

Research on the Construction of Digital Teaching Resources for Schools Oriented to Teaching Innovation

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Abstract. With the continuous further development of education informatization in our country, the present way and the way of spreading knowledge have changed gradually, which has caused innovation of teaching mode, teaching method and learning method. In the information teaching environment, as an important resource in the implementation of the teaching process, digital teaching resources have become the focus of basic education schools gradually. Schools have begun to explore the construction of digital high-quality teaching resources with their own characteristics, so as to promote the teaching reform and innovation of schools. In order to explore the effective measures and effects of the construction of digital teaching resources in combination with the needs of teaching innovation, this study carried out various comprehensive studies. This paper first introduces the dimension and principle of teaching innovation to provide theoretical basis for the research. Secondly, this paper puts forward the countermeasures to promote the construction of digital teaching resources in schools, to provide reference for related research.

1 Background and Significance

1.1 Background

With the rapid development of information technology, modern technology characterized by networking, digitalization and multimedia has brought about changes in education, and people's life, learning and working methods have undergone tremendous changes. With the rapid growth of knowledge in the information society, new technologies, new products and new ideas are constantly emerging, which also puts forward higher requirements for people living in today's society [1]. In the face of the constant replacement of massive information and knowledge, the learning content is also increasing. If the learning time, learning methods and teaching methods are not improved synchronously, the learning efficiency will obviously decline gradually. Therefore, traditional teaching is no longer suitable for the needs of human development in the information society. It is necessary to immediately implement innovation in teaching and change the existing traditional teaching mode and methods. With the increasing emphasis on the development of education informatization in China, more and more education experts and front-line teachers begin to pay attention to the teaching innovation supported by information technology [2]. Not only that, the content related to teaching innovation also presents a diversified state, including the innovation of teaching mode, teaching methods, students' learning methods, and so on. For

example, the emergence of flipped classroom has promoted the innovation of teaching mode and improved students' ability of autonomous learning. Therefore, the construction and application of digital teaching resources have become the focus of attention of education departments at all levels, education experts and school teachers [3]. Developing high-quality digital teaching resources that meet the actual teaching needs has also become an urgent need for schools to implement teaching innovation.

1.2 Significance

1.2.1 Research Significance

Digital teaching resources in schools are a long-term project, involving the overall planning and organization of resource construction. Although many schools have carried out digital teaching resources construction activities, the ideas and effects of the construction need to be further understood. Therefore, based on literature reading, this study proposes the basic ideas and principles for the construction of digital teaching resources in schools. Combined with the investigation of the current situation of the construction of digital teaching resources in three case schools, it analyzes the effectiveness of the construction of school resources and resources, and proposes effective strategies for the construction of digital teaching resources in schools, which provides a certain reference value for future theoretical research and practical exploration.

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1.2.2 Significance of Educational Practice

The significance of educational practice is realized more through “ideological approach”. “Ideological approach” is to persuade people by reasoning through research results, by presenting facts and reasoning, so that educational practitioners can accept new theories, new views and new methods. Educational practice can improve the professional ability of educational practitioners by influencing their educational ideas, improving their understanding of the nature and laws of education, and improving their teaching methods. “Ideological approach” is the embodiment of the most important social function of educational research. For example, the research results of education research at the macro level are mainly theoretical knowledge with clear and systematic logic system. These knowledge itself has a powerful ideological power, can have a strong impact on people’s education concept and influence. Educational research results manifest their great practical significance through “ideological approach”. Educational practice can make educational practitioners more deeply understand the essential characteristics of educational practice activities and grasp the basic laws of educational practice activities more comprehensively. It can guide the educational practitioners to set up the correct educational values and strengthen their ideals and beliefs in the educational cause. Educational practice influences the ideological concepts and educational values of educational practitioners in a silent and imperceptible way.

1.2.3 Methods of Teaching Innovation

First, teachers’ teaching ideas are innovative. Teaching thought refers to the teaching thought and behavior consciousness with teachers’ individual characteristics and subject characteristics. It is a collection of teachers’ rational understanding, propositions, concepts and attitudes towards teaching phenomena, which is reflected in the teaching practice of various disciplines, and also includes teachers’ choice and thinking of teaching methods, teaching strategies and teaching contents. To innovate teaching, we must first innovate teachers’ teaching ideas and change their view of technology application. To realize the teaching and learning advocated by constructivism, we must change the knowledge transmission of teachers’ view of technology media into the knowledge construction of the view of technology tools.

Second, the innovation of learning objectives. The development of science and technology accelerates the speed of knowledge updating and changes the knowledge structure system, which is also one of the external driving forces of teaching innovation. The purpose of learning is to construct an individual’s own meaning, not to repeat the meaning of others to get the right answer. The establishment of knowledge system is conducive to giving full play to learners’ learning initiative and developing learners’ subjectivity.

Third, the innovation of learning methods, towards the integration of digital technology support for

independent, cooperative and inquiry learning. Teaching should advocate independent learning, inquiry learning, cooperative learning and situational learning. As a learning tool for students, digital teaching resources can help students obtain resources, create learning situations and provide conversation and negotiation tools. In a sense, the teaching application of information technology not only triggers teaching innovation, but also promotes and supports teaching innovation.

2 Dimensions and Principles of Digital Teaching Resource Construction

2.1 Dimensions of Digital Teaching Resource Construction

2.1.1 Clearing Construction Objectives

The construction of digital teaching resources is a long-term project, which requires a clear guide as the basis for resource construction, resource monitoring and resource evaluation. Therefore, the first step of the school in building digital teaching resources is to clarify the goal of the school’s digital teaching resources construction. The basis for goal formulation can be the requirements of the national, local and other superiors, or the needs of the school’s own teaching and characteristic development. At the same time, the form of goal setting can be the overall goal of promoting the improvement of school teaching quality, promoting the deep integration of information technology and education and teaching [4]. It can be the specific goal of realizing the transformation of students’ learning style and supporting the innovation of teaching mode.

2.1.2 Planning Resource System

Digital teaching resources have the characteristics of magnanimity and fragmentation. Without a certain system, the presentation of resources will appear disorderly, and it will also cause difficulties in resource retrieval and storage. Therefore, schools need to ensure the systematization of digital teaching resources in the process of building resources, which can be divided into two aspects: content systematization and structure systematization [5]. Content systematization requires building digital teaching resources according to school characteristics, curriculum characteristics, teachers’ teaching and professional development needs, students’ development needs, etc. From the perspective of teaching practice, the digital teaching resources that are separated from the teaching system and developed from the teaching content and activities are lack of practical value. Therefore, schools should also organize the content system of teaching resources around the teaching content and activities.

2.1.3 Organization Development Entity

The development of digital teaching resources can not be

separated from the theoretical guidance of education experts, but also needs the assistance of the personnel of the education department, and also needs the teachers' own practice to implement the school resource construction plan. It can be seen that the development of digital teaching resources needs the cooperation of education experts, education department personnel and school teachers to ensure the smooth construction of digital teaching resources in schools. As an important subject of organizational resource construction, when planning the overall project of digital teaching resource construction, the school should not only plan the resources themselves, but also deal with the integrity of the participation of development subjects such as education experts, education department personnel and teachers, so as to give full play to the role of each subject and promote the efficiency of school resource construction. Especially for the organization of teachers in the school, it is necessary to establish a team for the development of digital teaching resources, which can be mainly composed of backbone teachers or the director of discipline teaching and research, and establish a discipline resource construction team. At the same time, it is also necessary to establish an information work leading group to assist teachers in completing the construction and application of resources.

2.2 Principles of School Digital Resource Construction

2.2.1 Establishing Advanced Education Concept

The construction of digital teaching resources should take the contemporary advanced education concept as the general guiding ideology to promote the all-round development of students. With the continuous development of society, the demand of society for talents is also constantly updated. Modern educational concepts such as the concept of quality education and the concept of lifelong learning emerge one after another, which has become the goal of school education development. The concept of quality education emphasizes the all-round development and personalized development of students, focusing on the cultivation of students' innovative spirit and practical ability, aiming at cultivating creative talents. While teaching in the information environment, the information literacy of students is also constantly improving. Digital teaching resources enable students to break the time and space constraints for independent learning instead of being confined to the classroom. During this period, the information literacy of students is constantly formed, and the ability of students to obtain, process and use information is cultivated, which will lay a good foundation for students' lifelong learning to a certain extent.

2.2.2 Based on the Actual Teaching Needs of Schools

The school should pay special attention to the appropriateness of resources in building digital teaching

resources, that is, school should have to emphasize the school-based, all based on the school, and serve the school, which is the value concept and the most fundamental purpose of the school in building digital teaching resources. In the process of building digital teaching resources, it is necessary to collect, sort out, design and develop digital teaching resources based on the actual situation of the school, teachers' teaching needs and students' learning needs, so as to improve the teaching quality of the school. Therefore, the school should not blindly follow the trend, and should make full use of the existing resources of the school according to its own characteristics, and build digital teaching resources in combination with the actual teaching needs of the school.

2.2.3 Supporting teaching activities

In information-based teaching activities, digital teaching resources can not only carry learning content, but also help teachers organize and manage teaching activities, and also support students' learning activities. Therefore, the design, development and application of digital teaching resources can directly affect the implementation of information-based teaching activities. In essence, digital teaching resources are important resources for implementing teaching activities and students' learning activities, and teachers' teaching activity design is included in the content of resource design. At the same time, when designing and developing digital teaching resources, it is necessary to integrate existing resources, such as network resources, database resources purchased by schools, and original materials, to effectively integrate and develop digital teaching resources suitable for their own teaching activities and students' learning needs.

3 Countermeasures to Promote the Construction of Digital Teaching Resources in Schools

3.1 Creating the Environment for Resource Construction

3.1.1 Organizing School-based Training

As the main body of developing school-based resources, teachers' own level directly affects the quality of digital teaching resources. Therefore, before organizing resource construction, schools need to carry out corresponding school-based training to understand the lack of knowledge and ability of teachers in resource construction, so as to improve the level of teachers.

First of all, in order to carry out targeted school-based training and quickly improve the efficiency of school resource construction, the school needs to formulate the goal of school-based training. The goal is not only to solve the current problems in the construction of digital teaching resources. At the same time, it should also focus on the long-term development direction of schools and teachers' development prospects. Secondly, the school

needs to plan the training content. Schools should provide training on modern education concepts and teaching theories and methods under the information technology environment to improve teachers' overall understanding of information education. At the same time, teachers should deepen their recognition of the development of digital teaching resources.

For example, the object of individual guidance can be new young teachers. Through training, they can understand the basic situation of school information construction, stimulate the enthusiasm of teachers to improve information literacy, help teachers grow rapidly, and become qualified teachers. The main content of the training is usually information teaching theory knowledge and information technology knowledge training. Through personal help for teachers, the old teachers are encouraged to gradually accept the concept of information teaching and understand the positive role of digital teaching resources in improving teaching, so as to get rid of the shackles of teachers' traditional thoughts and stimulate the enthusiasm of teachers to implement information teaching.

Therefore, the school also needs to carry out the training of information technology ability improvement. Specifically, it includes video production methods, animation script writing methods, and courseware development ideas and skills, so as to improve the level of teachers' development and application of digital teaching resources.

3.1.2 Setting up a Development Team

Because teachers have differences in subject knowledge ability, information literacy and way of thinking, there are often differences in the type, content and arrangement of digital teaching resources produced by teachers. This difference makes resources integrate with teachers' personal characteristics, and also promotes the development of digital teaching resources in schools towards diversification. As a school, it should fully understand the advantages and characteristics of all kinds of teachers and make rational use of existing human resources. For example, a resource development team is set up based on disciplines, and the team members are backbone teachers and teachers from the same discipline group. The school can also set up a grade development team, whose members are mainly subject teachers, supplemented by information technology teachers. The two types of construction teams can give play to their respective advantages. Among them, the discipline team can discuss the resource construction methods according to the characteristics of each discipline, and the grade team can implement targeted resource construction according to the characteristics of the students of that grade, so as to achieve the overall improvement of the teaching level of the grade.

For example, schools can provide teachers with appropriate support and services under the guidance of education authorities, encourage teachers to actively participate in a series of activities such as class sharing and class evaluation, and improve teachers' enthusiasm in

resource construction with the help of information activities. In addition, schools can regularly carry out high-quality course competitions and multimedia courseware making competitions, etc., to promote the communication and mutual learning among teachers, and jointly improve the school's information-based teaching level and the quality of resource making. Through the information teaching practice and resource construction closely combined. In the long run, it can accumulate experience in the construction of teacher resources and contribute a steady stream of high-quality resources to the school.

3.2 Enhancing Teachers' Application Strength

3.2.1 Improving teaching and research ability

The massive digital teaching resources emerging from the Internet have brought teachers many opportunities and challenges. On the one hand, teachers can make full use of the existing digital teaching resources to integrate resources for the use of teachers and students of the school. On the other hand, teachers need to learn to identify the practicality and scientificity of resources while using resources, which requires teachers to constantly study teaching to some extent, summarize the needs of different teaching types for digital teaching resources, and at the same time, study and study the characteristics of students to create digital teaching resources that meet the needs of student development. Therefore, in the process of building digital teaching resources, teachers actually need to constantly improve their teaching and research capabilities, especially the excellent backbone teachers, who should give full play to their exemplary role, lead other teachers in the school to actively study teaching, improve their research capabilities, promote the renewal of teachers' teaching concepts, and make them develop synchronously with the information society.

3.2.2 Clarifying Lifelong Learning Goals

With the continuous development of information education, teachers need to constantly update the concept and practical ability of modern education. Now teachers in many schools, especially the old teachers, have experienced teaching burnout. They have lost motivation and interest in pursuing higher teaching ideals, and their awareness of lifelong learning has gradually faded. However, with the continuous development of the knowledge society, the requirements for talent development are also constantly improving. As educators, teachers should strengthen their professional quality and establish the goal of lifelong learning, so as to provide students with better teaching services. At present, although the state and local governments have invested a lot of manpower and financial resources in organizing teacher training, such training is often short-term, the effect of teachers' ability improvement is not obvious, and it can not meet the long-term development needs of teachers. Only teachers can understand their real needs

and update their knowledge in a timely manner. Therefore, teachers need to set the goal of lifelong learning, constantly learn professional knowledge and development skills from experts, colleagues and literature resources, and achieve the synchronous development of teaching level and knowledge society.

4 Conclusion

In order to explore the effective measures and effects of the construction of digital teaching resources in combination with the needs of teaching innovation, this study carried out various comprehensive studies. This paper first introduces the dimension and principle of teaching innovation to provide theoretical basis for the research. Secondly, this paper puts forward the countermeasures to promote the construction of digital teaching resources in schools, to provide reference for related research.

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