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Retraction

Retracted: Innovation and Development of University Education Management Informationization in the Environment of Wireless Communication and Big Data

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This article has been retracted by Hindawi, as publisher, following an investigation undertaken by the publisher [1]. This investigation has uncovered evidence of systematic manipulation of the publication and peer-review process. We cannot, therefore, vouch for the reliability or integrity of this article.

Please note that this notice is intended solely to alert readers that the peer-review process of this article has been compromised.

Wiley and Hindawi regret that the usual quality checks did not identify these issues before publication and have since put additional measures in place to safeguard research integrity.

We wish to credit our Research Integrity and Research Publishing teams and anonymous and named external researchers and research integrity experts for contributing to this investigation.

The corresponding author, as the representative of all authors, has been given the opportunity to register their agreement or disagreement to this retraction. We have kept a record of any response received.

References

[1] W. Li, "Innovation and Development of University Education Management Informationization in the Environment of Wireless Communication and Big Data," *Wireless Communications and Mobile Computing*, vol. 2021, Article ID 8493464, 6 pages, 2021.

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Research Article

Innovation and Development of University Education Management Informationization in the Environment of Wireless Communication and Big Data

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The development of information technology has spawned a new type of demand and management analysis model of big data. The value of data is vividly reflected in the contemporary era, and all walks of life have devoted great energy to the construction and use of informatization. The object of college education and management is the group of college students who are most closely connected with contemporary trends. Their thoughts are active, their state is changeable, and they are very sensitive to external stimuli. Such an educational situation has greatly increased the difficulty of educational management in colleges and universities. This article takes the big data research as the breakthrough point, focuses on the promotion and innovation of contemporary college education management informatization, and strives to improve the college education management informatization system by solving existing problems. The innovation of this research is to use big data technology as the starting point for improving the current stage of the education informatization work of colleges and universities, through the combination of data analysis and the latter, to realize the comprehensive informatization innovation of education management. The study used questionnaire surveys to investigate and interview some students and related managers in 5 universities in the province and conducted an objective assessment of the construction of educational management informatization in these universities and found that these five universities have common problems in this field. Research experiments have found that among the five representative universities in the province, the service awareness of education administrators is not above the fifth level. This shows that in the big data environment, the quality of education administrators cannot be ignored.

1. Introduction

The advent of the era of big data has profoundly affected everyone's work and life. Almost all people's behaviors can be captured by information terminals and converted into visual numbers, and then, these numbers can provide a reference for the personalized development of social services. Although it is sometimes used by illegal businesses to cause trouble to the public, its positive effect is undoubtedly dominated by the mainstream, which has been universally recognized by the public [1, 2]. It can be said that various industries and fields are actively exploring the mode of combining big data with their own work to meet the needs of the development of the times. In the context of the era of big data, how to use big data to explore objective laws to strictly understand and master university education management and university education management innovation is undoubtedly a major topic of current and future research, and scholars in the field of education management must make theoretical and practical responses to big problems [3, 4]. This article takes the big data environment as the background and takes the innovation and informatization development of university education management as the main research goal. It is a natural, contemporary, and creative effort to this.

The research on this major subject in the educational management field includes the following: Zeng used empirical research to track and analyze the teaching practice of the space design subject in a higher vocational college in a certain place, so as to find out how information technology should be better integrated into methods in vocational

education. It turns out that the reasonable application of information technology has a very positive impact on the teaching effect and management effect of the subject [5]. Popkova believes that the modern stage of the development of the education field is characterized by the large-scale implementation of information and telecommunications technology into the activities of all members of the education process. Informatization is one of the main factors to improve the level of education, and the awareness and methods of training have been improved. The role of the teacher has changed—the teacher has changed from the translation of knowledge to the organizer of student activities in order to acquire new knowledge and skills [6]. These studies provide theoretical guidance for the creation of this article.

This article combs the latest research trends in this field domestically and internationally and finds that most experts and scholars have affirmed the positive effects of informatization construction on education management and put forward constructive predictions on the development direction of this field from many aspects [7]. At the same time, many cases also show us the shortcomings in the current stage of education management information construction, such as poor software compatibility, incomplete functions, and inability to guarantee stability, which have largely hindered the use of the advantages of the information system. In response to this phenomenon, this article puts forward targeted development ideas for the common problems embodied in the five vocational colleges [8]. It is hoped that it can effectively promote the development of information construction and make it better meet the requirements of scientific and technological progress for educational modernization.

2. Research on the Innovation and Development of University Education Management Informationization in the Big Data Environment

2.1. The Basic Connotation of Wireless Communication and Big Data. Although the term big data has been repeatedly mentioned in recent years, it has not actually been clearly defined. Many scholars have defined it from various angles according to their own research focus. In general, the more widely used definition starts from the functionality of big data. It is to classify and process the data information collected through various means, so as to extract information that is beneficial to itself. Big data is different from ordinary data. The most obvious difference is its scale and high speed; that is, it can be called big data if it meets certain requirements in terms of scale and collection time [9]. The focus of big data is to use technology and scientific knowledge as well as high-tech technology to find more valuable information about data objects [10]. It can be said that information collection is equivalent to the stage of primitive accumulation, and data analysis and application are the efficient value-added stage. In other words, collecting data is not the focus, but the development and utilization of data is the key. With the help of big data collection and analysis to better promote the construction of the educational management information system of colleges and universities, not only can it better utilize the advantages of information equipment but also it can help to improve the overall level of college education management [11, 12].

2.2. The Innovation and Development of the Education Management Informationization of Universities in the Era of Big Data

2.2.1. Innovation of Ideas and Thinking. The era of big data is completely changing the status quo of the traditional education model, which cannot completely and truly count the effects of national education. Relying on powerful analysis capabilities, terminal equipment can quickly and accurately sort out the personalized needs of customers and adjust their management strategies in time according to this demand. What is more valuable is that the data obtained through big data analysis greatly avoids the influence of the analyst's subjective emotions on the results and fundamentally changes all the views and thinking on education management.

2.2.2. Innovation of the Education Model. In the past, college education was promoted by teachers to students, and the content and form of teaching were completely determined by the Academic Affairs Office and teachers. But in the era of big data, schools can formulate teaching priorities and teaching methods based on data analysis. At the same time, big data can also capture and analyze the content of online classrooms watched by students and reversely affect teachers' thinking and improvement of teaching. Such a more open and interactive teaching-learning cycle has been used for dozens of times. It is undoubtedly a major innovation for the university education model.

2.2.3. Innovation of the Evaluation Model. With the advent of the era of big data, the evaluation of its education is limited not only to subjective assumptions and personal experience but also to objective evaluation supported by data. Through the click statistics or activity survey of each tutor course, statistical data are provided for students on each learning platform and support is provided for all educational evaluations.

2.2.4. The Development of Informatization of College Education Management in the Era of Big Data. In the era of big data, people gradually realize that the world is composed of information rather than a series of natural or social events. In the process of digitizing the world, information has completed many very difficult tasks. Under such changes, the informatization of education management in colleges and universities must inevitably conform to the requirements of the times and establish a data-based thinking tradition and work model as soon as possible. Every day, the university itself and every teacher, student, and administrator in the university are generating this large amount of new data. In the education management work, these data are getting more and more attention, and they are beginning to be mined and used.

2.3. The Specific Situation of the Application of Big Data Technology to the Education Management of Universities

2.3.1. Service Object. Establish an information platform that connects students and teachers extensively, and interconnect the collected information. The information is classified and captured in a scientific manner to provide teachers and students with all-round personalized services.

2.3.2. Campus Environment. Accelerate the construction of school wireless networks and the Internet of Things, eliminate information blind spots, and strive to be able to grasp first-hand information changes inside and outside the campus at any time.

2.3.3. Data Warehouse. Only when the data reaches a certain volume can it be called big data. This requires a sufficient space for data storage and classification, which requires a data warehouse.

2.3.4. Cloud Computing. Cloud computing has greatly accelerated the speed of computing, enabling customers to meet their computing needs as quickly as possible and ensuring data security.

2.4. University Education Management Relies on the Development of Big Data

2.4.1. Improve the Education Management System. In addition to integrating the three major functions in the field of university student management, it can also effectively upgrade the student management system. However, in order to improve the quality of teaching and based on the reality of each school, a new system should be established: first, to make teaching institutionalized; second, to institutionalize and standardize the guidance; third, to pay attention to the management of examination procedures and to institutionalize; fourth, to promote employment and to establish the service system; fifth, to find specialized personnel to reasonably supervise; sixth, to innovate the teaching engineering system; seven, to evaluate the standard vocational education; and eight, the result transmission of the teaching results.

2.4.2. The Campus Network Must Play an Important Role in Promoting Education Management. The environment is the foundation, and the construction of the education management environment is the construction of the campus network platform. Today's teaching is inseparable from this information platform. Therefore, special attention should be paid to the role of the campus network. The construction of the campus network is not a simple signal coverage, but various information resources are interconnected under the premise of ensuring safety. This means that the university must not only increase investment in supporting software and hardware but also pay enough attention to talent training.

2.4.3. Sufficient Investment in Teaching. The performance of the infrastructure has a direct impact on the construction of the campus network. Without sufficient funds as a guarantee, it is difficult for universities to establish an information management system. Nowadays, there are some ways to improve teaching: first, not only rely on government investment but also establish various investment systems, start with different entities, and find different methods; second, optimize the proportion of capital allocation, increase the efficiency of capital use, and reduce necessary loss; third, first aid relieves teachers' anxiety, is committed to teaching, and fills up the gap in the number of teachers engaged in the frontline; fourth, strengthen the essence of education and reduce the pursuit of utilitarianism.

2.4.4. Classification Management of "Interest Clusters." "Interest clusters" are used to manage users with different main hobbies and habits. Although there are big differences between customers, through the collection and analysis of big data, we can find out when they are generally interested in a certain topic or field, so that these customers can be classified into specific groups. It is in a common interest cluster, that is, "interest cluster." Under the guidance of this concept, the study conducted a modeling analysis on the interests and hobbies of the student group, and the main formula is

$$f\left(i_{p_1}\right)\left|U\theta_{\rho_1}=M\times f\left(i_{p_1}\right)\right|U\theta_{\rho_1}+(1-M)\times f\left(i_{p_1}\right)\left|U\theta_{\rho_1}.\right. \tag{1}$$

2.5. Improvement of the Incentive Mechanism Based on a Big Data Platform.

Regardless of the economic system, the scientific incentive mechanism plays an important role in the work enthusiasm of the workers. Similarly, in the information age, if universities want to make big data platforms play their intended role, they must also pay attention to the construction and improvement of incentive mechanisms. Colleges and universities should adopt a combination of material incentives and spiritual incentives based on their actual abilities and the needs of their workers to lay the foundation for the application of big data platforms.

Build a contribution value management system. The aspects of student management are very complicated, and this research regards these studies as nodes. Through analysis, find out the ranking of the contribution value of each node in the student management, and use it as one of the main bases for the distribution of performance. Such a distribution system can greatly stimulate the enthusiasm of various nodes, that is, the management departments of universities. In the propagation node link graph, we set Pi as the PageRank value of propagation node i, Li is the number of propagation nodes pointed to by propagation node i, N is the total number of nodes, and q is the constant damping coefficient. The following calculation model is used as the main basis for determining the contribution value, so as to scientifically determine the precise value of each node.

(1) Initialize all propagation nodes

(2) For all propagation nodes, perform the calculation of

Table 1: Investigation and analysis on the literacy of educational managers in 5 universities in this province.

	I	II	III	IV	V
Service awareness	4.19	3.71	5.18	3.52	3.17
Professional knowledge	5.41	3.58	3.92	4.32	3.38
Information technology	3.46	4.99	2.61	2.83	4.49
Management ability	5.73	5.42	4.85	5.67	5.38

$$Q_i = \frac{1+\mu}{N+\mu} \times \sum_{j=1}^{n} \frac{Q_j}{M_j}, \quad i = 1, 2, 3\cdots; j = 1, 2, 3\cdots, n. \tag{2}$$

(3) Take the experience value in this experiment $q = 0.837$

(4) Take the threshold x and iterate the second step until formula (3) holds for all nodes:

$$|\Delta Q_i| < \theta. \tag{3}$$

Among them, ΔQ_i is the difference between the Q_i value of the i-node last iteration and this time. After the iteration is completed, use the min-max normalization method to normalize the PageRank value of the page to obtain the final authority value.

3. Experimental Research on the Innovation and Development of University Education Management Information under the Big Data Environment

3.1. Subjects. In order to have a more comprehensive grasp of the current status of the information construction of education management in colleges and universities, this study selected 5 colleges and universities in the province to investigate and found out the common problems based on the big data analysis model. At last, this study proposed suggestions for improvement and innovation of management combined with the actual situation of the colleges and universities.

3.2. Experimental Method

(1) Field visit

Five selected colleges and universities were visited, and the teachers and students regarding the school's views on the informatization of education management in the school were interviewed.

(2) Questionnaire survey

Questionnaires were sent through the official websites of the 5 universities, and each school issued 341 questionnaires, of which the valid questionnaires returned by each school were 331, 340, 336, 337, and 330, respectively.

(3) Observation and comparison method

Observe and compare the survey results of these 5 schools, study the common problems of education management informatization in the university in the current state, and explore the informatization of education management in the big data environment that adapts to the common university.

4. Experimental Research and Analysis on the Innovation and Development of University Education Management Informatization under the Big Data Environment

4.1. Quality Analysis of Education Management Personnel. Compared with junior and senior high schools, higher education administrators have higher quality requirements, and their mastery of high and new technology must also meet the needs of the era of education informatization. This forces them to maintain a state of learning improvement; otherwise, it will be difficult to meet the ability level of matching college students, and education management is naturally quite inefficient. Table 1 is a survey and analysis table of the literacy of education administrators in 5 representative colleges and universities in the province. The level of mastery is represented by 10 numbers from 1 to 10. The higher the number, the higher the degree. The colleges are numbered in Roman alphabets (serial number).

It can be seen from Figure 1 that among the five representative colleges and universities in the province, education administrators generally have the problem of low quality. Among them, the management ability is relatively high, and the degree level is basically above 5, but there is no problem in terms of service awareness. The situation above level 5 shows that in the big data environment, the quality training of education managers cannot be ignored.

4.2. Statistical Analysis of the Subject Keywords of College Forums. At the level of interest cluster investigation and induction, the focus of this research is mainly on the campus forums of these five universities. First, collect all the data of these five college campus forums in the past six months, and comprehensively sort them according to the activity of students in the forum and the popularity of forum topics. Use this as a basis to make a portrait of each student group. It is found that in the college student forums, users' posts and replies show a certain interest bias. In order to verify the existence of this phenomenon in the whole, this paper conducts data mining on the topic keywords of forums of 5 colleges

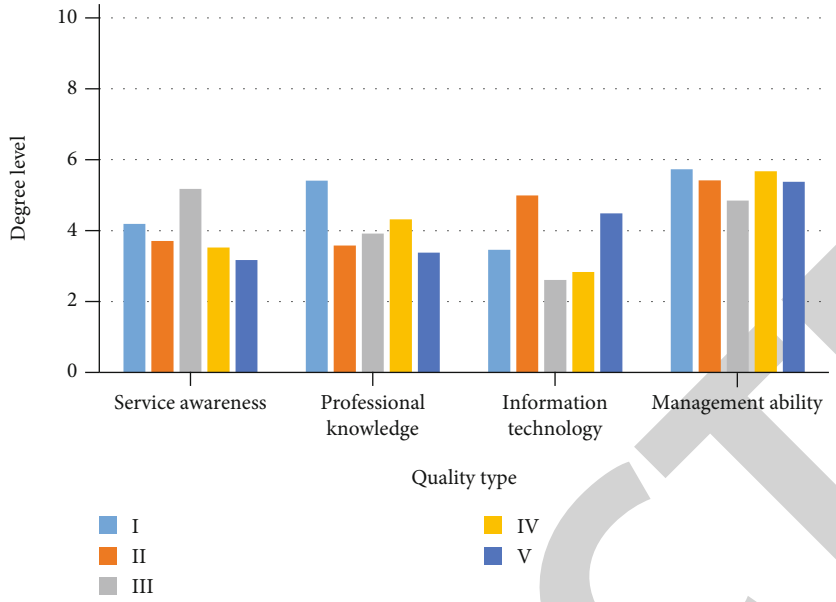

Figure 1: Investigation and analysis on the literacy of educational managers in 5 universities in this province.

Table 2: Thematic keyword statistics.

	I	II	III	IV	V
Work	1246973	452401	735925	796131	951296
Learning	1102906	590289	546127	1308503	1185598
Entertainment	441799	315653	1036002	845108	940221
Political	797891	1345623	793237	1247522	767028
Life	785725	1168416	1216118	658607	1094892

Figure 2: Thematic keyword statistics.

and universities. The statistics are shown in Table 2, among which the colleges are numbered in Roman alphabets.

As shown in Figure 2, the students of the first college pay more attention to the work and study, and the frequency of occurrence has reached 1.2 million. The topics of interest to students in several other colleges and universities also reflect a certain degree of concentration and clustering. This means that students from the same university can form a stronger approach in terms of interest.

5. Conclusions

The advent of the era of big data has profoundly affected everyone's work and life. Almost all people's behaviors can be captured by information terminals and converted into visual numbers, and then, these numbers can provide a reference for the personalized development of social services. In modern times, the role of information construction in the education management system of our country's colleges and universities is becoming more and more significant. This is the trend of the times. Computer information systems have been used systematically, most of which reflect the role of tools, which play an important role in the use of information and decision support. In the era of information management, under the influence of advanced information, higher requirements are put forward on human abilities, and higher comprehensive quality requirements have also led to changes in the personnel structure. Therefore, there is an urgent need to achieve innovation to meet the requirements of the information age and to take education management to a higher level.

Data Availability

Data sharing is not applicable to this article as no datasets were generated or analysed during the current study.

Conflicts of Interest

The author declares that he has no conflicts of interest.

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