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REVIEWS OF EXPERIENCES OF BIG DATA LEADING UNIVERSITIES IN IMPLEMENTING BIG DATA

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1. INTRODUCTION

With the gradual introduction of educational information policies and the continuous progress of big data information technology, big data education has entered the application and exploration stage of the collection, storage, analysis, and presentation of big data. In the exploration and application of new technologies, due to the high cost of trial and error, unknown risks and other influencing factors need to be carefully considered and gradually explored. Therefore, it is necessary to find out the key problems, find corresponding solutions, and gradually solve them. The research on fully realizing the process of efficient management of big data in universities will also provide some experience for other countries. Therefore, what is the significance of higher education institutions to implement big data? How do higher education institutions formulate big data policies?

2. METHODOLOGY

The paper is qualitative. The method used in the research is descriptive and analytical. For the descriptive one, I will describe the reasons why and how this university adopts and implement big data. On the other hand, the analytical approach will guide the researcher to explain, review and analyse the progress, problems faced by respective universities and propose some possible recommendations in the implementation of big data in those universities. The method of collecting data is primarily based on available data, articles and government documents, magazines, and the internet.

3. ANALYSIS AND DISCUSSION

Several universities are chosen here: Minnan Insitute of Technology, Washington University Lancaster University, and Heidelberg University, here. Their experiences are generally reviewed in terms of the purpose and significance of big data implementation, how they formulate big data, as well as the problems and problems or obstacles faced by those universities as well as the achievements achieved so far.

3.1 Significance of Big Data Implementation in Institutions of Higher Learning

The development of a country cannot be separated from the development of education, but the development of education must keep pace with the times and play a major role in harnessing the potential and effectiveness of the use of big data in the reform and advancement of education and national development.

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As the promoter and supporter of social civilization, in the era of the knowledge economy, is a very important social core institution, and unity and regulation are the outstanding characteristics of traditional education management, lack of personalized and humanization, and there is a certain gap between modern management of scientific, refined, personalized and intelligent. The application of big data in college education management is the trend of the times. Traditional university management mainly experiences subjective management mode, rely on in the process of decision-making own ability, although there are research, communication, learning improve scientific management process, but the overall efficiency is low, especially the management effect is difficult to evaluate in time, need a long time to see the effect, this is bad for university management.

3.2 How do Higher Education Institutions Formulate Big Data Policies?

Lancaster University of Lancaster has developed a research data policy. The university's web page has a guiding and helpful guide to users to conduct scientific research data management, which predicts the problems encountered by researchers in the management process in advance, and provides solutions:

Data Saving: The school provides two institutional databases and e-mail ways to save almost any size of data and provides two ways to use guidelines and problem solutions. Both ways schools have unified data collection templates to get more clear information in the first place. The management of research data is divided into three stages: the application stage requires a complete data management plan; the research stage requires safe and reliable data and convenient search and reuse; during the submission and release stage, researchers should choose the option of the data preservation for at least ten years and describe the status and location of the data preservation. School assists, solving problems, publishing, and training during research. The service personnel will be classified: staff services, services for college students, services for graduate students, services for researchers, and services for general visitors.

Heidelberg University, Germany. The research data management service of Heidelberg University is organized and implemented by the Research Data Capacity Center established by the university.

Data discovery: Heidelberg university has a HeiBIB data database website, on the one hand, researchers can retrieve the relevant research of the institution, on the other hand, because the data knowledge database registration system re3data.org itself is German science foundation-funded construction, most of Germany's research institutions data knowledge base are registered in the above, therefore, through the platform or can find other related scientific research data.

Storage of data: Provide local hei BOX, bwFile Storage supported by the computing center to store large files and copies of data not shared externally; some important, critical data, universities provide SDS@ HD servers, a state-provided storage infrastructure with a high-security level. At the same time, the university provides data synchronization tools and file transfer tools.

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Data record analysis: provide researchers with metadata scheme support services, provide heiCloud systems: including processing CPU, memory, storage, network, and other basic computing resources, users can deploy and run any software, including operating system and applications.

Minnan Institute of Technology, China. From the relevant survey of Minnan institute of technology： The application of big data in the student management foundation of private universities is relatively weak； Students' ideas are relatively backward, and they need to be further changed； There are contradictions between student data collection and privacy protection； Excessive rely on big data, weaken the artificial advantage.

i Because big data has not been fully applied to students 'management, in many cases, people who know student management do not know how to apply big data to manage students or understand big data know little about students' management, which makes big data cannot be quickly applied in the process of student management.

ii Due to the application of big data in student management time is short, in many cases, the students of big data in the teaching process and student management process of the concept are still backward, for the traditional words and deeds teaching has been very accustomed, students have not yet from teacher teaching mode to students independent learning teaching mode.

iii Big data collected everyone's personal information of the information statistical analysis and management, at the same time big data makes students' privacy and freedom is seriously threatened, especially in the current information technology is not perfect, may appear information leakage, information theft and information trading, make the data collection and privacy protection between this huge and prominent contradiction.

iv People have the infinite pursuit of big data, the advantage of big data, so that in the process of student management often one-sided that through big data collection information, grasp the process of student management, can deal with any problems in student management work, and weaken the unique advantage in the process of student management, also ignore the defects of big data itself.

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University of Washington, United States. Since its establishment in 1993, the University of Washington Teaching Evaluation System (OEA Services) has become a world-renowned evaluation system for higher education teaching after more than 20 years of development.

However, there are some structural problems in the teaching system of big data generation. Evaluation content is complex, evaluation data is distorted.

i. The evaluation form of each course of the University of Washington has 31 objective questions, 4 supervisor questions, covering the course content, teaching effect, teaching level, student satisfaction, and improvement suggestions, etc., and the evaluation time is more concentrated before the end of the course, the final exam, the domestic evaluation system is similar. If the average of 10 courses per semester, students have to answer a lot of similar questions in a short period, and they often quickly lose tolerance and begin to answer. Some students will directly score teachers according to the impression of teachers. Teachers who do not like to name names, less but simple homework assignments, and high examination passing rates are easy to get high scores. On the contrary, teachers with strict attendance requirements, high homework difficulty, and strict revision of the examination are often given low scores by students. This collection to evaluate data no doubt lost objectivity and caused serious data distortion.

ii. The evaluation mode can often only form summary evaluation, and it is difficult to form diagnostic evaluation and formative evaluation. From the perspective of the time and content of the teaching evaluation, the summary evaluation is a macro evaluation, which is easier to be obtained through questionnaires, final examination, and regular evaluation. The diagnostic and formative evaluation of microscopic nature, the above models are not applicable, so they are often more dependent on the subjective judgment of students and teachers. However, a diagnostic evaluation can help teachers to understand the preparation of students before class and determine adverse factors to teach according to their aptitude; formative evaluation is an immediate analysis of problems in teaching to improve the teaching process and adjust the importance of teaching is self-evident. The existing evaluation mode often can only generate a summary evaluation. When the teacher recognizes the problem, the teaching has been over and cannot play a role in advanced prediction and matter control.

iii. The operation and maintenance cost of the teaching evaluation system is too high. The system is jointly responsible by three different teaching management departments, but also needs to print many questionnaires, spend teachers and students a large amount of time in statistics, and finally analyze a large amount of data collected, the whole process invested a lot of manpower, material resources, and financial resources. This is not difficult for the University of Washington, the 59 and the top three in scientific research every year, but in China to learn and introduce the system, only universities in

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developed regions can support it, and those with average teachers and financial strength can only hope.

4. CONCLUSION

The widespread use of big data can play a crucial role in agriculture, medical treatment, production and living, and learning, but information infrastructure construction, people behind the concept of big data application, the lack of government policies and funds, privacy in the process of the use of big data, the lack of big data application is also the key to solve and explore in the process of big data promotion development. In recent years, universities at home and abroad have gradually become the main producers of scientific research data, and with the progress and development of scientific research projects, some problems have also emerged in data management. Therefore, scientific research data management policies formulated by universities have become the specification and guarantee for the reasonable and effective data cycle in the life cycle of data management.

It is suggested that Chinese scientific research institutions incorporate the provisions on scientific data preservation into scientific data management policies; when formulating scientific data preservation policies, they should be based on data sharing concept, clarify the rights and responsibilities of each relevant subject, focus on reality, and emphasize the echo of relevant policies. With the current Chinese situation, the construction of databases and data technology is among the most urgent and critical.

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