

Original Paper

Research on Effective Supply Strategies of Informationization Teaching Resources under the Background of "Double Reduction"

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Abstract

The quality of education after the "double reduction" needs to be guaranteed by deepening education and teaching reform. In order to better implement the "double reduction", it is necessary to apply information technology teaching methods to promote educational reform. At the same time, deepening information technology teaching reform is also an effective measure to promote the common and balanced development of compulsory education. In the society where information technology teaching is constantly developing, information resources are everywhere. In the context of "double reduction", the study of effective supply strategies for high-quality information technology education resources is conducive to the realization of reducing burden, increasing efficiency, and improving the quality of education environment. On the basis of explaining how information technology education resources can empower the implementation of "double reduction", this study proposes effective supply strategies for information technology education resources from the perspectives of precise promotion of teaching resources and teaching services, hierarchical supply of after-school service resources, big data resources to assist school work, and transformation of service models for off campus institutions.

Keywords

"Double reduction", Information technology teaching resources, Effective supply, operational research

1. Introduction

In July 2021, the "Opinions on Further Reducing the Homework Burden and Extracurricular Training Burden of Students in Compulsory Education" was released, referred to as the "Double Reduction" policy in the article. The "double reduction" policy clearly proposes requirements for the total amount and duration of homework for students in compulsory education, while also implementing strict control

and regulation on extracurricular training.

After the implementation of the "double reduction" policy, schools, faculty and staff, students and their families have all encountered new challenges. Students' spare time has been extended due to limitations in current educational facilities, resulting in a lack of high-quality teaching resources and specific learning needs that are difficult to address in extracurricular learning. In the rapidly developing information society, solving such problems undoubtedly requires fully utilizing information resources to play the role of information education resources. By applying Internet technology to standardize and sort out information based curriculum resources to adapt to the personalized development of students, and at the same time, improve teachers' information based resource allocation and other links, so that digital education resources become a more standardized and intelligent service structure. The full utilization and development of information technology teaching resources by schools is an important manifestation of implementing the "double reduction" policy.

2. The Inner Logic of Information Technology Teaching Resources Promoting the Implementation of "Double Reduction"

The core of the "double reduction" policy is to simultaneously promote the five educations, cultivate virtue and cultivate people, and achieve efficiency and fairness in education. Information technology teaching precisely achieves the fairness of the core ideological education of the "double reduction" policy. The teaching in compulsory education is the foundation of high school and higher education. Teachers should make full use of information resources and teaching methods to expand the coverage of high-quality information education resources in compulsory education. Improving students' ability to apply information technology and enhancing the teaching quality of compulsory education coincides with the reform approach of "double reduction".

2.1 National Policies Require the Implementation of Information Technology Teaching Resources

Although China started information technology education relatively late compared to developed countries, it has been continuously exploring the path of information technology teaching. Due to the deep understanding of and the state that information-based teaching is the guarantee for the future, efforts and investments in resources and policies are constantly increasing. In 2019, the Central Committee and the State Council issued the "China Education Modernization 2035" and "Accelerating the Implementation Plan for Education Modernization (2018-2022)", which pointed out that promoting modern education governance requires the use of intelligent and information-based means. As an important component of educational governance, informatization will inevitably focus on the integration of educational informatization and intelligence to promote the modernization of the educational governance system. The application of information technology in teaching and resources, as a means of modern education, is bound to promote important progress in modern education.

2.2 The Equity of Education Promotes the Implementation of Information-based Teaching Resources

The Constitution of the People's Republic of China guarantees the right of every Chinese citizen to

education. The most fair exam in our country is the college entrance examination, which largely reflects the fairness of education. However, in the context of educational fairness, there still exists the reality of unfairness. For students in impoverished areas along the western border, high-tech teaching equipment is out of reach. With the rapid development of information technology, this seemingly difficult to solve "unfairness" phenomenon has also been resolved. The popularization and utilization of information teaching resources enable students in the western border areas of China to also enjoy advanced information teaching resources and experience from developed coastal areas. Therefore, the application and development of information technology teaching resources are also effective means to reduce the education gap between urban and rural areas.

2.3 The Implementation of "Double Reduction" Requires the Implementation of Information Technology Teaching Resources

The "double reduction" policy is not only a reversal of the "question sea tactics" homework concept, but also a specific need to promote knowledge learning and comprehensive quality development, and a beneficial supplement to the utilization and integration of school educational resources. Under the influence of the information technology teaching environment, teachers can fully utilize information resources, design more interesting activity assignments for students, and enable students to achieve a deep understanding and mastery of knowledge through active participation in practice. For students in the compulsory education stage, diversified information technology education resources and teaching activities are more attractive to them, which can promote their ability to explore knowledge, enhance their learning interest, and achieve more ideal teaching results.

3. The Effective Supply Strategy of Informatized Teaching Resources under the "Double Reduction" Policy

The Opinion on Vigorously Strengthening the Construction and Application of Online Education and Teaching Resources in Primary and Secondary Schools, released in 2021, provides guidance for improving the construction of teaching resources in primary and secondary schools, with the aim of enhancing the quality of student education. This opinion shares similarities and differences with the "double reduction" policy of strengthening the quality of education and teaching for students. In the context of "double reduction", schools need to further improve their after-school service level. The real challenge is to solve the problem of "reducing burden" and "meeting diverse learning needs". There are the following strategies on how to better apply and implement information technology teaching resources under the "double reduction" policy.

3.1 Building a High-quality Resource Sharing and Campus Service Platform

At present, utilizing information resources for education and teaching has been widely recognized as an effective way to balance the development of education levels in different regions. Relevant departments integrate high-quality information technology teaching resources and build resource sharing platforms in different regions. The resource sharing platform provides corresponding resources that match the

identity of "teachers" and "students" through identity recognition. A high-quality resource sharing platform not only provides precise learning resources for students and teachers, but also enables personalized learning based on student learning situations; Providing teachers with high-quality lesson preparation and research related resources and precise services is beneficial for improving their skills and learning.

3.2 Multi Level Information Resource Supply to Meet After-school Needs

Using intelligent tools to improve the quality of homework is an important measure to achieve "double reduction", which greatly reduces the burden of students having too much homework and low quality. By utilizing big data analysis in an intelligent homework management system, dynamic intelligent management of homework design, grading, tutoring, feedback, and other aspects can be achieved. Different homework designs can be formulated for learners of different levels, and the system can provide feedback to teachers on different teaching plans. Provide students with sufficient space for independent learning and development, and students with good academic performance have more free time to develop their interests and hobbies, which can better improve their overall quality; Middle level students, on the other hand, rely mainly on encouragement, and the difficulty of homework is intelligently designed based on their own mastery, allowing students to feel the satisfaction brought by completing the homework content; Teachers can make timely adjustments to teaching objectives, content, activities, and strategies based on real-time monitoring of students through the scientific and rational use of information resource platforms, which greatly improves the effectiveness of classroom teaching.

3.3 Information Based Teaching Resources Based on Big Data Help Schools Work Efficiently

Under the support of the "double reduction" policy, students are no longer participating in extracurricular tutoring classes, and their main time is concentrated in the on campus classroom. The school's focus is more on classroom teaching. In order to facilitate school management and use of data, service-oriented educational information tools provide lightweight services to schools and support various daily business operations. For example, the scientific modeling of student profiles generates accurate personal profiles for each student through multidimensional analysis of student education data (Jiang & Yang, 2022). Evaluate students' learning interests, levels, abilities, etc. through personal portraits, provide personalized learning support services for students, and make data the foundation of comprehensive scientific education in schools. Information service software enables teachers to easily complete their management work and various tasks, freeing them from inefficient and unrelated tasks related to teaching and education. It fully leverages the "efficient", "open", and "connected" characteristics of educational information resources.

3.4 Transformation of Information Education Resource Service Model for Optimizing Off Campus Institutions

Off campus tutoring has certain advantages in terms of resource types, personnel services, etc., in addressing the shortage of high-quality after-school resources in schools. Therefore, fully utilizing the

resource advantages of extracurricular tutoring institutions can truly transform them into the strongest auxiliary force for school education supplementation, which can not only solve the problem of social employment forms but also solve the shortage of after-school tutoring resources for students in schools. The transformation form may include: firstly, adopting the form of purchasing after-school education service projects from the government, transforming the school's teaching auxiliary institutions from providing extracurricular tutoring to directly participating in on campus classroom education and after-school consulting services, creating richer and more diverse quality teaching resources for the school; The second is to integrate teachers from both internal and external institutions and school teachers, concentrate the wisdom of the teacher group to form a classroom teaching system, further optimize the classroom process, and promote innovation in classroom content and methods.

4. Conclusion

Under the "double reduction" policy, there have been certain changes in education and teaching reform. Information technology teaching is the best choice under the "double reduction" situation, and the full and reasonable use of information technology teaching and information technology teaching resources is an important means for teachers under the "double reduction" policy. Fully utilize information resources to enhance students' interest in learning, stimulate their free thinking and creativity, and continuously improve their overall quality. Utilize information resources to achieve teaching effects that reduce student burden and increase classroom efficiency. The effective utilization of information technology education resources is not only a challenge for educational informatization, but also an opportunity for educational informatization. At the same time, it is also an opportunity to accelerate the implementation of the "double reduction" policy and build a new pattern of educational development.

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