thinking and solving problems. Therefore, teachers need to adopt diversified evaluation methods to evaluate students' learning process, understand students' learning changes in detail, analyze students' behaviors and facial expressions, etc., so as to correctly evaluate students' learning effects. Teachers record and evaluate students' learning, which can help students develop good learning habits, learn more knowledge, and achieve the ideal goal of artificial intelligence education. In addition, teachers can evaluate their own teaching according to the evaluation results and give timely feedback to students, so that students can have a comprehensive understanding of themselves and make their learning more targeted (Li Tianyu, 2020).

3.3 Establish a new education concept

Based on STEAM under the education idea of artificial intelligence in education, teachers need to set up the new education idea, break the shackles of the traditional exam-oriented education mode, in particular: (1) the teacher should to physician to itself is the designer of the artificial intelligence education, need to STEAM education related theory as the premise, set up the real problem situation, maximize stimulate students interest in learning (Shu Derong, 2020). (2) The teacher is the instructor and guide of the classroom. The teacher should always take students as the center, give play to the subjective initiative of the students, and solve the students' confusion in time. (3) Teachers are the assistants of students. Teachers should create a good learning environment for students and provide more teaching resources. At the same time, teachers also need to integrate with students, encourage students to imagine boldly, and promote students to achieve better self-worth as friends.

4. Conclusion

In a word, artificial intelligence courses in primary and secondary schools under the concept of STEAM education can not only cultivate students' innovation ability, but also improve students' divergent thinking ability and innovation ability. Therefore, teachers need to fully realize the importance of STEAM education concept, stimulate students' interest in learning and focus their attention through diversified teaching methods, so as to promote students to learn more knowledge and promote their all-round development.

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