

## Research on the Practical Basis and Countermeasures of Educational Development under the Background of Information Technology

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**Abstract:** With the rapid development of information technology in China, the application and development of information technology in various fields have made great changes in people's daily life, especially the application of information technology in the field of education, and the change of modern social education concept, educational tools, teaching activities and so on. The development of information technology is changing rapidly, and the application in the field of education is gradually popularized. For primary school science teaching, information technology and its integration have become a focus of primary school science teaching. Information technology background, combined with the contents of "Education Informatization 2.0 Action Plan" and other documents, make full use of the advantages of information technology, promote the development of education and teaching into the development of modern social education needs to focus on thinking. This paper briefly analyzes the realistic basis of educational development under the background of information technology, and probes into the countermeasures of educational development under the background of information technology..

### 1. The Realistic Basis of Educational Development in the Context of Information Technology

Taking into account the contents of the document of the State Council on actively promoting the of "Internet +", it can be found that the concept of the Internet and information technology have penetrated into all corners of the field of education in an all-round way, affecting educational and teaching activities in modern society, and affecting the in-depth reform and development of the field of education. Under the background of information technology, the basic conditions of educational development and the actual situation have changed greatly, such as: the change of learning resources, the change of learning style, the change of teacher-student relationship, the change of teaching environment, the change of management method. In view of the changes of these realistic bases, in order to further realize the development of education, it is necessary to comprehensively adjust the mode of education, the allocation of teaching resources, the teaching environment and the teaching idea, and construct a new mode of education development under the background of information technology, so as to promote the in-depth reform of education and promote the perfection and development of the field of education in China.

#### 1.1. Learning Resources

Under the background of information technology, the change of learning resources is mainly reflected in three aspects: the form of learning resources, the platform of learning resources and the allocation of learning resources. For example, under the background of information technology, learning resources can be optimized and integrated, breaking through the limitation of time, space and form, realizing the functions of "offline ", " mobile ", " visual" and "interactive ", which can satisfy learners' learning needs by using fragmented time and space.[1].

#### 1.2. Learning Modalities

Under the background of information technology, the way of learning has changed obviously, from the traditional one-way learning to the present stage of two-way and interactive learning, from

the original collective teaching to the present stage of differentiated teaching. For example, information technology provides great support for the change of learning style. Among them, situational awareness technology, virtual reality technology, VR technology and so on all provide immersive learning style for learners (as shown in figure 1). Learners can use information technology to realize autonomous learning, interactive learning and interactive learning, and learning style is more flexible.



Figure 1 Immersive learning

### 1.3. Teacher-Student Relationship

Under the background of information technology, the teacher-student relationship in education and teaching activities has gradually changed. In the traditional education mode, the relationship between teachers and students is "teaching and learning ", " leading and passive ", while in the background of information technology, the relationship between teachers and students has gradually become the form of" guiding and conforming ", " guiding people and explorers ", and the students' main body learning consciousness has been inspired, and the status between teachers and students tends to be equal, forming the relationship of "mutual teaching, teacher-student interaction ".[2].

### 1.4. Teaching Environment

Under the background of information technology, the educational and teaching environment has changed obviously, which can be reflected mainly by the change of teaching space and the change of teaching platform. The above mentioned the change of "teaching platform ", this part focuses on the change of" teaching space ". Under the background of information technology, education and teaching activities are no longer restricted by space, and further extend the teaching scene. Learners can use teaching platform to obtain teaching resources in many spaces, such as home, dormitory, work road, subway and train, so as to realize free and flexible autonomous learning. Moreover, the emergence of teaching platform makes teaching activities more flexible, and the transformation between single offline courses into "online + offline" fusion classroom (figure 2), teaching activities, teaching interaction, classroom assignments, student evaluation and so on are included in the "online + offline" fusion classroom, using data analysis technology to provide learners with more objective evaluation of learning results and improve teaching quality[3].



Figure 2 " Online + offline "classroom teaching

## **1.5. Management Methodology**

Under the background of information technology, the mode of teaching management changes, which can be mainly reflected in management methods and teaching services. On the one hand, under the background of information technology, the basic realization of online and offline hybrid teaching, teaching resources have a strong sharing, teaching data can achieve real-time transmission, The application of big data, Internet of things and other technologies makes the management model present a modern development trend, improves the management efficiency, and improves the scientific nature of teaching decision-making and teaching evaluation. On the other hand, the application of various technical forms has realized the development of virtual reality classroom, wisdom classroom and so on, and further improved the teaching service ability.[4].

## **2. Countermeasures Education Development in the Context of Information Technology**

### **2.1. Reframing the Teaching Model to Cater to Development Trends**

In order to construct a new mode of educational development under the background of information technology, it is necessary to adjust the teaching method and teaching idea and rebuild the teaching mode to meet the trend of modern, intelligent and digital teaching development. On the one hand, from the point of view of teachers, we can integrate information technology into teaching environment, teaching platform, teaching resource allocation, construct network curriculum, put forward teaching activities of "flipping classroom ", carry out differentiated lesson preparation and cooperative lesson preparation, use virtual reality technology, carry out course practice, so as to strengthen teaching environment and realize the construction of educational foundation. On the other hand, we should adjust the learning activities from the perspective of students and according to the realistic basis of information technology, and put forward a variety of learning activities, such as "cooperative learning ", " autonomous learning ", " remote control learning ", " inquiry learning" and "ubiquitous learning ", so as to fully meet the students' learning needs and create a personalized, differentiated and open learning space for students.[5].

### **2.2. Adhere to "Life-Oriented" to Achieve Fine Management**

In order to construct a new mode of education development under the background of information technology, we should adhere to the teaching concept of "student-oriented" and "student-oriented ", and put forward the means of fine education management under the background of information technology. In addition, we can use data technology to build basic models, use enterprise management means to carry out education and teaching management, and carry out data analysis in combination with various data to realize "talking with data ", " judging with data ", " exploring students' learning advantages and problems deeply with data ", and " putting forward concrete educational and teaching decisions with data ", so as to improve the level of education sending letters and form a new form of education management.

### **2.3. Optimizing the Allocation of Resources and Constructing a New Model for Educational Curricula**

In order to construct a new mode of educational development under the background of information technology, we must recognize the uncoordinated and uneven distribution of educational resources which hinders the development of education in our country, so as to optimize the allocation of educational resources and reflect the advantages of the application of information technology. Facing the unbalanced allocation of educational resources between different regions, we can use big data technology, digital technology, Internet of things technology to provide high-quality educational resources for remote areas, build cloud classroom, virtual learning community, teaching interactive platform and so on simultaneously, realize the transmission and sharing of educational resources from "central and eastern regions" to " regions ", so as to realize the development of education under the background of information technology.[6].

## 2.4. Propose Multi-Form of Teaching and Construct Open Educational Environment

In order to construct a new mode of educational development under the background of information technology, we should also put forward a variety of different teaching forms, establish a diversified teaching form system, form an open educational environment, and provide learners with abundant teaching resources, free learning space and multiple choice teaching forms, so as to meet the diversified learning and development needs of learners of different ages, strata, economic level and basic literacy in modern society. For example, with the help of educational institutions, we can set up a synchronous network class community in famous schools and carry out some teaching activities on the teaching platform; we can connect the teaching equipment of learning and community education structure with the network, and use a variety of information technology to form a digital school (figure 3); we can also put forward multi-level teaching activities according to different professional courses to form a pan-professional and sub-talent training model.



Figure 3 Digital schools for virtual integration

## 3. Conclusion

To sum up, under the background of information technology, digital schools with the integration of reality and reality should further put forward targeted countermeasures, such as reconstructing teaching mode, realizing fine management, constructing new mode of education curriculum, extending teaching scene, putting forward multiple teaching forms, etc.

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