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Contents

Analysis of the New Strategy for the Development of Information-based Education for College Students under the Background of Big Data

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Abstract: With the development of information technology, the application and research of big data has become a new trend. In the era of big data, how to adapt to the development of information technology, how to further update concepts and improve modes and methods, how to improve the pertinence and effectiveness of education for college students has become a new problem to be solved. The construction of information-based education in universities has always been an important indicator for evaluating university education. However, the data and information generated in university education have not been deeply excavated, which can not be regarded as true wisdom education. In order to adapt to the development of contemporary science and technology, the information management in universities needs to be constantly improved. By analyzing the current situation of education in colleges and universities, this paper expounds the role of big data in education in colleges and universities, and puts forward a series of strategies to promote the development of information-based education in colleges and universities, which provides some references for the research of information-based education.

Keywords: Big data environment; Education in colleges and universities; Information-based teaching; Analysis of strategies

1. Introduction

The research of information-based teaching mode should begin with the study of its elements. There are five elements in education: teaching theory, goal and orientation, teaching method, teaching content, teaching procedure and structure. With the development of the information age, the application of teaching mode has gradually become information-based. Information technology has become the support for learning, and learning environment has become a new element of information-based teaching mode. In summary, the elements in the information-based teaching model are divided into six categories, including teaching theory, objectives and orientation, teaching methods, teaching procedures, teaching structure and learning environment. Team building should be fully strengthened in information-based teaching. In the process of designing content and implementing, it is usually not recommended that only one teacher should carry out the whole process of information-based teaching. The most promising solution is that 2-3 teachers work together to complete the design of information-based teaching and these teachers are equipped with assistants, which will contribute to the management and development of information-based teaching [1]. In the

teaching process, the evaluation of learning effects should be carried out through summarization and intensive exercises, which can be used to modify and improve the teaching objectives, and finally form a summative evaluation, and be conducive to storing and forming a continuous and stable teaching process and structure. At present, the application of big data has been applied in many industries in China and has achieved good results. Student information management in higher vocational colleges is far from enough. A lot of information has caused a lot of trouble for managers. Managers in higher vocational colleges cannot distinguish between true and false information. The scientific classification of student management information will become a major issue that needs to be addressed by the managers of higher vocational colleges. Therefore, managers also need the assistance of advanced software to improve the efficiency of analyzing students' information and to analyze and solve students' problems in time.

2. The Impact of Big Data on Information-based Education in Colleges and Universities

2.1. The transformation of the concept of traditional education management in colleges and universities

The following problems exist in teaching management in colleges and universities pointed out by some scholars. Firstly, teachers are poor and the mobility of resources is poor. In China, most private colleges and universities are relatively scarce in talent. In private colleges and universities, the mobility of teachers is relatively high, and part-time teachers are a relatively common form of employment , which makes the overall quality of teachers' teaching uneven and poses a major obstacle to the sustainable development of private colleges and universities. Secondly, there are problems in the design of the course. With the development of the Internet era, the spread of knowledge is getting faster and faster, and the setting of traditional courses can no longer meet the actual needs of students. Many private universities are still adopting the design of traditional courses, which are divorced from the reality of social development and lead to a decline in the quality of teaching. Third, there is a lack of clear teaching goals. Private universities in China started late and developed slowly. Therefore, many private universities lack teaching experience. Students have no motivation for learning, and students are confused about their future, which is not conducive to the development of students.

2.2. The impact on traditional teaching mode, evaluation mode and talent training mode

Research shows that under the background of big data, the traditional teaching mode will be replaced by the Internet. By analyzing the data in daily teaching, teachers can find out the advantages and disadvantages of each student, so as to realize the real one-to-one teaching according to their own abilities and personalized training. In the construction of evaluation mode, big data can provide dynamic and procedural evaluation methods, which promotes the reform and innovation of education mode and talent training.

2.3. Promoting the integration of teaching and learning and the improvement of teachers' comprehensive quality

Through the research and analysis of the data about students, we can predict students' performance and potential as well as problems in the future. This analysis helps to solve many problems. In addition, teachers can summarize the characteristics of different students by analyzing a large amount of teaching data, and teach students to conduct targeted learning according to their own abilities. Through big data, teachers can analyze and deal with problems in depth, provide real-time guidance for students, gradually stimulate students' interest in learning, and promote the development of students' individuality.

3. The Problems in Information-based Teaching Mode in Colleges and Universities under the Background of Big Data

3.1. Single teaching mode, lack of innovation

Although China's modernization has been accelerating, the reform of higher education has not made the same progress. However, at present, the teaching in universities has not really realized the transformation from traditional teaching mode to information-based teaching mode. Many universities only apply information technology to teaching, but the traditional teaching content and methods have not been innovated. To a certain extent, traditional teaching plays a role in promoting the communication between teachers and students, realizing the completion of teaching tasks and improving students' learning effect. But fundamentally, the role of information technology in teaching has not been fully played, and its role in classroom innovation and the cultivation of students' autonomous learning ability still need to be developed [2]. At present, great breakthroughs have not been made in the innovation of teaching mode in Colleges and universities due to the limitation of resources and environment. There are still some shortcomings in the existing teaching methods and contents in cultivating students' independent innovation ability and practical ability, which makes the homogeneity of talent cultivation more serious and limits the development of talent.

3.2. Single teaching evaluation mechanism

At present, in the teaching mechanism of higher education in China, teachers are the main body, and students learn knowledge from teachers. At the same time, the mechanism of evaluating teaching effect is relatively simple. Fundamentally, the school has not implemented a student-centered mechanism. Schools can improve the teaching mode and system through teaching evaluation to meet the diverse needs of students and constantly improve the teaching level. The establishment of teaching evaluation models in many colleges and universities is still based on the degree of students' mastery of knowledge, emphasizing the learning effect, evaluation methods and evaluation content. The evaluation is based on more single information, which makes the evaluation results less convincing and subjective.

3.3. The ingrained traditional teaching mode

Because the traditional teaching mode is ingrained, it is very difficult to promote the teaching reform. Therefore, only information technology cannot be used to optimize the design of teaching methods and teaching objectives, and promote students to consolidate teaching concepts, deepen understanding of teaching knowledge, broaden students' learning horizons, and improve students' scien-

tific innovation spirit. Moreover, students will form the concept of passive learning in this teaching mode for a long time. If learning is only a process of obtaining exam results, students will neglect the fun in the learning process and lose the motivation of long-term learning and participating in scientific research and innovation.

4. The Construction of Information-based Teaching Mode in Colleges and Universities under the Background of Big Data

The information-based teaching mode based on big data is a new teaching mode. Its establishment and application are very complicated. It is an important task to carry out the reform of information-based teaching mode based on big data in colleges and universities. In the process of implementation, we need to continue to promote the basic concept of big data-driven from teachers, countries, schools and other levels, promote the continuous progress of reform, and realize the development of information-based teaching mode. Schools should strengthen the development of teaching software, constantly improve the maintenance and utilization of teaching resources, ensure that teaching resources are fully utilized, and reduce the waste of teaching resources. From the perspective of teachers, information technology is only a tool used by teachers , and teachers should not be busy with the use of information technology. They should not turn human teaching into machine teaching. Otherwise, information technology will lose its role. From the perspective of schools, the development of teaching software should follow the concept of "more, faster, better, more economical". "More" means more features, more resources and more use; "faster" means learning fast, doing things quickly; "better" means humanity, dynamics, and using it; "more economical" means saving money and time without having to use it in vain [3]. From the perspective of the state, the government should take "the revolutionary impact of information technology on education development" as a major strategic decision, and formulate practical education policies and regulations with the support of big data and according to the education development strategy.

Online teaching has its unique teaching advantages. Through the online learning platform, students can communicate with each other as much as possible to learn knowledge. At different stages, information-based teaching should provide students with different types of knowledge. Online open course can effectively combine with traditional teaching and give full play to the role of online teaching. With such learning conditions, students in the initial stage will lay the foundation of knowledge. With the deepening of learning and the accumulation of knowledge, students can find the correlation between knowledge and learn to study independently. The more digital resources are used, the more fully their value will

be brought into play. Therefore, it should constantly improve and reform the teaching system, expand the database and increase the teaching video, and standardize the recording of students' learning information.

5. Measures for the Reform of Information Management in Colleges and Universities under the Background of Big Data

5.1. Sharing of teaching resources

There is still a big gap between the eastern and western regions in the distribution of educational resources in Chinese universities. At present, there are high-quality teachers, equipment and resources and a lot of financial support in the eastern region. In the context of large data, there are still a large number of teaching resources in the form of data in public network and computer hardware facilities. These data are huge and disorderly. Although there are many high-quality teaching resources with high value, no one pays attention to them. College teachers should have an inclusive attitude towards the sharing of Internet resources, actively explore high-quality teaching resources on the Internet, collect and organize them, and share teaching resources with students. Some teaching resources can be opened to the society to promote the development of public education.

5.2. Improving the information level of teachers

In the curriculum reform of colleges and universities, teachers are the main participants in the reform. In order to fundamentally promote the development of reform, teachers should have a correct understanding of the current environment of big data. First of all, colleges and universities should establish a comprehensive teacher training system to improve the information level of teachers through various means. For example, schools should implement some related courses or conferences, send teachers to senior institutions or research institutions to visit and study, and invite relevant experts and scholars to give lectures. Secondly, the selection and training of teachers should be inclined to the young teachers. Young teachers can more easily accept the new ideas of big data, and they can more easily learn the information and network knowledge and quickly apply it to teaching activities [4]. It is easier for students to communicate with young teachers, and young teachers are better at understanding the learning dynamics of students, which is more conducive to students' independent learning.

5.3. Improving the evaluation model for students

The reform of curriculum teaching in colleges and universities should abide by the student-centered principle. In the process of teaching reform, if the teaching content is not optimized and there is no corresponding evaluation mechanism, the teaching reform cannot be continued. For

example, in online resource teaching, students not only need to learn the teaching video, but also need to complete relevant after-school exercises or summaries. Only by combining the flexibility of learning time with the rigidity of learning management can online teaching be guaranteed. Secondly, for the new teaching model, the school should do a good job of evaluating the content to ensure that each student can actively complete the online learning course.

6. Conclusion

With the development of science and technology and the gradual improvement of the Internet, big data and cloud computing technologies will be more applied to social production and daily life, and the future society will change accordingly. Under the background of big data, the reform and innovation of information-based teaching mode in colleges and universities has become the focus of research on education reform. Therefore, in order to solve these problems, the demand for information management of college students in the context of large data is getting higher and higher. The perfection of information

management can achieve the goal of steady development of universities and make information management more suitable for the development of modern society. The arrival of the era of big data has a great impact on the management of students in higher vocational colleges. Similarly, higher vocational colleges can also use information technology to improve the efficiency of student management, which is also an opportunity.

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