Adult and Higher Education (2024)
Clausius Scientific Press, Canada

DOI: 10.23977/aduhe.2024.060601
ISSN 2523-5826 Vol. 6 Num. 6

The Influence of Big Data on Higher Education Management and the Optimization Management Analysis

Jia Nan

Krirk University, Khet Bang Khen District, Bangkok, 10220, Thailand

Keywords: Big Data; Higher Education Management; Influence; Optimization Management

Abstract: Education management is an extremely important work content in the daily work of colleges and universities, which represents the comprehensive strength of colleges and universities. And with the development of information technology, the advent of the era of big data not only changed people's way of production and life, also also provides effective power for college education management, constantly promote the higher education mode and management method innovation, but also help universities to establish a more perfect talents training system, therefore, colleges and universities should face the impact of the arrival of the era of big data on higher education management, with big data optimization education management, maintain the development of colleges and universities. This paper discusses the influence of big data on the management of higher education, and puts forward some views on the optimization of the management path for its reference.

1. Introduction

As an important influencing factor in the companion organisms, global economy, culture and production activities in the Internet era, the concept of "big data" has attracted attention from all walks of life since it was put forward in 2013, and has become a new production element in addition to physical data. In academia, big data is increasingly recognized by education experts as a crucial symbol of technological innovation in the economic era[1]. Furthermore, it significantly impacts educational reform, particularly in university education. It can be said that big data has profoundly influenced the content and mode of university teaching management. Additionally, enhancing the quality of higher education management through the utilization of big data has emerged as an urgent and vital research topic for university leaders, one that is intricately linked to the future development of colleges and universities.

1.1 Brief description of the meaning and characteristics of big data

The big data mentioned in the article is not the science and technology understood by ordinary people, it is more like a description of special social phenomena, and is a way of expression of social informatization in the information age. Specifically, "big data" refers to the use of diversified comprehensive way from different public channels to collect detailed data and summary, compared with a single channel to obtain data, the data coverage areas more widely, more rich content, this

not only can better meet the Internet age of data accuracy, authenticity, liquidity, timeliness, but also for social progress and development decisions to provide effective reference. Therefore, we shows that introducing big data into the field of education and integrating it with higher education management can not only provide new ideas for the development of higher education, but also provide detailed reference data for the formulation of specific decision-making and deployment.

2. Feature

First of all, it has been clearly pointed out above that big data represents a social phenomenon, and even if it is not a specific technology or technology product, it still reflects a specific development trend- -social informatization. The advantages of wide coverage and more information groups make it play a great role in the change of specific things. Therefore, it can be seen that the integration of big data in the management of higher education can not only facilitate the optimization and integration of teaching resources, but also break the situation that traditional education is limited by time and space, and cultivate more cross-professional and cross-regional high-quality talents[2] .

Secondly, the big data has a strong information connection, and the convenient information interaction channels enable the information audience to timely communicate and exchange on the information content.We must ensure the integrity of the information analysis, so as to maximize the value created by using the information in the future.

2.1 The impact of big data on higher education management

2.1.1 Big data can affect higher education platforms

With the development of science and technology, since the concept of "big data" was put forward, the traditional higher education mode and educational information integration have undergone tremendous changes compared with the past.

First of all, it is the influence of time and space. As we all know, traditional educational activities have high requirements on teaching time and educational space. On the premise that they cannot meet these two basic conditions of education, the audience of higher education is narrow and the audience viscosity is low.

Secondly, the limitation of materials. In the era of big data, the sources of teaching materials used by higher education platforms have been broadened and the content has become more abundant, which attracts more students to a certain extent and improves the educational effect of the new platform.

To sum up, big data can have a very important practical impact on the higher education management platform, which is like creating a new education platform, making the new higher education management break through the traditional limitations of education management, and then ensuring the realization of cross-regional talent training goals. Besides, in the era of big data, rich interactive means can strengthen the connection and communication between different universities. This can unify the teaching resources owned by different colleges and universities. By accomplishing this, and combining it with the needs of the times, we can list the contents that can meet the requirements of talent training in the new era. Then, we can build a new education and teaching resource material library, which can reduce the probability of problems such as uneven distribution and large gaps in educational resources. Additionally, it can supplement the imperfect education work in some colleges and universities. This will enable students to choose their own learning content at any time and anywhere through the internet. In higher education, this approach will not only reduce the dependence of higher education management on time and space, but also

contribute to improving the efficiency and effectiveness of higher education.

2.1.2 Big data can affect the time of education management and decision-making

Big data under the background, and education management related data collection, sorting work becomes more simple, and it also represents the higher education management education management thinking, management mode innovation, makes the education behavior can be divided into different dimensions, and different university education managers can also share all kinds of education behavior data through the Internet. For this reason, the university education administrators can strengthen the contact between each other and understand the problems or abnormal conditions in the content and way of higher education management through comparison, so as to formulate perfect solutions to ensure the scientific and rationality of higher education management. In addition, the integration of the two enables educators and students to stand in a more rational height when looking at teaching practice, and analyze them with a more intelligent vision, so as to realize the synchronous development of knowledge, thinking and ability. In addition to this, the arrival of the era of big data has given rise to the online and offline management of the higher education management mode at the same time, makes the work of education management staff in the Shared teaching task on the basis of, absorb the successful experience of others in education management, to promote the improvement of higher education management efficiency.

3. In the era of big data, the optimization strategy of higher education management

3.1 Strengthen the data literacy of teachers and managers

Since 2013, the first proposed the concept of "big data", it has experienced 10 years of development, so big data analysis and university education management is not strange to teachers and managers, but in fact, there are still some college teachers or education management personnel not establish clear cognition of the concept of big data, and want to rely on big data on the influence of higher education management work improve college education quality, will try to improve college teachers and education manager data literacy. To ensure that as the initiator of educational activities and the executor of practical teaching activities, it can promote the realization of the development strategy of intensive, industrialized and practical education according to the content and changes of big data, so as to promote the improvement of teaching quality. As far as the specific content of "data literacy" is concerned, it includes a regional complete cognitive structure, including evaluation, statistics, information and course knowledge, etc. Therefore, university teachers and education administrators must have good "cross-boundary" ability[3] .

For example, as a university teacher or education administrator, he should be familiar with Excel, Apple system numbers, spread-sheets of google, fusion, typepad, css, javascript and other data generation software, and be able to skillfully operate these software to complete daily work. In addition, it also needs to establish a close relationship with students, understand students' daily behavior, ideological changes, and carefully analyze and study the problems encountered in the learning process together with students, and use the obtained data to interpret them deeply. And these are currently college teachers or education managers do not have, so the school should actively organize various related training activities, such as lectures, training or online learning, attract more college education administrators or teachers to participate in, in order to enhance their professional level or business ability, to ensure that its better to finish the job in the future.

3.1.1 Improve and upgrade the existing data platform of universities

In terms of big data on the influence of higher education management, rich data resources to

provide better service for higher education management, so schools should try to broaden the data access channels, improve the working mechanism of data sorting, analysis, in order to realize the diversification of university teaching management mode, but all this to colleges and universities to establish a sound data platform as the premise. Strong universities can introduce IBM intelligent cloud education system or BLACKBORD data analysis system by increasing investment in capital and technology research, combined with the actual situation of the university, and use mature systems to analyze teaching personnel, educational administrators, students and teaching content. And weak institutions of higher learning can cooperate with larger data base to build the school itself data platform, optimize platform management mechanism, discover and processing data accord with the actual situation of the school, and according to the project content, function, according to the different requirements for the corresponding regulations and process. On this basis, we should strengthen the contact and communication with other colleges and universities to seek common development.

In addition, it can also introduce advanced information processing mode to promote the upgrading of their own management mode, and help teachers and managers to build a new teaching space.

3.1.2 Familiar with data learning, analysis and data mining technology

In terms of the above content, in the context of the era of big data, schools should not only establish a sound data platform, but also strengthen the understanding and mastery of university teachers and education administrators on data method and data learning and analysis. We should clarify the differences in its focus and functions.

As the name suggests, data excavation has a single orientation, while data learning and analysis technology includes two functions: reflection and prediction. Such as: brightbytes is a kind of typical learning analysis, it not only can affect the students personal performance analysis and evaluation, also can through the fusion of students' daily performance and feedback to find data change, to help college teachers and education managers to develop more perfect teaching methods, therefore, data excavation and data learning analysis is big data era university teachers and education managers must master two technology.

3.2 Implementation of personalized education

In the current era of big data, one of the optimization strategies of higher education management is the implementation of personalized education. With the progress of science and technology, higher education institutions are faced with huge amounts of student data, which not only comes from academic performance, but also includes students' learning style, interests, learning habits, etc. This provides valuable resources for colleges and universities to have a more accurate insight into the needs and characteristics of each student. Through in-depth analysis of these student data, higher education institutions can generate personalized learning paths and teaching strategies for each student. These personalized programs can recommend suitable courses and learning resources for students, based on their learning characteristics and interests. For example, for natural science keen students, more relevant courses and laboratory activities can be recommended to satisfy their intellectual curiosity. For students who prefer the art and humanities fields, relevant art works and cultural lectures can be provided. Such a personalized teaching method can better meet the learning needs of different students, make it easier for them to understand the course content, and improve the learning efficiency.

3.3 Data-driven decision-making

In the era of big data, data-driven decision-making has become an important strategy for higher education management. The ability to gain insights from it and make informed decisions becomes critical in the face of large and diverse data. By analyzing real-time data, higher education administrators can more accurately understand students 'academic performance, teachers' teaching effects, and the utilization of educational resources, so as to more specifically evaluate the effect of educational activities. Data-driven decision-making can bring many benefits. First, through the analysis of students 'academic performance data, higher education administrators can quickly identify students' learning problems and challenges and provide timely help and support, thus promoting students' academic progress. Secondly, the data analysis of teachers' teaching effects can understand the effectiveness of different teaching methods, provide teachers with suggestions to improve the teaching strategies, and improve the teaching quality. In addition, data-driven decision-making can also optimize resource allocation. By analyzing the utilization of educational resources, higher education institutions can identify the places where resources are wasted or insufficient, so as to reasonably allocate teaching equipment, personnel and funds and improve the efficiency of resource utilization. This helps to reduce costs and improve the economic benefits of education. More importantly, data-driven decision-making can improve overall performance. Through comprehensive analysis of data across multiple aspects, higher education administrators can develop more comprehensive development strategies with define goals and priorities. This helps to drive higher education institutions towards a more far-visionary direction and continuously improve their overall performance and competitiveness.

3.4 Promotion of interdisciplinary cooperation

Interdisciplinary collaboration can bring multifaceted benefits to higher education management. Experts in different fields can lead to diverse perspectives and innovative ways of thinking. Education experts understand the educational process and student needs, data scientists can analyze data trends and patterns, and information technology experts can master data processing and technology applications. Their collaboration could enable data to provide better support for educational decision-making and practice, thereby improving teaching quality and student satisfaction. Interdisciplinary collaboration allows a better understanding of what data means. Data analysis is not only the presentation of figures and charts, but also requires deep domain knowledge to explain the story behind the data. Through transdisciplinary collaboration, the data can be combined with actual educational scenarios to more precisely understand what the data reflects and thus make more informed decisions. Interdisciplinary collaboration also helps to promote innovation and discover new educational approaches. Experts from different fields can come together to explore the challenges and opportunities in the field of education and propose new solutions. For example, education experts can propose teaching needs, data scientists can provide data support, and information technology experts can develop innovative teaching tools to create more effective teaching methods. In order to achieve interdisciplinary cooperation, higher education institutions need to establish interdisciplinary teams and cooperation mechanisms. This includes recruiting talents across fields, organizing regular interdisciplinary seminars and collaborative projects, and promoting exchanges and cooperation between different fields. At the same time, it is also necessary to break down disciplinary barriers and encourage experts from different fields to participate in the decision-making and implementation process of educational management.

4. Conclusion

To sum up, the current higher education is gradually entering the data technology era from the initial information technology era. In this DT era full of changes and opportunities, college teachers and education administrators play a key role, and it is necessary to continuously deepen the reform and innovation of education management to adapt to the needs of different times. The advent of the era of big data has brought great opportunities for higher education and injected new vitality and dividends into education management. As an education manager, deeply understanding and skillfully applying the impact of big data on higher education is a key step to improve the management level. By making full use of the detailed information provided by big data, education administrators can more accurately understand the needs, interests and performance of students, so as to develop more targeted teaching strategies and management programs. This can not only help to improve the quality of teaching, but also to cultivate students' independent learning ability and innovation ability, so that they can better adapt to the needs of the society.

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