Research on the Innovation Path of University Management Informatization under the Background of Big Data

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Abstract: The application and development of big data technology has brought about corresponding technological reform to various major industries. Colleges and universities can improve their own internal management system construction and management mode by using information technology, which can improve the efficient management efficiency and competitiveness in the industry. The educational management mode and efficiency of colleges and universities have affected the teaching level and quality of colleges and universities to a certain extent. The information management of college education has been a hot topic in recent years, and many reform suggestions and requirements have been put forward. Based on this background, this paper discusses the innovative development ideas and models of current college education management informatization, hoping to improve the quality and efficiency of college management and realize the innovation and development of efficient informatization transformation.

Keywords: Big Data; College Management; Promotion of Information Technology; Innovation Path

1. Introduction

We should strengthen the effective application of big data in the information management of colleges and universities, change the traditional education management mode of colleges and universities, innovate the thinking of college education management, and point out the direction of information transformation for the future development of colleges and universities. In the process of information management development, relevant university administrators need to understand the characteristics and advantages of big data development, understand the important value of information management mode to university education, improve the data application awareness of personnel, promote efficient data management, and achieve efficient, healthy and long-term development. Big data technology has improved the comprehensive utilization rate of the data system and maximized the efficiency and quality of information management, which is a major development trend of university education management.

2. Time connotation characteristics of big data technology

The concept of big data technology originated in the United States, mainly through collecting relevant data information in the Internet environment, mining the value behind the data information, reflecting the decision-making power and insight brought by data, which are important values of information resources. The characteristics of big data technology reflect the authenticity, diversity, efficiency and mass storage of information. For example, use big data for precision marketing, improve the coverage of product and service markets, and apply big data technology to e-commerce, new retail and other aspects to provide new ideas for the transformation and upgrading of traditional industries. Using big data technology for decision support Big data technology has strong sensitivity and complexity in data collection, data analysis and processing, and has the technical characteristics of massive data processing, intelligent decision analysis, etc. to provide support for decision-making, which requires big data technology to have high-level computing capacity, big data processing capacity, data analysis capacity, and distributed storage and processing capacity of big data.[1] Therefore, when applying big data technology for decision support, we should first consider data processing capabilities, and pay attention to data analysis capabilities, especially distributed storage and processing capabilities, which play an important role in the age of big data.

On this basis, the information transformation can be carried out by combining the management

content and management mode of the universities, and the big data technology can be used to process the data, so as to better realize the transformation from the analysis results to the decision-making service. Using big data technology to realize data mining and data analysis. Big data technology is widely used in the field of data, expanding in depth and breadth, and more data is needed to support the big data processing capacity and data analysis results, so as to form new industrial business forms and new business models. Data has become an important resource for promoting the transformation of economic development patterns, modernization of national governance systems and capabilities, and modernization of social governance. Therefore, when universities apply big data technology for data processing technology, they should not only consider that data value mining technology itself has high research value and good technical performance, but also combine big data technology. Develop an information management model that is suitable for the requirements of the big data era and can efficiently complete the data analysis process, thereby promoting the long-term healthy development of universities.

3. Analysis of the problems in the innovation of university information management

3.1. Lack of big data application awareness

To use big data in teaching management, a big data application system must be established, and various teaching data, management data and scientific data must be summarized and managed to improve the efficiency of teaching management. However, in the actual teaching management work, it is difficult for managers to make full use of their own advantages because they do not fully understand the role of big data, which restricts the information construction of the school. This is mainly because universities do not pay enough attention to big data technology and do not fully realize the importance of its era and operation, which leads to the failure to improve its application awareness in the informatization process of education management[2].

3.2. Lack of standardized information management mode

Universities must form standardized and unified university management data to promote the construction of university education database. The management work and education work of colleges and universities are complex and redundant. Therefore, in the management work, we must make full use of big data systems and information systems (such as employment data system, data acquisition system, educational administration management platform) to do a good job in student management, and then promote the unification of data information outside and inside the school. However, because the existing data and existing data cannot be organically combined, there are imperfect and non-standard phenomena, and teaching management data cannot be shared and flowed, which restricts the implementation of teaching management informatization.

3.3. Independence of data in teaching management

The teaching management of colleges and universities requires the joint efforts of all aspects. However, in the specific teaching management, the authority of each department is clear. Due to their different responsibilities, the acquisition methods, basic content and processing methods of data are not the same, so the use of data is not the same, which leads to the obvious loopholes in the data management of the school. The isolation of data limits the traditional database construction and hinders the development of informatization. At present, some universities in China have not established a reasonable and complete data processing system and information platform, which are realized through limited ways, which has a great impact on the efficiency and quality of teaching management in colleges and universities.

3.4. The integration of university data and information

The educational management of the university is closely related to the development of the market economy, and to the students' professional learning and personal growth. Therefore, as an important place to train talents, colleges and universities need to organically combine the social data and the data of college students on the basis of sufficient social information, so as to promote the sustainable development of schools. However, in the data collection stage of the school, it is difficult for the school management personnel to effectively collect social data, and the collection of data by the relevant departments is not comprehensive and timely, which has a great impact on the comprehensive quality of

students.[3] From the perspective of the application object of big data technology, big data technology is to analyze all the data and information in the network, so as to realize the function of educational decision-making. However, the lack of ability of universities to collect social data and information collection is difficult, which greatly limits the application of big data technology, provides scientific basis for universities, and prepares them for employment, scientific research and learning, thus indirectly affecting the normal development of colleges and universities.

4. Innovation Path of University Management Informatization under the Background of Big Data

4.1. Establish big data application concept

Based on the problems existing in the current informatization construction of education management, in order to realize the transformation of informatization management, colleges and universities should make education managers deeply understand the educational significance of university data, pay attention to the accumulation of data in the education process, actively collect and collect real-time data, combine the external and internal data of universities, and maximize the value of education resources and education resources.

Secondly, we should change the business idea of information management. The introduction of big data in education management can effectively solve the defects of the traditional management model and improve the quality of teaching management. Through a deep understanding of the consistency and relevance of data, the quality of data collection is constantly improved, ensuring the application of big data technology in education management.

Finally, standardize the data analysis process. Through the use of big data technology in education management, the teaching management model has been innovated, so that data, information and management systems can flow with each other, and can effectively analyze the relationship between internal and external information of the school and education administration information.

4.2. Strengthen big data construction

First, formulate the classification standard of data information. Colleges and universities should collect relevant data and materials from three aspects: teaching management, scientific research management and student management. At this stage, universities can collect information in relevant fields through "screening", striving to be comprehensive and detailed, and ensure that each data is representative. Then, according to the types of data, we classify them, explore the correlation and compatibility between the data, establish the data collection criteria, and then collect various types of data in colleges and universities according to the information collection criteria.

Second, establish a data platform. The platform shall cover all disciplines, specialties and functional departments, and can connect different databases according to the correlation between data to form a unified database system. All departments can use this platform to collect relevant data to meet the needs of daily teaching management. In the daily operation and management of the platform, a feedback mechanism should be established. When the data content is incomplete, the staff can reflect the problem to the platform administrator, and the administrator can make up for it by using information collection tools. Realize the overall development of platform information management, and promote the improvement of university information management mode.

4.3. Strengthen the optimization of information integration system between universities and the outside world

It is difficult for colleges and universities to obtain social data. Therefore, relevant departments must establish a scientific and reasonable social data system to improve the connection between them and university education. In the data collection stage of education management, the education department can cooperate with the market department to collect the existing enterprise data and analyze the development of each industry by using the broken line chart, so as to show the development of each industry to the university.

Using the hierarchical theory to establish the industrial development information database, the relevant departments can choose the companies with good development and poor development in a certain industry to cooperate, collect, analyze and process relevant information. Integrate university

education materials and social enterprise materials, and establish a data sharing platform. Colleges and universities can use the sharing platform to timely grasp the development of the industry corresponding to each major, and also can timely grasp the development of colleges and universities, and feed it back to the major colleges and universities, so as to promote colleges and universities to take appropriate teaching management measures to optimize their teaching methods, contents, concepts, etc.

The current difficulties of students' employment industry and industrial development were studied in depth to help students understand their career planning. Under the new economic model, modern enterprises are constantly facing new industrial changes. Colleges and universities can use the "social industrial information platform" system to find the problems of modern enterprise development, and through the existing scientific research team, combined with the education and industrial development of colleges and universities, establish a new talent training system, improve the core competitiveness of school teaching management, and make the management work play its value.

4.4. Strengthen the professional construction of information technology management personnel

In order to reflect the development mode of informatization in colleges and universities and make the effective application of big data technology, it is necessary to strengthen the construction of professional teams and cultivate technical personnel who understand management, technology and leaders, who are the backbone of the informatization construction of colleges and universities. At the same time, in the actual construction, we should combine the purpose of big data application, grasp the characteristics of the development of The Times, and cultivate a professional talent with data visualization, data mining and data storage through specific training activities. The use of professional technical teams can organically combine technology development and teaching management, integrate management practice and information technology, and promote administrators to become senior managers in the context of big data.

Establish the school-enterprise cooperation mode, so that teachers can directly engage in the work related to big data technology in enterprises, and improve their data processing ability. In addition, the company staff with rich experience can also be hired to participate in the teaching management work, optimize the management, deepen the understanding of the teaching management system in colleges and universities, and gradually find the deficiencies and disadvantages of the teaching management system, and then adjust the existing data system to meet the needs of teaching management in colleges and universities. In addition, in the aspect of management team construction, the corresponding system should be established to further standardize the work behavior of relevant personnel and improve the work level of the management team.

5. Conclusion

To sum up, in the context of big data, efficient education shows the trend of informatization. It needs to innovate and change based on the current education management model, recognize the connotation and value of big data development, improve the awareness of big data technology application, and cultivate excellent big data application talents. In this process, we will deeply analyze the development advantages of college information management for teaching work, establish a sharing platform for data integration, and enhance the strength of schools to obtain information resources, so as to give play to the important technical advantages of big data technology in teaching management.

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