Analysis of Multimedia Environmental Education Mode for Primary School Students under the Internet of Things Environment

Junli Wu

Guangzhou YiTuo Property Management Co., Ltd., Guangzhou, 511400, China

Abstract: At present, environmental problems are becoming more and more serious, and environmental education for primary school students is more profound. To help primary school students to establish a positive concept earlier, it is necessary to combine traditional environmental education mode with Internet of Things multimedia. Therefore, in the process of analyzing the multimedia environmental education mode of primary school students under the Internet of Things environment, this paper mainly studies the two aspects of educational content and educational mode reality to help primary school students establish a good concept of environmental protection.

Keywords: Internet of Things; Primary school students; Multimedia; Environmental education

1. Introduction

The development of science and technology has made people more aware of the close relationship between human beings and nature. While people's awareness of environmental protection is constantly increasing, they realize that environmental awareness needs to be cultivated from an early age, starting from primary school students, and based on the principle of education-based, fostering environmental awareness among primary school students, increasing their environmental protection knowledge, and enabling primary school students to do more things that can do in environmental protection to help students develop the habit of consciously fulfilling their environmental obligations[1]. However, as far as current education is concerned, it is difficult for primary school students to actually enter environmental education in real life. Although teachers and parents use a lot of textbooks and pictures to explain for students in daily life, it is still difficult for students to form environmental awareness. Therefore, with the continuous development of the Internet of Things, in order to educate primary school students on environmental protection, it is necessary to reform the traditional education mode, combine the primary school students' environmental education with the Internet of Things technology, and combine the cultivation of students' ability with practical teaching. In the teaching process, teachers need to actively explore the reasonable teaching mode, based on which students' environmental awareness and ability are cultivated[2]. The combination of multimedia teaching and environmental protection teaching under the Internet of Things technology can solve the problems in the traditional education mode. Under the Internet of Things environment, the multimedia environmental education mode for primary school students can effectively increase the exposure of primary school students to learning resources, reduce the dependence of students on teacher resources, and increase the learning interest of primary school students.

2. Design of Multimedia Environmental Education Mode for Primary School Students under the Internet of Things Environment

2.1. Design of educational content in the Internet of Things environment

The Internet of Things refers to a technology that uses laser scanners, radio frequency identification, infrared remote sensing and other sensing devices to connect fixed things with the network and exchange information to realize intelligent management of things. The core of the Internet of Things is the information interaction between people and things. Applying the Internet of Things to multimedia teaching can well realize the sharing of network information resources and improve the multimedia teaching effect.

The development of multimedia environmental education for primary school students under the Internet of Things environment must first be based on the reform of the teaching concept. In order to actively carry out environ-

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mental education in primary education, we must first cultivate students' positive green concept, and through the combination of environmental education and concept education, find the key factors that promote the psychological development of primary school students, and sublimate the value of environmental education [3]. In primary school environmental education, teachers should pay more attention to the renewal of educational concept, combine educational concept with student life, extensively collect environmental materials related to students, and update the environmental education mode of primary school students from various aspects. This will not only ensure the timely updating of environmental education concept in the education process, but also enable primary school students to find new development directions in environmental education, and it can update the teaching

activities in real time through multimedia teaching method, and deepen the concept of environmental education to all aspects of communication with primary school students, making students turn environmental protection into a habit. Under the Internet of Things environment, the multimedia environmental education mode for primary school students should be developed in the direction of practice, that is, the teaching mode should be based on practice. Internet of Things multimedia education needs to be closely related to the theoretical curriculum, through the combination of theory and practice, the practical content and practical plan should be rationally formulated according to the content of the primary school environmental education curriculum [4]. The structure of the multimedia environmental education mode under the Internet of Things is shown in Figure 1:
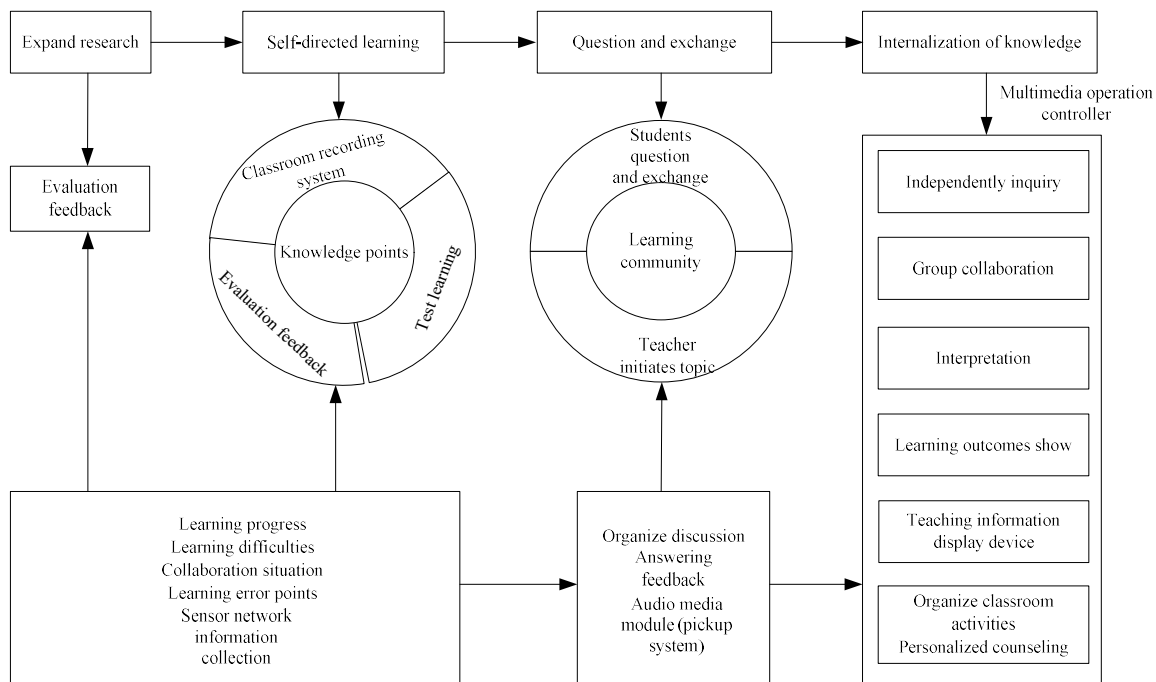

Figure 1. Structure of multimedia environmental education mode under the Internet of Things

According to the above figure, the multimedia education mode of primary school students under the Internet of Things uses the Internet of Things technology to conduct educational research in a way that combines classroom and practice. For example, in the process of environmental education for primary school students, it is necessary to carry out according to the relevant content and teaching purpose, and the learning information is collected by using the sensor network. For environmental education courses, the focus of education is to help primary school students understand and master the knowledge points involved in theoretical teaching. It sets up organizational discussion, answering feedback and other links, and uses audio media modules to operate in the process[5]. In the

practice part, teachers need to arrange the practical content reasonably according to different environmental education content, adopt the classroom recording system to make students to participate in it, so as to improve students' enthusiasm, encourage students to take the initiative to practice learning, and show the learning results through teaching information display device.

2.2. Design of multimedia environmental education training content for primary school students

For the multimedia environmental education mode for primary school students under the Internet of Things, in the most important part of practice, the combination of

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theoretical knowledge and relevant curriculum practice is mainly used. Its main purpose is to help primary school students to master relevant skills in the process of teaching and training, and to complete the teaching tasks in the relevant environment through teachers' practice of mul-

timedia environmental protection teaching programs[6]. The theoretical teaching is mainly based on the teaching system, and the process of multimedia environmental education mode under the Internet of Things is shown in Figure 2:
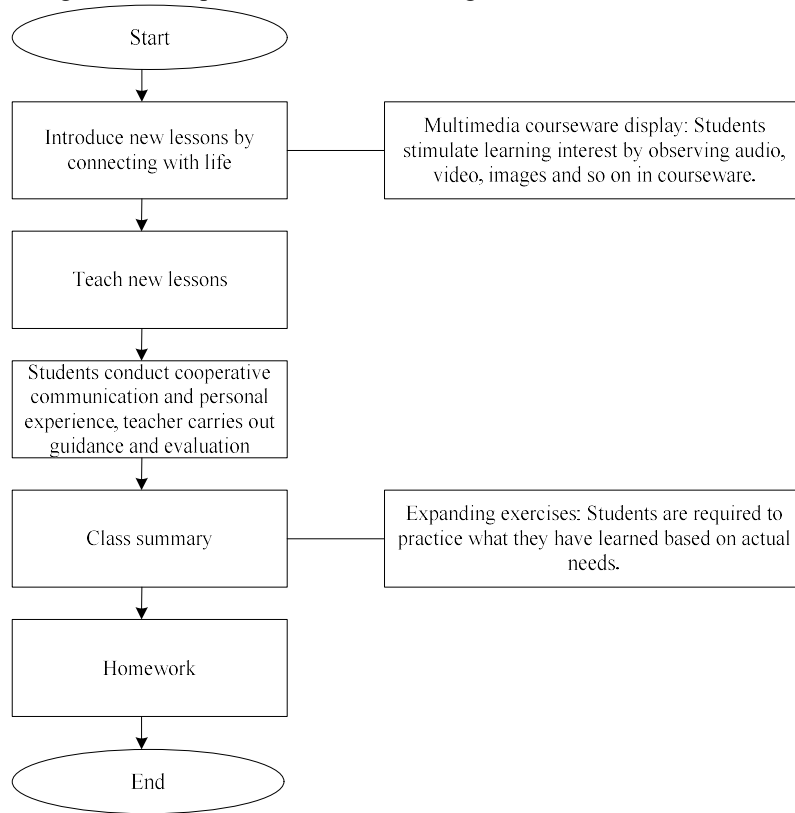
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                    ┌─────────────┐
                    │    Start     │
                    └──────┬──────┘
                           ↓
        ┌──────────────────────────┐      ┌──────────────────────────────────┐
        │ Introduce new lessons by │──────│ Multimedia courseware display: Students │
        │    connecting with life  │      │ stimulate learning interest by observing audio, │
        └──────────┬───────────────┘      │ video, images and so on in courseware. │
                   ↓                       └──────────────────────────────────┘
        ┌──────────────────────────┐
        │     Teach new lessons    │
        └──────────┬───────────────┘
                   ↓
        ┌──────────────────────────┐
        │ Students conduct cooperative │
        │ communication and personal │
        │ experience, teacher carries out │
        │   guidance and evaluation │
        └──────────┬───────────────┘
                   ↓
        ┌──────────────────────────┐      ┌──────────────────────────────────┐
        │       Class summary      │──────│ Expanding exercises: Students are required to │
        └──────────┬───────────────┘      │ practice what they have learned based on actual │
                   ↓                       │              needs. │
        ┌──────────────────────────┐      └──────────────────────────────────┘
        │        Homework          │
        └──────────┬───────────────┘
                   ↓
           ┌──────────────┐
           │     End      │
           └──────────────┘
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Figure 2. Process of multimedia environmental education mode under the Internet of Things

Primary school students' multimedia environmental education is based on the establishment of a good environmental education environment, so that students can better feel the environmental protection atmosphere. Schools should start from their own environment, use RFID technology to establish a natural science experiment management system, use the integrity and traceability of the Internet of Things information to customize personalized course learning, and use the sensor intelligent control teaching instrument to establish some experience rooms, making students experience the changes in the growth of plants under the changes of air, humidity and temperature, and regarding them as one of the environmental protection teaching courses, which will enable primary school students to experience from the surrounding environment and help students to have a deeper understanding of environmental protection[7]. This kind of education mode can help primary school students to increase their interaction with the environment during the education process, help students to obtain educational experience through daily details, present the beauty of nature to students, and

better cultivate students' sense of responsibility for environmental protection.

3. To Achieve Students' Multimedia Education

3.1. Construct multimedia environmental education materials

Under the Internet of Things environment, primary school multimedia environmental education still belongs to a brand-new teaching mode. There are few related teaching materials, and the relevant educational modes and materials for multimedia environmental education for primary school students under the Internet of Things are basically non-existent. Therefore, to achieve better educational outcomes, it is necessary to be based on educational goals. The basic goal of multimedia environmental education for primary school students is to promote the smooth implementation of the three relationships of teacher interaction, student interaction and teacher-student interaction.

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According to the goal of multimedia environmental education for primary school students, the textbooks are compiled, which is also an important basic content of multimedia environmental education for primary school students. In the process of writing textbooks, relevant professional talents and school teachers can be completed together, highlighting the teaching priorities, and writing the actual situation of the primary school students.

3.2. Expand student learning space

In the Internet of Things environment, primary school students' multimedia environmental education can use the multimedia means such as the Internet to extend traditional classroom teaching to extracurricular activities and extend to students' lives. Through students' self-learning, students can truly understand the urgency and importance of environmental protection, so that students can have their own understanding of environmental education. Only by truly doing this, can students really understand what is environmentally compliant[8], can students learn related knowledge in addition to the textbook theory provided by teachers. Students can collect the hazards of various catastrophic climates and the causes of their formation through relevant texts and related websites, which will cause students to pay attention to environmental protection. In the same way, teachers can organize students to collect real environmental information around them, apply the ideas in environmental education to life, and guide students to increase their sense of responsibility. Teachers can ask students to investigate the current situation of the campus or the surrounding environment, communicate the results with other students, and strengthen the environmental awareness of students through environmental comparison.

3.3. Highlight the teaching concept under the Internet of Things environment

In traditional environmental education, the teacher-based teaching mode is often adopted. Students only study in the classroom, and the teaching activities are over after the class. The multimedia environmental education mode not only requires students to complete teaching activities through mutual cooperation in the classroom, but also requires students to communicate after class, thus helping students to have their own understanding of environmental education content. In the teaching process, the theoretical knowledge and life-related content are closely integrated through the exchanges between students, so that the overall education mode becomes a whole. Primary school students' multimedia environmental education can also integrate the relevant environmental education con-

tent through the production of web pages, through the continuous enrichment of web content, so that students can experience their own learning results and provide students with reliable review reference materials.

4. Conclusion

The cultivation of environmental awareness of primary school students is a kind of benign education for students' natural attitudes, which can help students to establish a positive concept earlier. With the increasing environmental protection problems in the society, the environmental education of primary school students seems to be more profound. To achieve better results in the education process, it is necessary to combine traditional education with Internet of Things multimedia while clearing the educational goals, to carry out better enlightenment for primary school students' environmental awareness.

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