Challenges and Opportunities Confronted by Educational Management Reform in the Age of Big Data

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ABSTRACT: With the development of Age of Big Data, difference, warning and prediction of the big data have played a big role in the educational management. Due to the characteristics of timeliness, distinction and perspectiveness of Big Data in educational management, it does not only create advantages for the educational management, but also brings opportunities for the innovation and reform of educational management. During the process of educational management, there are a lot of challenges. First of all, this paper analyzes the big data of educational management, specifies the development trend of educational management reform under the background of Big Data, further to analyze the challenges and opportunities confronted by educational management reform in the Age of Big Data. It is hoped to be helpful to the educational management reform under the background of Big Data.

1 INTRODUCTION

In the educational management, according to the usage of information in all respects, Big Data can be divided into Non-Data Age, Sample Data Age and Big Data Age. In the educational management, the big data has developed accompanied by the modern science and technology. By applying data related to educational management, educators assist in completing the function of educational management. It cannot only expand the field and depth of educational data, but also make the educational data more comprehensive, complete and systematic. By concentrating and integrating the educational data, it cannot merely offer more available resources for the educational management, but also create more opportunities for the development of educational management.

2 PART ONE BIG DATA OF EDUCATIONAL MANAGEMENT

Educational management involves many fields, thus there is a wide channel to obtain big data in educational management. Generally speaking, big data of educational management mainly originates from learning platform, educational management, systematic course management platform, etc. Of which, it also includes all behavior data of learners, educators and managers participating in educational activities. Other aspects involving educational management is also called as Educational Big Data. According to the type of data, data generated on the campus information service platform can be divided into four classes. The first is the big data of student management, mainly including attendance data, academic record and assignment of students participating in daily teaching activities, and also relevant performance data of students at school. The second is the big data of teacher management, mainly including attendance data, academic record and assignment of students participating in daily teaching activities, and also relevant performance data of students at school. The third is the big data of comprehensive management, mainly including attendance data, academic record and assignment of students participating in daily teaching activities, and also relevant performance data of students at school. The fourth is the big data of tripartite application and the typical cases are GPS, weather, map and security, teaching resources and online classes. The big data of educational management can be divided based on the format, Relational Database Structured Big Data and Non-structured Big Data. The latter mainly includes all kinds of educational management documents, educational management videos, GPS data and teaching resources.
3 PART TWO EDUCATIONAL MANAGEMENT REFORM TREND UNDER THE BACKGROUND OF BIG AGE

3.1 Timeliness of early-warning data
Under a certain standard, when abnormal mechanism happens to the educational management data, it will give a warning immediately, thus educational administrators can adopt corresponding measures to solve the emergencies in time. By setting a warning critical point, educators can judge whether the situation is acceptable. If it goes beyond the critical point, they should adopt corresponding countermeasures to reverse the unfavorable situation. These two management methods both conform to the principle of bottom-line management. In the educational management, teachers should not only emphasize on learning of students, but also attach more importance to the health of students, and also emphasize on the psychological and physical health of students. By constructing the smart campus, it is beneficial for better supervising the learning situation of students, which increases the rate of utilizing the educational management data. Under the background of Big Data, the smart campus can comprehensively analyze the data of students’ spirit, performance and attendance, diagnose potential safety hazards of students in a scientific way, which is convenient for teachers to adopt suitable means to solve problems of students and offer guarantee for learning and growth of students. As a matter of fact, smart campus is just like a warning mechanism. By playing the role of warning mechanism, it can achieve the goal of protecting security and growth of students.

3.2 Perspectiveness of predicted data
In view of poor judgment of warning critical point, the big data emphasizes on predicting and analyzing the development trends and possibilities of things scientifically. During the process, there may be neither reference point, nor poor situations at the same time. To carry out educational management and make analysis on education by big data, it can predict and analyze the students’ learning requirements and educational decisions of schools scientifically and effectively, thus educational management activities will be more prospective. Generally speaking, learning analysis in the educational management can use the model and data to predict students’ progress and performance in the future learning process, and also analyzes on those potential problems that may affect students’ learning in a scientific and reasonable way. To apply the computer and network system to analyze on the review, time to answer questions, right or wrong, participating in discussion of students, teachers can make comprehensive and objective evaluations on students based on the analyzed results, and also lead students to learn correctly and efficiently. By adopting advanced high-tech predicting and evaluating tool to assess the learning situations of students, students can correctly understand their own disadvantages and master effective learning methods, so as to improve the deficiencies of themselves. Besides, according to the click rate of students consulting relevant learning data online, teachers can judge the situation how students master all knowledge points and then deeply teach those knowledge points that need to be repeated again and again. Teachers can also lead students to apply efficient learning methods and better complete the learning objectives with the help of learning tools. By predicting the activities and learning laws of students, it can greatly increase the perspectiveness and accuracy of big data educational management.

3.3 Highlighted individual difference
Warming data and predicted data both belong to the macro-perspective aspect of big data. However, micro-perspective aspect of big data refers to record users’ behaviors and preferences, and then make analysis in a scientific way, further to improve the accuracy of data and educational management. By increasing the utilization of micro-perspective aspect of big data in the educational management, teachers can effectively teach students in accordance of their aptitudes cultivate diversified talents and carry out individual management over students. Big data of education can analyze the specialty and interest of students, further to predict the learning need and the best development orientation for every student, and then offer scientific guidance for the learning and development of students.

4 PART THREE OPPORTUNITIES OF EDUCATIONAL MANAGEMENT REFORM UNDER THE BACKGROUND OF BIG AGE
With the development of Age of Big Data, difference, warning and prediction of the big data have played a big role in the educational management. Due to the characteristics of timeliness, distinction and perspectiveness of Big Data in educational management, it does not only create advantages for the educational management, but also brings opportunities for the innovation and reform of educational management. Currently, computer science, smart campus management platform, network technology development, national education informationization construction policy, researches on educational science and deep development of educational software have offered opportunities for the development of educational management reform, and also promoted the rapid development of big data. Among numerous schools...
developing the educational career, they possess millions upon millions of students, teaching staff and educational management workers. It is hard to estimate the big data generated in the learning of students and teaching of teachers. Among the numerous educational management data, with the changes of educational mode, structured data and non-structured data of educational management have been consistently increasing. By consistently exploring and taking advantage of these educational data, educational management workers have escorted for the development of educational management. With the development and popularization of internet, cloud computing has been increasingly affected the educational management. Technological development and scientific researches have offered convenience for the practical operation and policies of educational management. Consequently, there are more and more relevant researches on educational management in the Age of Big Data.

5 PART FOUR CHALLENGES OF EDUCATIONAL MANAGEMENT REFORM UNDER THE BACKGROUND OF BIG AGE

5.1 Exploring educational value
To apply the big data to the educational management, it cannot only create opportunities for the development of educational management, but also brings huge challenges for the educational management. Big data of educational management has put forward newer and higher requirements for the talent cultivation mode and teaching method. Big data has played a significant role in culture, politics, science and technology and economy. Due to the popularization and development of big data, life, production and thoughts of human have been consistently reformed. By integrating, exchanging, analyzing and utilizing the big data, knowledge and wisdom of educational management field have been consistently increased, further to create new values for educational creation. By applying the big data to the educational management, it has put forward motivation for the reform of teaching method and management, thus the value of educational field had been manifested in the social reform.

5.2 Promoting educational reform
Under the background of big data, development of educational field should be more influential and persuasive. In the aspect of teaching evaluation, it should adopt more authoritative and scientific teaching evaluation system. In the aspect of cultivating students, it should adopt more effective and targeted cultivating mode. However, it is easy to cause the risks of individual privacy leakage, group privacy leakage, blind faith in data, etc. During the process of applying big data to carry out educational management, due to the asymmetric information acquisition and data of schools in different regions, it will aggravate the unfairness of education. Mixed requirements of education thoughts, communicating requirements of quantitative data, high requirements of information management have increased the difficulty of educational management. In order to walk out of the current educational dilemma and increase the educational efficiency and progress, educational administrators have been confronted by the challenge of big data. During the process of utilizing the big data, they should pay attention to draw on advantages and avoid disadvantages, subtly apply the big data to analyze the current educational situations, further to adopt scientific and effective measures to carry out educational management.

5.3 Cultivating innovative talents
While entering a new era, people are confronted by the problem of reform at first. Of course, there is no exception in the Age of Big Data. To realize the utilization of big data and implement educational management, it needs to reform the education at first. During the process of educational reform, traditional teaching method, theory and thoughts will be overturned. By combining the modern public education with traditional elite education, teachers teach students in accordance of their aptitude, further to realize the biggest development and consistently realize the sharing education. In the educational management, the big data has put forward new requirements for the teaching method, mechanism and concept, and also increased the standard of cultivating innovative talents. With the development and popularization of internet, open-sourcing software, multimedia and conceptual software, it has offered broader learning platform for students, expanded the space for students to explore, broadened the vision of students to the hilt and create beneficial environment for the comprehensive development and learning of students. The big data records the learning, communication and activities among students in details, and then analyzes relevant data and finally shared the data. It has broken the boundaries of educational space and time to the hilt. More educational theories and laws can be widely spread, which creates environment for cultivating diversified and flexible talents. The big data connects students’ learning with life closely. In the meanwhile of increasing the learning interests of students, the big data has also stimulated the motivation of running schools and offered guarantee for the development of educational business.
6 CONCLUSION

Only by fully implementing the educational management of big data, can educational management workers positively improve the conditions of running schools and increase the benefits to the hilt. On the premise of stabilizing the education, it can promote the development of educational career to the hilt. The Age of Big Data has offered a new development orientation for the educational management. In the meanwhile of increasing the scientific educational decisions, it has also offered challenges and opportunities for the development of educational career. Educational management workers have to correctly face the opportunities, adopt positive attitudes to face the challenges and adopt scientific and efficient way to solve the problems of educational management, so as to offer guarantees for the smooth reform of educational management in the Age of Big Data.

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