

# Research on the Reform and Innovation of Popular Science Education under the Background of Informatization

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**ABSTRACT.** *In the 21st century, informatization has become an indispensable tool for the development of our times. Since the implementation of quality education, information technology has been integrated into modern education. In recent years, popular science knowledge has been popularized, and most of our young people have a strong interest in popular science knowledge. Therefore, under the background of informatization, it is a necessary measure to carry out comprehensive research and discussion on the reform and innovation of popular science education. This paper first discusses the development status of popular science education under the background of informatization, followed by the specific information characteristics of popular science education reform and innovation, and the content of reform and innovation.*

**KEYWORDS:** *Informatization, Popular science education, Reform, Innovation*

## 1. Introduction

Science education under the background of informationization is Internet science popularization<sup>[1]</sup>. Nowadays, the development of informatization science education in our primary and secondary schools is very slow. The development of education in our country seems to be immersed in the trouble of exam-oriented education. Few of us pay attention to Internet science knowledge. Internet popular science education in China was first launched in 1995. With the opening of the online version of “Beijing Science and Technology News”, the country officially opened the door to popular Internet science education. Over the past two decades, the party and government have formulated various policies to support the development of network science popularization education and promote the healthy and rapid development of network science popularization. Up to now, there are more than ten popular science program websites with certain influence in China, such as “science popularization China”, “China science popularization network” and “China Science and Technology Museum”. Therefore, the integration and development of information technology and popular science education enable primary and secondary school students to learn rich and colorful science popularization knowledge after class, which makes

students have a stronger interest in science popularization learning.

## **2. Reform and Innovation of Popular Science Education under the Background of Informatization**

### ***2.1 Characteristics of Informatization***

In recent ten years, the new media alliance of the United States and more than 300 educational institutions in the world have studied the development of museum education, science education and popular science knowledge. The results show that the current Internet information technology has the following characteristics:

(1) Mobility: Now almost everyone of us will have a smart phone, and the information on the Internet is spreading rapidly on mobile devices, and each of us will browse the topics of our own interest.

(2) Interesting: due to the Internet of things technology, cloud computing and other ubiquitous knowledge, including iBook, UCC, WiFi, students can enjoy the pleasure of online learning, and can learn anytime and anywhere.

### ***2.2 Informationized Science Popularization Education Reform and Innovation***

Informatization education allows cities, schools, and students to share resources. Informatization education has been more deeply understood over time, and the guiding ideology has changed from hardware as the core to application development as the core<sup>[2]</sup>. With the continuous development of modern information technology, especially the rise of cloud computing and Internet of things technology, modern classroom teaching mode is undergoing unprecedented changes<sup>[3]</sup>. The reform and innovation of information science popularization education in primary and secondary schools in China has always been the key subject of national development.

(1)Open more online popular science education courses. At present, there are few popular science books in primary and secondary schools in China. However, in recent years, the popularization of information technology has made up for the situation that there is no science book and no science class. In order to increase popular science education courses, schools must increase the equipment of popular science resources, and improve the online popular science education courses by adding online equipment and information science education laboratory. Through online transmission of popular science knowledge to students, offline teachers lead students to carry out popular science experiments, thus strengthening students' theoretical study and experimental operation of popular science knowledge, so that students can fully understand the charm of popular science knowledge.

(2)Organize more live video science popularization activities. Regularly organize students to visit the live video broadcast of online science popularization

activities. Every semester, teachers can conduct science experiments through live video broadcasts, so that the school and other students who love science can watch the teacher's popular science experiments. For example, students who like geography and astronomy will pay more attention to this information through Douyin. At this time, the live video broadcast by the teacher will be favored by the students. In this way, students can learn popular science knowledge in their free time. In addition, organizing students to visit science and technology museums, cultural museums and other physical exhibition halls can arouse children's love for science education through off-class activities.

(3)Strengthen the teaching staff of popular science education. At present, there is a shortage of popular science teachers in our country, and many schools do not have professional science teachers. Therefore, expanding the recruitment of popular science teachers is also the key content of the reform and innovation of informatization science education. Schools can also organize popular science education training classes so that teachers can master more knowledge of popular science through systematic learning. Schools can also establish popular science education teams to study popular science education content, formulate popular science education teaching methods, and determine teaching content.

(4)Establish a mechanism of network science popularization education. After several centuries of development and evolution of the school, the current school education mechanism has been formed. People oriented education and teaching activities of morality, intelligence, physique, beauty and labor are carried out. On this basis, school will set up the innovation and development of information science popularization education, carry out three projects of network science popularization education, science and technology production and scientific and technological small inventions, and comprehensively establish an information science popularization education mechanism.

(5)Establish a computer science education base. Relevant departments should strengthen the systematic layout of science popularization infrastructure, promote the construction of science popularization bases with national characteristics, and encourage science popularization resources such as science popularization bases, key laboratories of colleges, and major science and technology innovation platforms to face the public<sup>[4]</sup>. Among them, computer science education is the most popular, each school has its own computer science classroom, so that teachers through the computer science education base, to let students learn science knowledge online. The purpose of the construction of these computer professional practice bases is to build them into scientific education positions for students, so as to carry out popular science education activities.

We live in an era of rapid development of the Internet. The traditional national popular science education mode is facing reform and innovation. Information technology has a revolutionary impact on the development of education. The government must attach great importance to it, bring educational informatization into the overall strategy of national informatization development, and deploy educational information network in advance<sup>[5]</sup>. Therefore, strengthening the reform

of popular science education under the background of informatization is a key content worthy of our in-depth study.

### 3. Conclusion

The reform and innovation of popular science education is accompanied by the integration of information technology. Popular science education as a major prerequisite for the development of social science, in the context of information technology, can enrich students' knowledge of science and provide a reserve force for the development of science in China.

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