Research on Educational Administration Management of Colleges and Universities: Based on Big Data Perspective

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Abstract. The arrival of big data has brought great challenges to the educational administration of colleges and universities, but also unprecedented opportunities. Under the requirement of big data, the educational administration of colleges and universities needs to sort out and analyze a large amount of data information. The ability to analyze and sort out data is directly related to the level of educational administration. How to improve the level of educational administration management by improving the ability of data analysis has become particularly important. This paper explores the educational administration of colleges and universities in the era of big data, analyzes the impact of big data on the educational administration of colleges and universities, and illuminates how to improve the educational administration of colleges and universities in the era of big data.

Introduction

With the rapid development of information technology and Internet industry, the modernization of education has also rapidly developed into the era of big data. In the past, the traditional methods of educational administration in colleges and universities have been unable to meet the needs of the development and construction of colleges and universities. The educational administration of institutions of higher learning is in a key position in the administrative department of the university. To realize the standardization, science and order of educational administration is the basis to ensure the normal teaching order, and an effective means to ensure the teaching quality and work efficiency. In the ten-year development plan for educational informatization (2011-2020), the ministry of education has proposed to accelerate the informatization process of school management, promote the standardization of school management and the openness of school affairs, support the optimization of school service and management process, improve the efficiency and decision-making level of management, improve the efficiency of school running, and support the construction of modern school system.

Educational administration management under big data refers to analyzing, sorting and processing the data in the database of educational administration management platform, and discovering its inherent, hidden and meaningful content as the goal to effectively predict the trend and trend of educational administration management of colleges and universities in the future. Help analyze and judge the appearance of some phenomenon in the normal educational administration activities of colleges and universities, and help to set up reasonable curriculum arrangement and talent cultivation plan.

Current big data of educational administration of higher education mainly includes the teaching material, teacher information, course information, process information, the distribution of the classroom, teaching outline, the test information, course and grades students practice internship information, professional grade certificate information, rewards and punishments, class attendance information, etc., mainly through to the data statistics and sorting, filtering, and main points of the deeper behind the real-time data information has not been excavated. With the continuous
improvement of educational administration requirements of colleges and universities, it is necessary to directly sort out and process these data so as to obtain useful information for educational administration.

**The Usage of Big Data in Educational Administration Management of Higher Education**

Big data can carry out systematic management of all kinds of information of students. It is not necessary to use the traditional sampling survey in the data analysis of a certain type, but to rely on the big data of information technology for analysis, which saves the time of sampling survey and improves the work efficiency of educational administration management. In addition, the use of big data can also help the university educational administration work of the staff to student's study situation, student's learning effect, the students' interest in hobbies, such as master all kinds of data information, through the analysis of these data can work for the school teaching have a visually evaluation, effective to monitor the teaching quality of the school. Finally, the big data technology can also directly access any point of time data information, so that the teaching management work has more real-time, timely characteristics, more conducive to play the supervision and guidance function of the teaching management work, let the whole teaching management link become dynamic, controllable and more predictable.

**Calculating Student Attendance**

In the context of big data, the educational administration management of colleges and universities inevitably needs to rely on advanced equipment to help the educational administration work. At the beginning of the development of big data, for example, fingerprint examination machine introduction, through the recognition of fingerprint data can be realized that the whole school staff attendance, break through the traditional mode of check-in, it also makes attendance work is concise and to the school's staff attendance to conduct a comprehensive and systematic analysis, the summary, will ensure that all the teachers and students attendance at ordinary times, in the school staff attendance for digital management, improve the work of educational administration. In addition, when big data is improved to a certain extent, the monitoring of big data in the cloud of student attendance can make the educational management personnel clearly know the relevant influencing factors of student attendance. Based on this, empirical analysis can introduce better incentive measures to guarantee higher student attendance and improve the level of school running.

**Monitoring Students' Class Status**

It is a common phenomenon to install monitoring in the classroom, no matter in the classroom, library, study room, laboratory, playground, gym, supermarket, restaurant or in the campus. We can use big data means to organize video monitoring screen, and use artificial intelligence and other recognition technologies to automatically identify special phenomena that should be concerned and give early warning. In this way, we can know the situation in the campus at anytime and anywhere, master the status of students in class and the effect of teachers in class, which can effectively maintain the class order and improve the quality of teaching. Good classroom order is an important factor for effective learning. The application of modern technology to monitor students' classroom status can better understand students' performance, and it is extremely valuable reference material for students to study or work in the future. Application of big data automatic recognition technology can effectively supervise the classroom order and propose corresponding solutions, which is highly operable and instructive.

**Analyzing Students' Interests and Hobbies through Big Data**

When students apply for the school, they will fill in the voluntary form. Through the analysis of the students' voluntary forms, students' interests and hobbies can be understood, and reasonable major selection can be arranged and recommended for students. For those students who can't get into their first choice but are transferred, it is necessary to strengthen their understanding of this major, so that
they can understand and adapt to this major in the first time. In addition, big data analysis can also help students understand the relevant policies of this major, improve students' learning enthusiasm, improve teaching effect and help students complete their academic goals. At present, big data analysis database and technical means for college entrance examination application have appeared on netease and other platforms, as well as corresponding data application guidance providers. However, the cloud data sharing among platforms is not enough, and the interoperability between platforms is very poor. The real big data system for college entrance examination application still needs to be improved.

**Studying through Big Data**

In universities, students need to learn all kinds of elective courses and participate in all kinds of activities to get credits for their studies. If the credit is not enough, you will not be able to graduate smoothly. In colleges and universities, there are a large number of students and a large number of professional courses. In addition, more and more schools choose the open mode of running school, that is, to increase the proportion of students' elective courses, so that they can learn independently and actively, so as to enhance students' learning interest and ensure the school's effect. In this case, it is necessary to rely on big data science and technology to scientifically manage students' credits. It is necessary to teach students to sort out and analyze various data related to majors and courses through computer technology, so as to determine the most appropriate and personalized elective program. At the same time, educational administrators can also manage students' credit status through big data, which greatly improves the work efficiency and results.

**Evaluation Teachers through Big Data**

The harmonious relationship between teachers and students is related to the quality of teaching results. Students' evaluation of teachers' courses through the network is a feedback to the teaching quality of schools and teachers' teaching level, which can help teachers improve their teaching ideas and teaching methods, and improve the classroom effect and teaching quality. Students after the completion of the colleges and universities is the social employment, schools can use big data on the current employment situation to carry on the comprehensive and systematic analysis, help students to understand the professional obtain employment direction and demand situation of companies, and according to the employment situation to undertake to the student ability and accomplishment, knowledge, continuously improve the way to school personnel training, the method, enables the student to fit for the request of the ages.

**Innovation of Big Data in Student Service Management**

Nowadays, with the development of cultural diversity, there are more and more differences among students. In the era of big data, the management of college students is quite different from before. Through big data, students' behaviors can be deeply analyzed, and special service guidance can be provided according to their personality characteristics to promote their personalized development. It is conducive to better management and service of students to conduct in-depth mining and analysis of students' daily behaviors through big data, and then draw conclusions from these results.

**Academic Warning Improvement**

Warning of students' study is an important measure for colleges and universities to manage students. It refers to the students in the school life, situations and problems appeared in the learning process can be immediately informed and timely made known to the students themselves and their parents and help students to seek the solution in time, prevent produce bad consequences, because slow notification form teachers, parents, students and harmonious relationship between the school, to help students complete their studies smoothly. The traditional academic warning mainly refers to the early warning of students' academic performance. The teaching staff of the school will summarize students' semester results and credits they have learned, and inform students and parents of those students who
fail to pass the courses and have insufficient credits through various ways, so as to warn them in advance. However, under the big data, the way of academic warning is different from the traditional one, which is more efficient and intelligent. At present, many foreign schools use dedicated online learning warning system, such as Purdue University in the United States developed the curriculum warning system, and Wollongong University in Australia developed the social network visualization tool. At home, some schools also carried on the thorough studies warning system development, such as University of electronic science and technology education institute of big data applications developed the forecasting warning system can pass the exam, the students of various conditions such as course credits is sufficient for warning report, and automatically sent to the school teaching related responsible staff, students and parents of students, greatly improve the working efficiency.

**Fair Assessment of Scholarships and Grants**

At present, the state has various forms of student financial aid policies in institutions of higher learning, such as national scholarship, national financial aid, national encouragement scholarship, national student loan, tuition compensation, student loan compensation, new student enrollment subsidy program, work-study aid, tuition fee exemption and so on. How to evaluate these scholarships and grants fairly and fairly is particularly important. The school management department needs to deeply understand the family income status and family members of the students according to the family poverty certificate issued by the students and the personal files of the students. In the context of big data, schools can adopt a more scientific, efficient and intelligent approach to evaluation. School is responsible for the department can again on the basis of the original method according to student's access to the Internet, in the school consumption, class attendance, student learning achievement data is analyzed, such as grants and choose the really good to be able to get a scholarship student, to be fair and impartial big data scholarship evaluation.

**Safe and Efficient Automatic Management of Student Dormitories**

The safety of students is very important in the educational administration of colleges and universities. In order to ensure that the student's personal and property safety, strengthen the information management of student apartment safety, strengthen the daily management of student dormitory, with the continuous development of science and technology level, in recent years, many colleges and universities in the student apartment installed entrance guard system, only through the id card recognition or fingerprint identification to enter, and real-time monitoring to student's daily travel. In this way, the apartment management personnel can have a comprehensive understanding of the access of students, timely grasp the situation of students leaving early, returning late and leaving school, and effectively prevent other outsiders from entering. Through the data analysis of the access control identification system, the school can make a reasonable prediction and analysis of whether students are in school to ensure the safety of students.

**Summary**

In the form of big data, the educational administration of colleges and universities needs to adopt scientific and standardized concepts and methods for management in addition to regular work construction, so as to establish a modern educational administration mode of colleges and universities. The application of big data makes the educational administration management of colleges and universities more convenient and fast. By analyzing and sorting out all kinds of data, the current situation of colleges and universities can be timely understood, and some deficiencies can be timely improved and improved. For example, the teaching evaluation of the school is more reasonable. The evaluation of students is more comprehensive, the evaluation of student scholarships and grants is more fair, the management of student apartments is more secure, making the school's educational management more perfect and reasonable, and improving the quality and level of teaching.
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