Research on the Educational Big Data Management and Application Path under the Background of Digital Transformation of Higher Education

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Abstract: With the development of information technology, educational data is widely used in educational decision-making, school management, teaching innovation, educational research and so on. Through data-driven decision making, the level of education management and decision making can be improved, and the predictive analysis ability of education management and decision making can be enhanced, so as to help colleges and universities achieve better education management and decision making. Taking the educational big data management and application measures of Liaoning HE University under the background of digital transformation of higher education as an example, this paper discusses the importance of data management for the university's development and the key elements in the management process, and explores the effective path of educational big data management and application in colleges and universities through integrating data management with school evaluation work practices. Meanwhile, it is expected to provide reference for the digital management in similar colleges and universities.

Keywords: Educational Big Data; Digital Transformation; Higher Education

With the rapid development and wide application of modern information technology such as big data, cloud computing and Internet of Things, digital transformation of higher education is imperative. In this context, the value of data is increasingly important. As a subset of big data, educational big data is of great significance for improving teaching quality, optimizing resource allocation, promoting scientific decision-making, and realizing personalized talent cultivation. Scientific management and effective application of educational big data can better serve the construction and development of colleges and universities.

1. The necessity of educational big data management and application

1.1 Educational big data management and analysis is an inevitable need for the high-quality development of colleges and universities

The healthy and sustainable development of colleges and universities cannot be separated from educational big data. Through collecting various data generated in education, teaching and campus activities, college or university can objectively and efficiently summarize and test its own effectiveness and problems in the education and teaching process and management decision-making. Meanwhile, under the general trend of digital transformation of higher education, scientific management and analysis of educational big data can provide objective data foundation for colleges and universities, help them optimize daily management, carry out self-monitoring, accurate rectification and construction, and scientifically formulate short-, medium- and long-term development plans.

1.2 Educational big data management and application path exploration is the realistic choice of the current university work

At present, the authorities of higher education have taken educational big data as an important means to monitor the normal running state of colleges and universities. The realization of efficient management and application of educational big data in colleges and universities helps them successfully complete various evaluation and authentication work, accurately find their own problems and shortcomings, scientifically formulate rectification and construction plans to ensure the healthy development of themselves.

2. Examples of educational big Data management and application path

Under the background of the digital transformation of higher education, Liaoning HE University analyzes and interprets various evaluation standards and data platform indicators, analyzes and integrates multi-platform data fields to find out the internal correlation and difference, and then optimizes the work flow of data collection and management. The university relies on educational information resources such as smart campus and various business management systems to build an internal normal monitoring indicator system, implement data normal monitoring, and explore to design internal educational data monitoring management system model, so as to help it improve the effectiveness of the university's management and scientific decision-making.

2.1 Establish rules and regulations for data statistical work

Standardized and efficient data statistical work is an important step in the process of digital transformation of higher education. In order to obtain accurate and detailed educational data, it is necessary to clarify the process and carry out in an orderly manner. Liaoning HE College follows the relevant requirements of higher authorities for data statistics work of colleges and universities, and combines the actual work of the university to compile the work system of the collection, management and analysis of educational data in the university, clarify the standards, refine the process, and ensure the timeliness, accuracy and integrity of data collection and update.

2.2 Collect and interpret evaluation data standard

Clear standards are the premise and foundation of work implementation and educational research. Liaoning HE University systematically studies and interprets various standards and connotations of current college running standards and indicators such as Indicators of Basic Running Conditions of 0rdinary Colleges and Universities, Indicators and Basic Requirements of Qualification Evaluation of Undergraduate Teaching in ordinary Colleges and Universities, and Indicator System of Undergraduate Education and Teaching Audit and Evaluation in Ordinary Colleges and Universities, summarizes, sorts out various indicators, and clarifies conceptual differences, so as to provide a basis for the university's evaluation and authentication, major construction, teaching reform, and development decision-making, etc.

2.3 Integrate and analyze multi-platform data

At present, the state carries out normal monitoring of the running state of colleges and universities through various kinds of data collection. There are many data platforms that universities need to fill in every year, such as the National Data Platform for Higher Education Quality Monitoring and the Statistical System for Education Undertakings. Each platform has different functions, but has the characteristics of large data capacity and wide range in common, and a certain number of similar data fields. In this view, Liaoning HE University conducts a comprehensive horizontal comparative analysis of the data fields of each platform according to the requirements of various indicators, combines with the statistical formulas of the data of each platform to find out the internal correlation and difference of the data among the platforms, and guides the accurate collection and filling of data.

2.4 Establish and implement internal normal monitoring indicator system

On the basis of clarifying the standard and the logical connotation of the data, Liaoning HE University refers to the external data platform to study and establish internal normal monitoring indicator system. Relying on the university's smart network and through the business data linkage of various departments such as educational administration management system, examination management system, student management system, and library management system, the university can obtain core education data and carry out internal monitoring regularly, timely feedback on problems and organize rectification, and ensure the continuous normal distribution of various data and steady improvement, then provide data reference for teaching, management and development decisions.

3. Key technical indicators

3.1 The interpretation accuracy of relevant evaluation data indicators

At present, there are many kinds of evaluation work in China, the indicator systems are different, and the calculation formula of the same data indicator is not the same. The accuracy of data indicator interpretation is crucial, which directly affects the eligibility and accuracy of data collection. Therefore, it is necessary for the professionals to carry out detailed reading, careful understanding and correct interpretation to guide relevant data collection and filling, then provide accurate reference for the university's construction work.

3.2 The integration degree of multi-platform data

Integrating the same and similar data fields of many platforms is helpful for optimizing the workflow of data collection and

filling, and reducing the workload of data collection personnel as well as avoiding data deviations caused by repeated collection and improving data accuracy. Therefore, multi-platform data integration should be improved as much as possible.

3.3 The integrity of the internal normal monitoring indicator system of educational big data

The purpose of constructing the internal normal monitoring indicator system of educational big data is to grasp and monitor the eligibility, standard, comprehensiveness and update status of the university's educational data without directly adjusting the data of the external platform, so as to find problems in time and formulate solutions. Therefore, the internal normal monitoring indicator system should be comprehensive and complete, including but not limited to the scope of external platform data, and take into account the functions of various business management systems and data linkage.

4. Conclusion

With large capacity, high accuracy and strong timeliness, big data in higher education is an important evaluation basis for carrying out educational evaluation, major authentication and normal monitoring of teaching and learning. The educational big data management and application path discussed in this paper is conducive to the university's data management and educational decision-making to a certain extent. In the future, Liaoning HE University will further explore the application scenarios and paths of educational data in the smart campus environment, design the model of internal educational big data monitoring and management system, and effectively improve the efficiency of data analysis and management.

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