

The Development Path of University Education Management Informationization Innovation in the Big Data Era

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Abstract: With the continuous advancement of science and technology and the accelerated flow of information, people have more and more close communication, which has facilitated life and changed people's lifestyle. Big data is the product of the development of the times, and it has a profound impact on all aspects of life. The informatization management of colleges and universities is also developing under the background of the era of big data. How to make a series of changes to education management information today with the rapid development of information in the era is a challenge for related staff. The effective management of data can not only promote the progress of individual schools, but also greatly promote the education industry. The article mainly expounds the development path of university education management informatization innovation in the era of big data.

1. Introduction

Big data means that the amount of information is very large, and the emphasis is on the large amount. The stored data is not a stack of huge amounts of data, but a sort and analysis of huge amounts of data. Of course, big data is not only the analysis and arrangement of data, but also the analysis and summary of massive data, and explore the laws. The calculation method of big data analysis is more accurate. For example, we bought a product online, and Taobao will recommend similar products based on your browsing. As a result, conclusions drawn from big data analysis are often accurate. In the context of big data, the education management of universities can also use information resources, rely on information management methods, optimize and integrate data information, and develop and use them. Depending on this innovative management method and method to achieve the overall management of colleges and universities improved efficiency [1].

2. The Overview of Big Data Technology

2.1 Big Data Technology Concepts

Big data was first proposed by Toffler in 1980, and has been followed and applied by many industries. It can be said that big data is the product of information technology. The concept of big data can be defined from the following aspects: First, the nature of the data source. Big data is a large-capacity group of large-capacity database software that collects information, then analyzes and integrates the information, and then stores and manages the information. These big data are difficult for ordinary data software to complete. The second is data analysis and processing. Big data makes it possible to collect massive amounts of information through some special database software, and to integrate and store this information. In the process of data collation, the correlation between data can be analyzed [1].

2.2 Main Characteristics of Big Data Technology [2]

Veracity: The information obtained by big data is continuous data, which is true and reliable, and the data analysis process is more accurate, which greatly improves the effectiveness and credibility of

data processing.

Velocity: Fast speed is the most prominent feature of big data. In data processing, a new technical framework is applied to solve the limitations of traditional data processing models.

Variety: The traditional data types are mainly structured data. The storage is in the form of row data. Big data incorporates images, videos, text, audio, etc. into the processing object to achieve unstructured, semi-structured and structured integration of data processing.

Volume: Every industry produces a large amount of data in its daily work. In 2012, the total global data totaled 2.7ZB. It is expected that this data will soar to 40ZB in 2020.

Value: With the help of big data, it is possible to mine the implicit relationship between the data, so as to find the important information more accurately and quickly.

3. Problems Existing in the Innovation and Development of Education Information Management

With the in-depth development of education system reform, the construction of informatization management in colleges and universities has achieved remarkable results. In the current era of big data, information management in colleges and universities has become a trend of development. Educational management with the assistance of diverse management software has greatly promoted research results. Make colleges and universities have more opportunities for development [2]. In the era of big data, in the development process of efficient education management informationization, management-related staff need to face challenges such as technology and find big data and the relationship between student management. In the current form, the following problems still exist in the information management of universities.

3.1 Insufficient Awareness of Data Applications and Internet Use

To apply big data in university information management, university staff need to establish certain application technologies. Increase individual awareness of applications such as big data. However, in the current colleges and universities, a large part of the staff is not aware of the use of big data and other technologies. The advantages of big data in some aspects have not been recognized. In the actual informatization management work in colleges and universities, the data models do not match, the technology is limited to a certain extent, and problems such as the in-depth application of technology exist [2]. For these problems, for the completion of technical goals such as big data, most colleges and universities have not formed a complete management system for the application of big data. The core of the application of technology lies in the circulation of data. Such conditions cannot be reached in most colleges. Only by cultivating the staff's big data technology thinking ability can the big data be truly applied to university management [1].

3.2 Inadequate Standardization of Data Management

Students have complexity in education. Colleges and universities do a good job of student management under the premise of combining big data. Under the role of diverse information systems. For example, student information systems and educational administration systems. Through the coordination of various systems to complete the education and management of students. Promote unity between the school and the school. In fact, the data in the management system is clear, but the uniformity and standardization of the data are insufficient. Changes in data cannot be combined with each other, and there are irregularities and non-standard phenomena between the original data and the added information [3]. Data is difficult to circulate and share. Therefore, this will lead to the slow development of information management.

3.3 The Management of Education Data in Each Department of the University is Independent

Colleges and universities are a complex system that can not be completed by a single department, but by the coordination and cooperation of several departments. In the process of university informatization management, different departments have different functions and restrictions on powers. The sources of information they obtain, the content of information, and the means of

information processing are different. Different departments and different units use different information systems. This makes the school flawed in student management. Information is independent between departments and has a great impact on the establishment of a unified school database. Independent data can only integrate data flow and information channels within certain limits [3]. In such a practical situation, big data technology is a stumbling block in university management.

3.4 It is Difficult to Integrate Information between Various Majors in Universities

Colleges and universities seem to be a purely educated place, but their management of education and their relationship with socio-economics have a great bearing on students' future development and career choice. So education management has an indirect relationship to the future development of students. Student selection and employment are the criteria for measuring a university, and this is a mutual process. Colleges and universities are places for cultivating outstanding talents in various specialties. For social economic data acquisition, social development and the integration of student information, students can have a general understanding of future employment and social development trends [4].

4. Countermeasures for Education Information Management

4.1 Building Big Data Awareness

After analyzing the data, a series of decisions are made scientifically and reasonably. So as to achieve the goal of democratic management and promote the reform of teaching. Traditional teaching scenarios and the collection of information during the teaching process. School experience is the main source of support for general school decision-making. In the context of the era of big data, the measure of teaching is not the quality of teaching and the richness of teaching experience, but the feedback of data from multiple aspects of the needs and opinions of students. The best method and decision-making is to make decisions and make decisions through this effective and reasonable analysis of data. The rational analysis of data not only has a very important impact on the in-depth development of activities such as teaching, but also achieves the teaching goals of teaching students based on their aptitude. If the data is used reasonably, it will be combined with the overall and future development of the school to cultivate the talents needed in the society. Constructing an information exchange platform and deepening educational reforms to meet democratic teaching management, so that students are satisfied with the actual data of the school. There is an overall grasp of students' career choices and future employment directions and trends, and the reputation of the school will continue to increase [3].

4.2 The Big Data Era Deals with Data and the Problems Shown in the Data

The root cause and cause of the problem will be found, which will play a positive role in solving the problem. In the traditional teaching management mode, data integrity and uniformity are imperfect. To some extent, the relevant decision-making in universities involves the interests and wishes of many people in the school, and the university will vigorously promote democratic management to a great extent. The needs of both teachers and students are reasonably positioned. The results of scientific decision-making were effectively implemented and the teaching management was refined. Schools will increase the use and promotion of big data. In order to establish a data-based education management system. In this way, the decision-making of the school's leadership will not be one-sided and subjective, and avoid a series of realistic effects. But with big data, students' opinions can be feedbacked, and these methods can be used to solve practical problems democratically. The new democratic management model will replace the traditional teaching management model and further innovate the teaching management model. The support for intelligent technology mainly comes from the leadership of universities, and it is widely used in enterprises. Universities currently do not use technologies such as business intelligence [5]. Relevant data is used on a certain basis to provide solid technical support for decision-making and judgment of leaders.

4.3 Building a Higher Standard Information Campus in the Era of Big Data

The campus network is particularly important in teaching and information management. However, teachers need to avoid potential security risks when using network security. Information leakage is also an important security risk. In this way, we must strengthen the protection of network security and other issues. For the network to be used for periodic detection, viruses and various vulnerabilities that invade the system need to be handled properly, and corresponding virus killing and patch repair software must be installed. Provide practical protection for the security of student information [5]. Once the information and other data are leaked, the adverse consequences will seriously damage the interests of teachers and students. For the application of big data, we need to pay attention to certain methods, not just pure data analysis. After the data is circulated within the school, it is possible to analyze the data and some relationship with the school. In the context of big data, it is necessary to abandon traditional teaching concepts and deepen teaching reform.

5. Analysis of the Development Strategy of University Education Management Informatization

5.1 Building a Network Information Platform

In the education management of colleges and universities, a large amount of data information is bound to be generated, such as the information of students, staff and staff. The effective use of big data technology can promote the development of education management [6]. Therefore, colleges and universities need to pay attention to the construction of network information platforms. In this way, through the big data platform, it will help colleges to uniformly store and manage data, and it will help colleges to accept and research data information, Data are cleaned and calculated. In the context of big data, universities need to keep pace with the times and conduct in-depth exploration of big data platforms. In this way, it can realize the informationization of university education management and greatly improve its management efficiency. In the management of students, universities need to make reasonable use of big data technologies [6]. Do not use independent or incomplete data as an auxiliary tool for information management platforms. Instead, you need to increase capital investment and create big data processing platforms.

5.2 Establish the Correct Big Data Concept

In the process of applying big data technology, colleges and universities need to strengthen the education and training of teachers and relevant leaders to enable them to establish a concept of correct application of big data technology. Because only when they have a strong sense of big data can big data technology be better applied in education management [7].

5.3 Pay Attention to the Construction of Network Security

In the context of big data, many colleges and universities have begun construction of information campuses, such as the construction of campus networks and the establishment of various data management platforms [6]. Through this information construction, the data management and teaching work of colleges and universities have been better developed. However, the Internet is a double-edged sword. If it is not used properly, it will also affect the development of universities. Therefore, colleges and universities need to pay attention to the construction of network security to prevent information leakage. At the same time, for the information network environment, universities also need to carry out real-time monitoring and do a good job of system vulnerability remedies. For the bugs in the campus website, we need to arrange professional technicians to fix them. The reason why the implementation of network security construction is mainly to maintain the security of the data. If the equipment is damaged, it can be repaired, and if the program is leaked, it can be repaired, but if the data is lost and damaged, it is difficult to complete the repair [7]. Because all the teachers 'and students' information of the university is in the campus network, once the campus network management server has a problem, the security of these data will be threatened.

6. Summary

To sum up, in the context of big data, colleges and universities need to keep pace with the times and realize the informationization of education management. To achieve this goal, colleges and universities need to build a scientific and standardized network information platform; to strengthen ideological education for educators and help them establish the correct big data concept; also need to pay attention to the construction of network security.

References

- [1] G.M. Xin, Research on Innovation and Development of University Education Management Informationization Based on Big Data, *SME Management and Technology*, vol.9, pp.83-85, 2018.
- [2] K.T. Yue, Exploration of University Education Management Innovation in the Big Data Era, *Journal of Xinjiang Radio & TV University*, vol.2, pp.60-64, 2017.
- [3] D.X. Zhao, Innovative Development Strategies of College Education Management Informationization in the Era of Big Data, *Curriculum Education Research*, vol.10, pp.31-33, 2019.
- [4] Sh.Y. Wang, Analysis and Suggestions on the Status Quo of University Information Construction in the Big Data Era, *Management and Technology of Small and Medium-sized Enterprises*, vol.8, pp.83-84, 2018.
- [5] X.G. Cheng, Innovative Development Path of College Education Management Informationization in the Big Data Era, *Theory and Practice*, vol.9, pp.194-196, 2017.
- [6] X.P. Li and B.B. Xing, Discussion on the Construction of University Financial Management Informatization in the Era of Big Data, *Research on Educational Finance and Accounting*, vol.3, pp.77-80, 2018.
- [7] L.P. Tang, Development Path of Informationization Innovation of University Education Management in the Era of Big Data, *Comparative Study of Cultural Innovation*, vol.5, pp.121-122, 2018.