

Original Paper

Research on the Application of Big Data in the Informatization of University Education

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Abstract

With the continuous development of information technology revolution, cloud computing, Internet of things, Internet and other information technologies appear. They have infiltrated every corner of society. As a result, the numbers are exploding. It is difficult to estimate the value and information of these data. Education has become an important front in social life in the era of big data. This paper mainly analyzes the data characteristics and data sources. In the era of big data, the application of big data in the informatization of college education is discussed.

Keywords

big data, university education, great advantage, data era

Since entering the information age, data has become an important transmission medium in the information age, which permeates all aspects of our life. Regardless of the Internet of Things or the Internet, everything people do is recorded by data. Human beings gradually enter the era of mining the intrinsic value of data. In this wave of data, universities play an irreplaceable role. At the same time, it is also an important promoter and participant in the development of the big data era. Colleges and universities need to use their own information resources and data to play the role of education and research. This can adapt to the development trend of the big data era.

1. Big Data in Universities

1.1 Big Data Concepts and Related Objectives

The concept of big data was first proposed by McKinsey, a world-renowned Internet giant. According to McKinsey, Data permeates every area of our lives and work. It becomes a necessary factor to boost production. People need to use and mine big data. It also heralds a new wave of consumer and

production growth. According to the variable, high speed, large amount of information assets, large numbers become the most effective way to process information. Wikipedia also provides a simple definition of big data. Big data is to use commonly used software to manage and process data and shorten the time needed to process data. At all times, it emphasizes the goals that big data encompasses. First, to acquire knowledge and predict future trends. Secondly, based on its personalized characteristics, through analysis, discrimination and other ways to find the truth. Therefore, we can understand that the real significance of big data technology is not its ability to process large amounts of information. However, big data can enable the collection of data. The relationship and intrinsic value contained in these data are analyzed in the collection, which becomes an effective way for people to optimize their own behavior and decision-making.

1.2 Big Data in Universities

College data sources. Colleges and universities often produce instantaneous data. However, in the process of information technology development, the value of information data is more and more important. Therefore, important information and data will be kept completely. This includes basic business data such as finance, teaching and personnel. At the same time, it also includes network, courseware, network video, distance education resources and so on. Teachers and students can generate behavioral data through various social software such as wechat, Weibo and forums. With the development of the university information continuously thorough, a large number of resources have been better preserved and accumulated, which is a rare wealth for the university. These saved and accumulated data are not simple data preservation and recording. It effectively uses the potential value to help colleges and universities build themselves. For example, data on employment, grades, classes and so on are analyzed. Analysis and overall planning can accelerate the reform of traditional teaching mode to a certain extent, and judge students' interests and hobbies in learning through students' course selection, book borrowing history and other information. In this information age, time is money. Big data applications will speed up the processing of information.

2. Challenges of Information Application in Universities in the Era of Big Data

2.1 Technical Ability

2.1.1 Data Source Availability

The conventional wisdom is that the data speak for itself. People tend to think that data are facts. But as a matter of fact, if the data is not screened, it can lead to the data deceiving people. The availability of information must be guaranteed in the process of obtaining high quality data. This is because there are diverse sources of efficient information acquisition, including teaching resources, multimedia data, administrative department business data, network resources behavior data and so on. The data are gradually diversifying. These data have different quality, which makes the processing process very difficult.

2.1.2 Feasibility of Data Fusion

Through investigation and research, it can be known that if the data is generally disintegrated, it will not play the potential value of the data itself. Universities often face an important problem in the process of using big data, which is how to achieve effective data fusion. In particular, the important educational role of colleges and universities. Therefore, the integration of big data must be carried out effectively. At the same time, only by accelerating the development of social data integration can we avoid the emergence of data islands. This reinforces the integrity of the businesses. However, because traditional business systems lack long-term planning, the technology used is often multi-faceted. According to the investigation and research, the common databases in colleges and universities include Visual FoxProd, Musql and so on. Some schools don't even have their own databases, instead they often use Excel sheets for statistics.

2.1.3 Technical Analysis of Sustainability

The laws of education are hard to control. Successful individuals do not simply copy. There are some defects in education index. Through long-term monitoring and correction, it is necessary to effectively analyze the big data of colleges and universities. It can be found that the data can be compared horizontally, including colleges and functional departments. At the same time, it also needs to do a good job of historical data comparison, including data cleaning, data collection, data mining and so on. It revises and adjusts the data generated on a daily basis. This is also a teaching and management challenge in universities.

2.2 Implement Ability

2.2.1 Big Data Sharing Awareness

In the era of big data, it is necessary to analyze massive data. Many behaviors are not based on big data. But most of the data in colleges and universities comes from functional departments. Large amounts of data are used in fragmented, independent functions. This results in these resources becoming increasingly private data assets of a functional department. There are two main reasons for this. First, many data accumulation practices have been around for a long time. Therefore, the workload of data processing is relatively large. Second, many business units are not clear about the division of resources that can be shared. As a result, they lack the sense of sharing information resources. Only the continuous circulation of information resources can form the scale, which maximizes the value of data. People need to raise the awareness of data sharing in colleges and universities.

2.2.2 Organizational Structure and Staffing

Due to the lack of information resource planning in colleges and universities, there is a gap between resource investment and the ideal state. Different departments struggle to maximize value. Before vigorously promoting informatization, many colleges and universities failed to establish special informatization departments. The general manifestation is a shortage of skilled personnel. In the process of promoting university data, we need a group of personnel who are familiar with both business processes and relevant technologies. The lack of talents is not conducive to data integration, resulting in

slow educational research.

3. The Main Strategies of Big Data in the Application of College Education Informatization

3.1 Establish Scientific Data Planning

In the process of information development in the field of education, colleges and universities generally show the lack of information awareness, resulting in unstable data quality. In the era of big data, workers show a vague awareness of data planning and focus on the value of data. But they don't know how to share, use, and plan data. Only by making scientific and effective data planning can the data model have vitality. We can increase and adjust the data to be used in a variety of databases and systems. Therefore, this plan requires long-term planning.

3.2 Strengthen Data Quality Management

Data quality is the essential basis to ensure the accuracy and validity of data analysis. For the application of big data, colleges and universities must consider the following problems in data quality management. First, the data collection phase needs to be efficient, comprehensive and standardized. This should have the collection speed and meet the accuracy requirements. At the same time, it can ensure that the amount of data is controlled from the source. Second, in the process of cleaning the data, it is necessary to adopt accurate and reasonable methods. This can remove a large number of unqualified data, it extracts valid data and ensures that the data is of high quality. On this basis, it is necessary to establish a more perfect management mechanism to improve the construction standards, pay attention to the accumulation of art data, strengthen business learning, which improves the quality of data.

3.3 Establish Complete System

In the process of management system construction, colleges and universities clearly stipulate the division of authority, the operation of responsibilities and the establishment of institutions. Therefore, it is necessary to properly adjust the expression of interest relationship of traditional management mode when colleges and universities carry out data sharing and application. This usually needs to realize system reform and optimization adjustment first. Only careful and comprehensive promotion by grassroots departments can eliminate the difficulty of resource sharing among different departments. Starting from its own technical advantages, the information department integrates the data of each business system. By building a data collection center, it transforms the status of passive data collection into an active data maintenance process. School departments also need to analyze the data provided by different levels of users. Functional departments should cooperate, communicate, follow up and give feedback, which can ensure the better application of big data in universities.

4. Conclusion

The arrival of the era of big data has had a great impact on all walks of life. The informatization construction of big data in colleges and universities needs to be analyzed from the aspects of

implementation and technology, and it can solve the problems faced in the construction process. With the in-depth application and understanding of big data, we hope to see big data technology can bring more vitality to the construction of colleges and universities. This makes the application of big data truly integrated into universities.

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