Research Article

Data Collection and Visualization Application of VMware Workstation Virtualization Technology in College Teaching Management

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In this study of data collection and visualization application of VMware Workstation virtualization technology in university teaching management, data processing is performed by the SQLServer database processor using VMware Workstation virtualization technology, and finally the radial-based teaching comprehensive evaluation neural network index is used to calculate the quality of teaching management to China's teaching team is gradually balanced and the comprehensive quality of teaching team is improving; the academic atmosphere is more open; the fields and perspectives of academic research are richer; the distribution of teaching at all levels in China is more balanced, the comprehensive quality of teaching in China is improving, the system of education and scientific research in China's colleges and universities is improving, and the ecological management system of colleges and universities is improving, and so on. It is also proposed to improve the academic level and establish a strict institutional threshold for the teaching industry in colleges and universities; to effectively implement the policy of freedom and equality in academic and scholarly circles, and improve the system of teaching, principal appointment, and evaluation in higher education institutions; to insist on implementing the principle of academic fairness and optimizing the teaching evaluation system; to innovate and implement the incentive mechanism of teaching in colleges and universities according to the characteristics of talent training of teaching academic career ability; and to establish the access system of teaching career development in colleges and universities to promote academic career development and other suggestions of big data management of teaching in colleges and universities.

1. Introduction

World-class universities have another very important and prominent business characteristic, that is, they have a relatively high-level professional technical faculty, but how to maintain a high-level faculty is a problem worth thinking about. In this regard, some universities in western developed countries have more mature experience in the management of university teachers, which is worth learning and learning from. In the management of universities in China, there are some institutional deficiencies and defects in the recruitment, assessment, promotion, and evaluation of teachers, which have led to many unnecessary disputes [1]. Because of the highly specialized and academic nature of the characteristics of the university faculty group, and how the academic activities of teachers determine the popularity of colleges and universities. The core of a university is to determine high-quality academic activities. In China, the boundary between academic and administrative power is often unclear. Administrative power often interferes excessively with academic power, and academic power is not exercised effectively. This has seriously affected the personal academic creativity cultivation and personal academic motivation of some university teachers and researchers, and has restricted the level of our universities' own research and innovation development capability and continuous healthy

forward development. Higher education in the United States began in 1776, and after more than 200 years of development, it has borrowed the advanced management concepts of many countries' higher education institutions. After the Second World War, the quality of higher education in the United Kingdom and the United States gradually came to the forefront of the entire world, forming a system of university faculty management that is politically, economically, and culturally compatible with that of Germany and the United States. The reasons for the growth of a group of American universities from small colleges to influential universities in the academic world are many, of which the establishment and implementation of a scientific university faculty management system is an important part [2]. Therefore, building an excellent faculty and giving it a virtuous cycle is a topic worth exploring. With the intensive development of information technology in the era of globalization, how to make efforts to adapt the school faculty management and its institutional system to the conceptual approach and development philosophy of the world's information technology advanced society, and to build a highly qualified and a well-structured university faculty system has increasingly become the most important practical content of today's research and exploration of higher education development. As an institution is clearly different from other institutions in society, the management function of a university is to provide services for teachers and professors so that they can carry out scientific research, teaching, and social service work more conveniently and effectively. Therefore, this paper attempts to analyze the philosophy and practice of the university faculty management system in China and identify its characteristics in order to provide a reference for the construction of the university faculty management system in China [3].

Therefore, the use of VMware Workstation virtualization technology for our teachers' information management education training and school management can very effectively and quickly help keep up with the pace of changing teaching and learning, improve the level of modern management practices and research level of school teachers, and promote our country's multi-level higher education and high-level development of research universities. The modernization of the teaching staff, the improvement of service satisfaction with society and people from all walks of life further contribute to the improvement of the level of theoretical and scientific research capabilities of future teachers of our universities, the cultivation of the professional and comprehensive quality of our students' talents, and the high-quality development of China.

2. Research Background

Foreign countries had an early start in studying the management and education of teachers. American scholar Burton Clark focused on the academic characteristics of colleges and universities and the rules of academic management of college and university organizations in his book "Higher Education System: A Cross-National Study of Academic Organizations." Li pointed out the feasibility of faculty participation in academic management, which is conducive to motivating faculty members' work and can stimulate faculty ownership" [4]. Hamed et al. believe that teachers' own qualities and professionalism can participate in the management of the school and make it develop in a good and healthy direction, which cannot be achieved by other people [5]. Birnbaum (R), in his book "The University Operating Model", presents a view of the organizational model of college operations, the view of the organizational sector of college operations, for the members of the university, the values of equality and fair authority should be the first priority for all direct participants in the decision-making body of the university, this is because the fish than the external members, it is more concerned with the development of the university itself [6]. Therefore, this fair view of authority and a strong sense of responsibility make the universities run in a healthy and orderly way. As mentioned in the book: Shared governance is both a concept and a form of management. Yang and Kuruva have successively pointed out that the tenure system severely restricts and hinders the recruitment of teachers and free internal mobility of the state workforce in the country's colleges and universities, undermines the normal educational model of society in which students are educated for continuous personal career development, exacerbates the bureaucracy that contributes to the education of some colleges and universities, and is not conducive to the creative expression of teachers outside the system [7]. There are both internal and external reasons for the tenure system reform. After the 1970s, a system of tenure evaluation began to emerge as a way to promote effective development of the teaching profession, a formative evaluation that treats teachers in a developmental manner and compensates for ineffective performance [8]. A rational model would be for institutional leaders to review tenure or other alternatives to tenure and then rationally choose the appropriate institutional hiring policy." This post-tenure review of the tenure system evaluation process ensures the accuracy of peer evaluation and is appropriate for performance evaluation. A major research objective of this peer review approach is also to assess the academic performance of faculty work, to promote the healthy development of young faculty levels, and to require a necessary aspect of progress in the tenure-track faculty.

The domestic study started late, but progressed fast enough to keep up with the rapid development of higher education in China. By comparing the academic management of universities in China and the United States, Rongpointed out that academic management of universities is closely related to government departments and society, and put forward the idea of academic management innovation by combining the operation of academic management and different cultural backgrounds [9]. He pointed out that, as far as the internal relationship of universities is concerned, teachers are the core of university academic management. Yanlun and Huanyangpointed out in the article "Reflections on the Ethical Construction of Academic Management System of Universities": the important role of ethical construction in the academic management system of universities includes bottom-line ethics,

responsibility ethics, transaction ethics, and credit ethics; cooperation ethics and sharing ethics, value ethics, and identity ethics constitute the connotation and characteristics of the ethics of the academic management system of universities [10]. The establishment of the academic management system in colleges and universities needs to be based on ethics and morality, improve the system construction related to academic ethics in colleges and universities, and strengthen the status and role of institutional ethics. In addition, Yuanxi and Xiangyangintroduced these five basic stages of the development of the new policy of faculty salary management in Chinese universities implemented in China for more than 60 years: the foundation and adjustment period, the tortuous and turbulent period, the recovery and development period, the reform initiation period, and the reform deepening period, respectively, in their article "Analysis of faculty management policies in Chinese universities" [11]. Two kinds of thinking are proposed: "The identity of state university teachers is "state cadres," which does not reflect the special characteristics of university teachers, and also tends to lead to "officialdom," which allows teachers to be not very precise, and schools encourage teachers to "work," which is not conducive to the development of academics and teaching. The formulation of university teachers' policies should fully reflect the "academic characteristics." In addition, the macroscopic openness of the implementation of university teachers' policies is not sufficiently grasped, the implementation guarantee is not enough, and the overall scientific understanding of the construction of the evaluation index system is not enough, which affects and restricts the assessment of the scientificity, feasibility level, and economic effectiveness of the policies. The author Yiqun has written in the introduction of an article entitled "The Dilemma and the Way Out of the Tenured Professor System in American Universities" that since the late 1990s of the 20th century in the United States, American and other social institutions and domestic academic circles have put forward many critical views and strong questions about the reform of the tenured university professor system in China, and some domestic universities have tried to replace the tenured professor system in the United States with a fixed contract, arguing that China's tenure-track professorship system is inefficient and tends to create lax and lazy thinking among teachers, which is not conducive to attracting outstanding talents to the academic career [12]. In this article, the author of "The Dilemma of the Tenured Professorship," Liu, points out that although the tenured professorship has been questioned since the 1990s, hindering faculty innovation in academia, and many other shortcomings, professors are concerned about the diversity of schools and are less susceptible to changes that would promote school reform in a more effective way [13]. The authors point out that the life of the university lies in debate, and only the outspokenness of professors makes the school face its own shortcomings and deficiencies, and the professorial system needs to be protected and free to express their opinions rather than punish, so the tenured professorship serves to protect professors and thus academic freedom."

3. Materials and Methods

3.1. Basic Theory

3.1.1. Management of Teaching in Colleges and Universities. The management responsibilities of teaching in Chinese universities are closely related to the academic level of teaching. Teaching organization in higher education is generally different from the general disciplinary organization in higher education, which is a professional and technical organization mainly composed of academic personnel related to each profession and so on [14]. The characteristics of modern university organization based on the view of modern academic profession's subject status can be reflected in at least the following characteristics: disciplinary division of labor is the common organizational basis for the existence of all academic professions, loose disciplinary combination approach is the common organizational structure characteristic of all academic professions, and the dual management authority model is the main dual organizational and management structure characteristic of modern academic professions. From the perspective of the development of contemporary academic professional norms, university teaching and its administration should have several basic normative features such as more strict and systematic modern academic standards, autonomy of academic process, freedom of academic activities, recognition of academic achievements, and recognition of personal reputation. Both the management of teaching and the reform of institutional structure are very important components and parts of the administrative management and reform work of teaching in Chinese universities. The system should be institutionally prescriptive and can be closely connected with the practice of knowledge concepts in the corresponding field of teaching [15]. Therefore, an important first step in the system design and innovation of university teaching administration is to establish a human-oriented modern system concept of teaching science, i.e., to establish a "humanized" concept system and to practice the "academic standard" education concept and then to run through the whole process of guiding the system reform and innovation of internal management of university teaching [16]. The further establishment, exploration, and implementation of the innovation system of teaching classification management in colleges and universities must be based on the actual basic situation of the reform of the teaching team in our country, and also widely learn from the international advanced reform experience of international teaching separation management innovation. Therefore, after the innovation of the reform basis to be on the overall principle of dynamic reform and reform and opening up closely, fairness, democracy, competition, and interests, step by step, the theoretical innovation of the new system of university teaching separation management in China must also adhere to the principle of people-oriented, autonomy and freedom, scientific management, and so on [17].

In order to better strengthen the modernization of the quality of the university teaching team, as well as to cooperate with the further smooth and effective

implementation of China's education policy "science and education to develop the country, talent to strengthen the country" program, universities in China have implemented a relatively strict and unified high school teaching qualification appointment methods, and teaching and the management assessment system. There is a strict process of teaching appointment, and the qualified candidates are finally incorporated into the teaching system, the specific process is shown in the figure, there are 8 steps, which basically ensures the basic level of our teaching team, as shown in Figure 1.

In the teaching assessment, before the assessment of teaching, the school usually organizes a meeting to promote the assessment, prints and distributes the teaching assessment methods to teaching individuals. After receiving the assessment method, teaching should summarize teaching's thoughts, attitudes and responsibilities in the work, fill in information such as scientific achievements and awards in the work, and submit a work report to the management. The department will evaluate teaching according to its individual situation and submit it to the school and academic department for review. The school and the academic department will grade and evaluate the work and political thoughts of the teaching individuals. The final overall grade of teaching will be derived and reported to the school for acceptance. The assessment mainly includes teaching's ideology, knowledge, business ability, and work performance.

Although the standard of our teaching assessment is relatively backward, it has served the cause of higher education in China for more than 40 years, and after continuous historical evolution, it has also basically adapted to the basic national conditions of China and made indelible contributions to higher education in China. The teaching assessment process of higher education in China is shown in the figure, with a total of 6 links, as shown in Figure 2.

3.1.2. Data Collection.

The big data management system utilized today can not only store a large amount of data and form a large amount of the data storage network system, but also analyze and process data extremely fast [18]. Big data management systems are all about analyzing and processing a wide variety of data with reasonable use of media such as computers and networks. It is becoming more and more popular in various aspects of life with fast and convenient digital information transmission and processing, bringing a great degree of information convenience to people's future study and life, updating people's traditional view of data management, providing a more innovative and convenient way to store and process complicated data, and greatly improving people's work efficiency. Big data management system has four main features, such as large storage volume, rapid information processing, real and effective data results, and a wide variety of data types, as shown in Figure 3.

3.2. Research Methodology

3.2.1. VMware Workstation Virtualization Technology.

VMware Workstation is a powerful desktop virtualization software that provides users with the best solution for developing, testing, and deploying new applications while running different operating systems on a single desktop. VMware Workstation simulates a complete network environment on a physical machine and a portable virtual machine providing greater flexibility and advanced technology than any other virtual computing software on the market. For enterprise IT developers and system administrators, VMware's features in virtual networking, real-time snapshots, drag-and-drop shared folders, and PXE support make it an essential tool [19].

VMware Workstation software enables user self-service access to cloud and Windows application behaviors, easily accomplishing permission management for new employees. Easy permission management for new applications and new employees. Employees will have a single-touch, one-time login to mobile devices via the industry's first patent-pending secure app token systems (SATS) technology, establishing credit between the user, the device, the enterprise, and the cloud. Once authenticated, employees will immediately gain access to a personalized library of enterprise apps, ordering virtually any mobile, cloud, or Windows app.

Flexible device choice: whether it is a bring-your-own-device or enterprise-owned device, leverage mobile operating systems (iOS, Android, and Windows 10) to manage laptop, smartphone, and tablet configurations and interfaces for instant enterprise use with a new self-service, all-in-one management platform and off-the-shelf device configurations. Employees will be able to control their own mobile devices and choose the level of service and IT restrictions they are comfortable with, thereby increasing mobile workforce penetration and productivity and reducing the risk of data loss.

Secure use of e-mail, calendar, content, and chat applications, employees want to be able to use enterprise mobile apps just like consumer apps. VMware Workspace ONE will support consumer-grade ease of use for e-mail, calendar, contact, content, and chat applications, while invisible security measures will protect the enterprise from data breaches. In addition, Workspace ONE will embed swipe and touch capabilities and integrate with web applications such as Evernote, Gmail, and Yahoo! Mail, and third-party SaaS applications such as Atlassian Jira, GitHub, and Jenkins, allowing developer operations teams to operate and respond from anywhere.

Data security and conditional access security checks. To protect the most sensitive information, VMware Workspace ONE seamlessly integrates identity management, device management, and the industry's first-ever compliance check conditional access to enforce access decisions across any application or device. The approach builds on traditional authentication policies (such as authentication strength and network services) conditionally and adds device compliance policies including GPS location, application whitelisting/blacklisting, and third-party plug-ins from AirWatch mobile security alliance partners. At the same time, the AirWatch compliance engine can fix compliance issues through a series of customizable, automated workflows to ensure greater scale, and higher security.
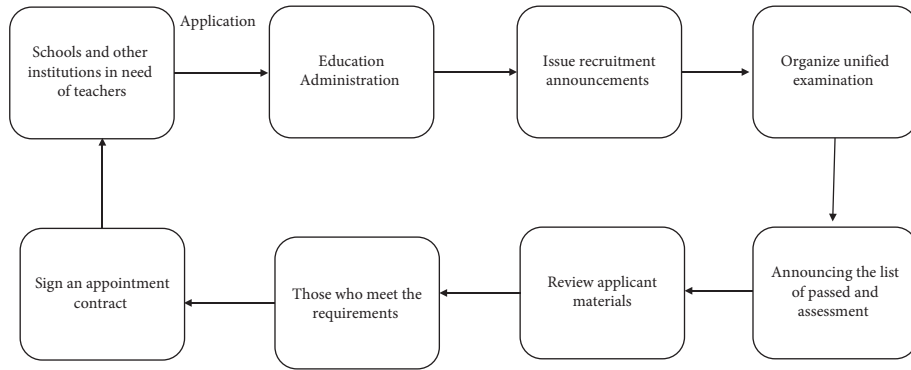
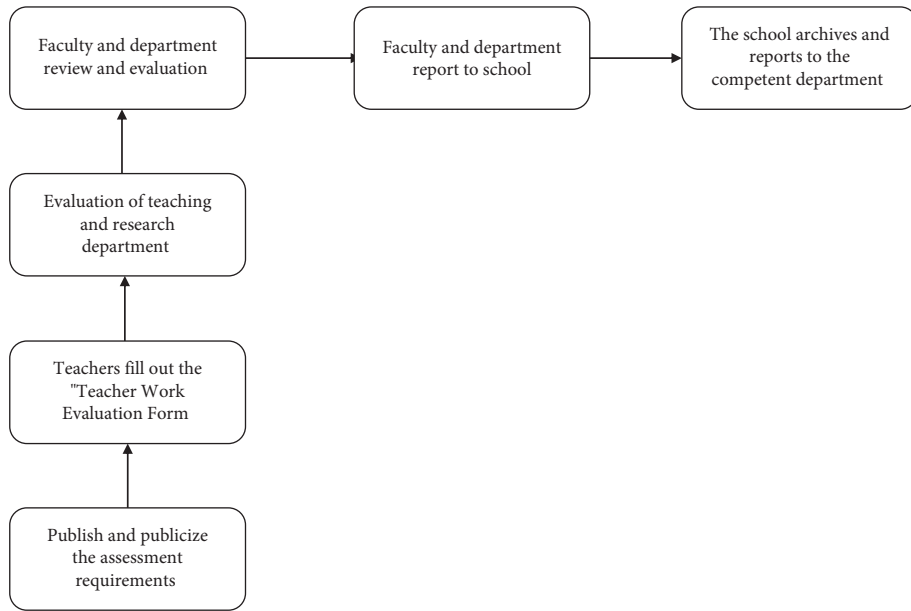FIGURE 1: Flow chart of teaching appointment.

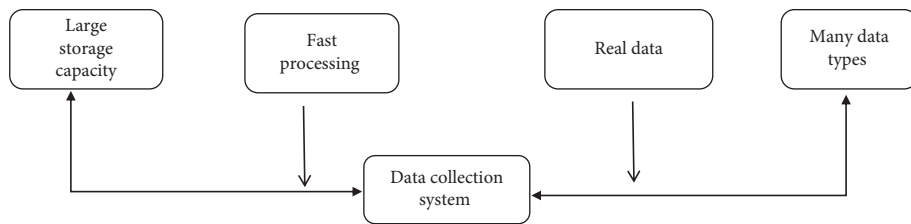FIGURE 2: Flow chart of teaching assessment in higher education in China.

FIGURE 3: Characteristics of the data collection system.

VMware Workstation has the following features: (1) use Unity to integrate clients with hosts. (2) More robust VM recording and playback capabilities. (3) Support for smart cards and associated card readers. (4) Enhanced ACE. (5) Improved 3D graphics support, as shown in Figure 4.

3.2.2. SQLServer Database Management Methods. Based on today's mainstream Windows and other operating system platforms, SQLSever databases are rapidly becoming widely accepted as a new generation of database and analysis processing platform software by enterprise customers. Unlike other current database platforms, such as FoxPro, and smaller databases, such as Access database, SQLServer has a complete set of powerful and easy-to-use database management and service processing functions. There are engines that support development, standard database languages, such as SQL, and extended feature functionality (such as replication, OLAP, and analytics). It is also significantly ahead of the rest of the market in terms of other key features that only large database software can have to [20], such as stored procedures and triggers.
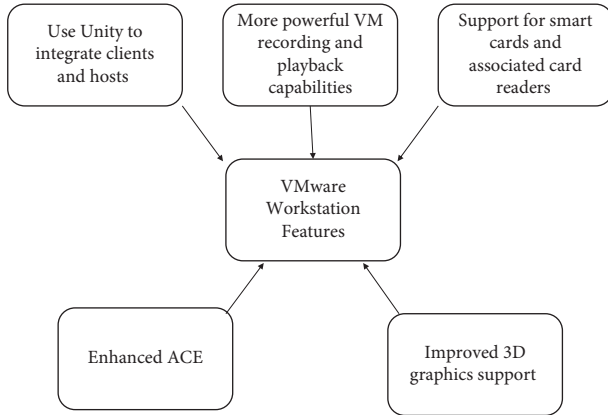
Figure 4: VMware workstation features.

Microsoft SQLserver2010 is based on Microsoft SQL server 7.0, greatly extended to increase database performance, reliability, quality management, and ease of use. Microsoft SQLserver2010 database edition is an enterprise relational database management system with high performance, high reliability, and ease of use.

Therefore, in this paper, SQLserver2010 is selected for big data analysis to analyze the innovative application of the teacher education management system.

3.2.3. Main Evaluation Method. To analyze the data collection and visualization application of VMware Workstation virtualization technology in university teaching management, efficient use of big data for education and management of university teachers requires comprehensive use of various analysis methods to quantify specific indicators of teachers, specifically see the strengths and weaknesses of teachers, and better manage and educate the teaching team, so this paper introduces the comprehensive evaluation index of teachers. The following is the formula for calculating the comprehensive teacher evaluation index, the higher the index value, the higher the evaluation and ability of teachers.

In the unsupervised learning part, the data are clustered by using clustering algorithms such as K-means to obtain the centroids of the radial basis function in the implicit layer, and then the width vector of the radial basis function is calculated by using the centroid information, and is calculated by the following formula:

$$\sigma_j = \frac{c_{xy}}{\sqrt{2h}}, \tag{1}$$

where c_{xy} is the maximum distance before the centroid and h is the number of nodes.

After that, the input data are scattered through the implicit layer and the output layer, respectively, and the output of x_i the first node of j the input sample in the implicit layer is calculated by the following equation:

$$\phi(x_i, j) = \exp\left(-\frac{1}{2\sigma_j^2} x_i - c_i\right), \tag{2}$$

where c_j and σ_j are the centroid and width m vector of the first node in the hidden layer, respectively.

The output x_i of the input j sample at the first node of the output layer (3) is calculated by

$$y_m = \varphi(\phi(x_i, j) * w_m), \tag{3}$$

where w_m is the weight of that φ node and is the activation function.

In the supervised learning part, it is mainly the process of continuously correcting the parameters in each layer, and this process is mainly calculated by the error function to calculate the gradient value of each parameter, and then the parameters are continuously corrected using traditional gradient descent methods, such as stochastic gradient descent (SGD), taking the weights used for linear calculation in the output layer as an example, the update formula is as follows:

$$w_t = w_{t-1} - u * \frac{\sigma E}{\sigma w_{t-1}}, \tag{4}$$

where E is the error function and u is the learning rate.

The higher the value of the radial-based teacher comprehensive evaluation neural network index indicates the higher the evaluation and competence of the teacher. In addition to the above method, the centroids and width vectors of the hidden layer can be directly generated randomly, after which they are updated according to the gradient correction formula of the supervised learning process.

4. Results and Discussion

4.1. Current Status and Results of the Study. In this study, based on collecting data from multiple departments such as the Ministry of Education and the National Bureau of Statistics, and finding relevant statistical yearbooks as reference, the results of this study were obtained by using VMware Workstation virtualization technology and SQLServer to dynamically process the relevant data, and analyzing the changes of some data for up to 21 years and 6 years, respectively.

In the 20 years from 2000 to 2020, the ratio of male to female teachers and the ratio of master to doctor in China's colleges and universities showed a decreasing trend year by year, although teachers with an undergraduate degree or below were not considered, it was enough to show the trend that the ratio of male to female teachers in China's colleges and universities was gradually balanced as well as the gradual improvement of teachers' education, which further showed that the teachers in China's colleges and universities were gradually balanced and the comprehensive quality of teachers was continuously improved, as shown in Figure 5.

In the span of 20 years from 2000 to 2020, foreign teachers and minority teachers in China also show a trend of increasing year by year. It not only shows that the increasing development level of China attracts more foreign teachers and other high-level talents, but also shows the determination of poverty alleviation identified in China and the practical implementation of minority
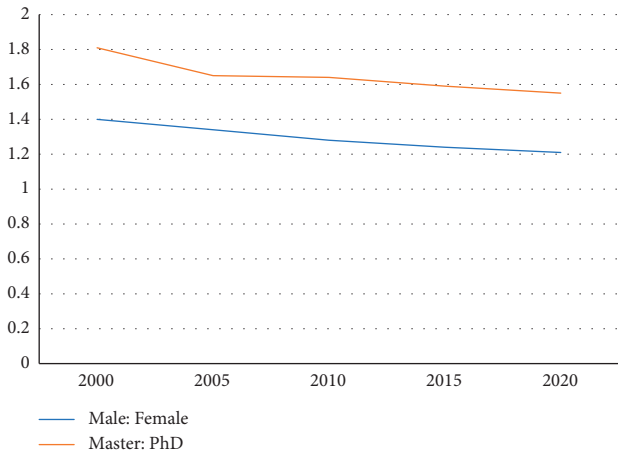
FIGURE 5: Changes of the gender ratio and the master's degree ratio of teachers in colleges and universities in China.
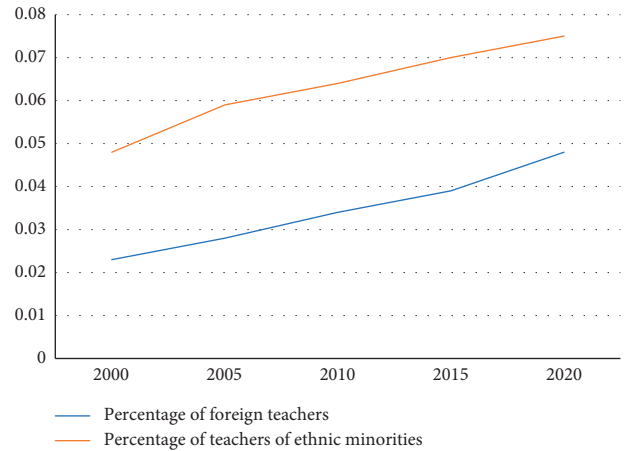

FIGURE 6: Changes in the proportion of foreign and minority teachers.

development policies. More importantly, exchanges with foreign scholars are more common and the academic atmosphere is more open; minority scholars also enrich the fields and perspectives of academic research, as shown in Figure 6.

The total proportion of all types of teachers in one of our institutions is higher. Other research institutions have the lowest proportion of all types of teachers, whether it is a bachelor's degree or independent college, high school, or other research institutions, the structure of teachers' titles shows a relatively normal distribution structure of middle and low on both sides. The distribution of teachers at all levels in China is more balanced. In addition, the structure of teachers in China shows a distribution of the highest percentage of undergraduates; the second highest percentage of senior high schools; independent colleges; and other research institutions are less. Basically, it has adapted to the rapid growth of China's development situation, as shown in Figure 7.

The comprehensive evaluation index of teachers in colleges and universities in China shows a trend of increasing year by year. The radial basis teacher comprehensive evaluation neural network index mainly processes the input data from two parts, which are supervised learning and unsupervised learning, and in the unsupervised learning part, the data are clustered by using clustering algorithms such as K-means, so as to obtain the centroid of the radial basis function in the implicit layer, and then the width vector of the radial basis function is calculated by using centroid information, and finally the comprehensive evaluation index of teachers. It can be seen that the comprehensive quality of teachers in China has been improving, the system of education and research in China's universities has been improving, and the ecological management system of universities has been improving, as shown in Figure 8.

4.2. Discussion of Data Collection and Visualization Application in Teaching Management of Colleges and Universities

4.2.1. Improving Academic Standards and Establishing a Professional Access Qualification System.

Teachers in higher education continue to engage in the academic profession of teaching firstly need that students have undergone long-term solid training in theoretical knowledge and technical professional quality of this academic discipline, and have a fairly certain high theoretical academic quality foundation and potential academic research development growth potential. Therefore, an improved system of access and qualifications for the education profession should be established to fully ensure the comprehensive overall quality of our teaching population.

(1) To improve the qualification standards for practitioners in accordance with the law and strengthen the qualification legislation for access to the education profession. The revision of the professional qualification standards for teachers in colleges and universities should focus on clarifying their corresponding academic conditions and professional ethical and moral conduct requirements, highlighting in the assessment that they have the basis of disciplinary professional competence and the ability to teach and research in their disciplines, improving the accreditation standards for the admission of relevant academic professionals, and ensuring the overall quality of knowledge of the general group of teachers in colleges and universities. At the same time, three different levels of professional qualification standards have been formulated and promulgated according to the needs of different historical regions, different academic types of colleges and universities, and different levels of ability development of students trained by teachers of different national academic career ladders in China. The construction of the higher education teacher qualification system is an important strategic

Structure of faculty titles in general higher education institutions
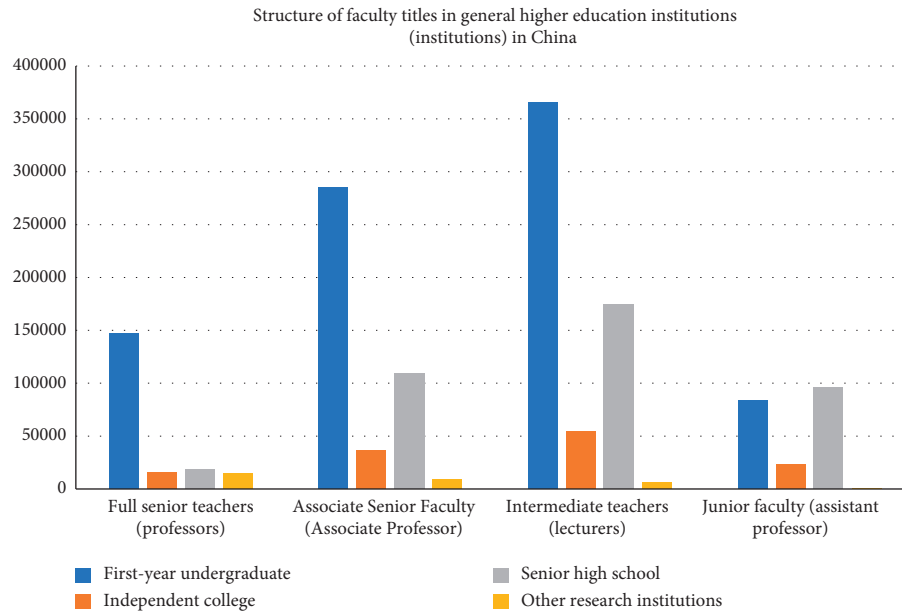(institutions) in China

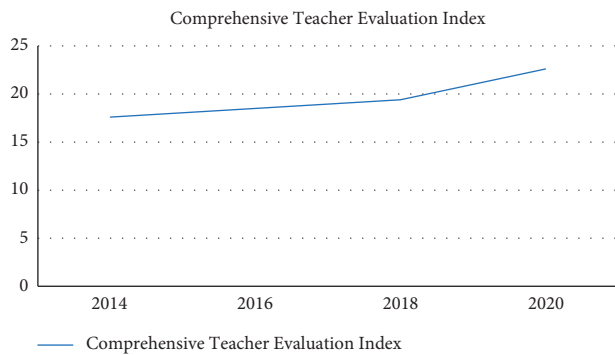FIGURE 7: Structure of teachers' titles in China's general higher source schools (institutions).

FIGURE 8: Changes of the teachers' comprehensive evaluation index.

component of the work to establish a national professional qualification system with national legal norms, and the implementation of the school teacher qualification system certification is an important part of the work to implement the principle of unified state management of education in accordance with the law.

(2) To study the establishment of a multi-level, time-sensitive, and highly operable accreditation standard system for relevant vocational qualification levels and the establishment of provincial vocational qualification accreditation and implementation certification bodies. Based on the actual need situation of meeting the needs of individual lifelong development of the academic career and the value concept of pursuing comprehensive lifelong development education of academic career, a multi-level, current and effective system of academic career qualification, and certification professional standards is established. Therefore, it is recommended to gradually establish academic career and certification professional standards covering several minimum levels above the college teaching career, and use these minimum levels as the core qualification standards for evaluating academic career talents. At the same time, a system of regular and certified assessment and evaluation of teaching qualifications at all levels should be established, and examinations should be set for students at each level according to the level of teaching qualifications valid once (e.g., every five years). In the study validity period, you must pass the corresponding course assessment of the corresponding next level of the education qualification training certification level standard by obtaining a certificate of experience and study results of teaching and continuous learning education training of a certain scale, and pass the corresponding course assessment of the corresponding next level of the education qualification training certification level as required, in order to successfully obtain the education continuing training teaching practice qualification. In this way, the level of development between the dual standards of qualification and certification can be mutually permeable and integrated, guiding teachers and the community to encourage in-service teachers to carry out continuing in-service learning, indicating the right direction for the in-service professional and technical development and upgrading of China's teachers, in an effort to effectively ensure the improvement of the overall quality of teachers nationwide.

4.2.2. Following Academic Freedom and Equality, and Improveing the Teacher Appointment System. The management of teacher appointment system is one of the several major administrative links stipulated in the formulation of the basic system of teacher recruitment management in colleges and universities. Researchers in colleges and universities should adhere to the basic characteristics of the academic career ability of college teachers, adhere to the employment principles of following academic evaluation and free flow and peaceful flow, and optimize and improve the work system of appointing college teachers to positions.

(1) To establish a system of career "admission period" and improve the job management system. Academic career is a special profession with its own special requirements. The construction of teachers in colleges and universities is a process of "selection" and "optimization," and a reasonable "admission period" should be set. For example, "fixed-term" appointments and "open-ended" appointments should be used as the institutional design. The setting of "entry period" of university teachers should pay attention to the following points: firstly, to establish reasonable "entry period," secondly, to provide professional development and equal competition opportunities for the "entry" group; thirdly, to implement peer academic review and "developmental evaluation" in the "admission" stage; fourthly, there should be corresponding regulations for the "appointment period" to protect the legitimate rights and interests of university teachers. The purpose of post-management is to optimize the structure of university teachers, promote reasonable flow of academic career, and promote academic prosperity and development. According to the overall planning of the university and disciplines, the strategy of classifying posts and management is appropriately implemented so that teachers' duties are clear, each has its own role and the academic performance is maximized and most effective.

(2) The system of appointing teachers for employment positions in colleges and universities, which is flexible and effective in various forms, has been categorized and standardized and perfected. First, the flexible and efficient diverse types of appointment teacher positions employment position system established for all types of colleges and universities of different professional types of schools in China. In the overall design work of the appointment system, three different levels of assessment and evaluation standards and two types of appointment should be used at the same time. In order to fully promote the development of diversified academic heterogeneous research and professional diversified research of teachers' work in higher education institutions, and to promote the diversified characteristic academic development of various types of university research, various different types of academic career ladders responding to the diversified development

characteristics of the teaching profession in China should be created by adopting some different and flexible cooperative approaches. Secondly, an effective labor contract system that effectively guarantees the equal development of academic interests of faculty members should be established to improve academic productivity. According to some characteristics that exist in the academic career characteristics of higher education itself, the signing of employment staff contracts by university teachers should also take two forms of signing collective contract statutes and labor contract forms, respectively, to clarify the division of rights and obligations of each school staff and the various rights of the individual teachers employed, to gradually promote the realization of real equality of status between the rights and obligations of the two cooperating parties, and to ensure legality and reasonableness when signing labor dispatch contracts.

4.2.3. Adhering to the Principle of Academic Fairness and Optimizing the Evaluation System of Teachers. The evaluation system of teachers in higher education should take the promotion of teachers' academic career development and teachers' self-fulfillment as the ultimate goal of evaluation. Therefore, in order to promote the development of teachers and the academic career, it is necessary to adhere to the principles of academic fairness and freedom to optimize the evaluation system of teachers in colleges and universities.

(1) To scientifically establish the evaluation system of educational assessment to promote the overall development of their academic careers. Teachers in colleges and universities must engage in academic work of higher education mainly according to the law, and the principle of academic evaluation freedom is its fundamental internal operation logic. The scientific establishment of the evaluation system standards of teachers' titles must all take into account the specific characteristics of academic career personnel training in colleges and universities, and follow the evaluation principle of free and standardized educational academic work. On the one hand, to create a scientific, harmonious, and fair environment atmosphere for academic education evaluation of university teachers, reflecting social humanistic care. On the other hand, it is necessary to gradually change the concept of traditional evaluation indexes and adopt the method of the comprehensive developmental evaluation index system. High evaluation recognizes the value of teachers' academics and their creation, boldly advocates encouraging the innovative practice of academic achievements and academic creation of university teachers, and pays attention to the direction of development and progress that teachers' academic potential excavation and education may bring in the future; however, at the same time, attention should be paid to consider the principle provisions and

relative flexibility of the policy of talent evaluation work, so that high-level outstanding innovative talents are fully cultivated freely and fully healthy. However, at the same time, we should take into account the principles and relative flexibility of the talent evaluation process, so that high-level innovative talents can be cultivated freely and healthily, and the innovative humanistic concept of "teacher-oriented" projects can be implemented effectively. To establish a system of evaluation and assessment of university professors' titles with the assessment of professors' academic and professional reputation as the leading index.

(2) To actively establish a multidisciplinary academic position evaluation standard system for high-level teachers. The main work assigned to teachers in colleges and universities mostly involves major academic affairs such as teaching, scientific research, and social public service undertakings in colleges and universities. The evaluation results of academic ability are two important objective indicators used to measure the effectiveness of professional construction of a college teacher team and the effectiveness of improving the level of teaching or scientific research development. Therefore, it will be particularly necessary to establish a more diversified and scientific high-level academic level evaluation system, to respect the individual differences in knowledge of the majority of university teachers' groups, and to fully evaluate the level of reasonable individual needs that meet the development of each highly qualified teacher. The second feature is to emphasize students' participation in all-round, multi-faceted and comprehensive assessment, and to integrate the whole set of information systems formed by the university, including their self-perception assessment, student quality assessment, peer quality assessment, and assessment in connection with other academic groups. The final evaluation results of the final evaluation by teachers and students are integrated together, and the scientific fairness and accuracy of evaluation information are ensured by the feedback results of professional information from multiple perspectives of students.

4.2.4. Based on the Characteristics of Academic Profession, Innovative Incentive Mechanism for College Teachers. The design of incentive mechanism is one of the three important practical content links of performance management practice for teachers in colleges and universities in China. Researchers in colleges and universities should be able to innovate various incentive mechanisms for the work of college teachers based on certain intrinsic spiritual motivation characteristics of teachers' academic career pursuits, so as to promote high-level academic moral innovation enhancement and healthy professional development of college teachers in China.

(1) It is necessary to strengthen the internal cultural motivation of the main body of cultivating academic professional culture and create a long-term incentive mechanism for cohesion of academic group wisdom. As another special academic profession, competition, reputation, and group honor also constitute an important internal and external incentive mechanism for this academic professional behavior. The analysis of the working group on the internal distribution of income in colleges and universities found that the first thing that should be taken into consideration when assigning staff to work in local colleges and universities is not performance pay and salary and benefits, but the nature of the work and the local academic atmosphere. The research on incentive mechanism of innovative research teachers in colleges and universities should be more based on the characteristics of internal incentive methods of academic professional managers' own behaviors, insisting on the combination of internal material factor incentive as the main and internal spiritual factor incentive, the combination of material and spiritual principle incentive, the combination of school internal factor incentive principle and the college external factor incentive method, the combination of school internal factor incentive principle, the combination of school positive incentive means, and internal negative factors motivation methods combined, with external positive motivation methods as the main ones, to maximize the reasonable guidance to stimulate the subjective enthusiasm and independent creativity of young teachers' innovation and promote high-level academic innovation.

(2) To pay attention to create a university culture atmosphere with the spirit of academic service first and pay attention to the academic humanistic power of promoting academic career innovation. As a national academic organization, the university research association has relatively strong and unique characteristics of university culture. First, it actively discards some old academic culture systems that are not conducive to the development and improvement of young teachers' academic career ability: it discards the traditional incentive mechanism that "seniorization of government and academia" can independently nurture college teachers, establishes a scientific incentive mechanism that is really suitable for the actual needs of academic professional development of college teachers and matches the needs of self-sustainable development, and correctly and reasonably. The reform of the negative academic moral incentive tendency based on the existing academic value standard of anti-monetarism, materialism, and academic utilitarianism enriches the theoretical content and application of academic social incentive theory; the reform of the administrative system to effectively control and eliminate the

tendency of academic moral "relationship" and abuse of "rent-seeking," such as academic status power. The reform has effectively controlled and eliminated the tendency of academic ethics "relationship" and the abuse of academic status and power and other "rent-seeking" phenomena, and ensured the fairness of academic ethics in society. Rent-seeking is a common theory in economics and sociology. Generally speaking, it is the act of bribing government officials to obtain monopoly status and monopoly income by virtue of the privilege granted by the government.

4.2.5. Creating a System of University Faculty Development for Academic Career Development. The teacher CPD evaluation system is also one of the two main core content items of the teacher training management application system research. The reform of the system of continuous development of teachers in colleges and universities should be aimed at effectively promoting the comprehensive development of contemporary college teachers' academic careers into success and their personal self-development ability as an important goal.

(1) To gradually form a flexible and diverse effective higher education professional literacy development planning system and promote the development of Chinese teachers' professional quality toward legalization. The basic composition system of higher education teachers' talents is extremely complex and large, and the development status of each type of individual university teachers' main professional fields is significantly different in degree. Therefore, each university in different teaching type backgrounds should also have a system of policies for the development of high-level teacher professionalism of different degrees. Such as the establishment of an open, flexible, diverse, and efficient mentor training mentor system, a flexible and diversified system of university-enterprise cooperation talent development programs, academic norms, a system of lifelong education development planning, and the construction of an academic sabbatical system. At the same time, according to the actual characteristics of various types of college teachers in different historical academic career stages of development, free professional training, further training, academic experience exchange seminars, and other training opportunities are provided for college teachers at all levels to meet the needs of their own educational professional development orientation and actual academic position development planning. The process of legalization of the development of higher education teachers' positions is an important legal sign of the results of the construction of the professional path of higher education teachers. The main guidelines that should be followed through administrative legislation to guarantee the in-depth implementation of the strategy of professional

development of highly qualified teachers are the relevant mandatory legal norms and government normative laws.

(2) To accelerate the construction of a new framework system of institutional development of teachers that is conducive to promoting the development of academic talents under the core objective of maximizing their professional specialties. College teachers themselves are to engage in a variety of academic career forms, and their educational careers and their development should be through a relatively lifelong and continuous evolutionary process. In short, the policy system of university teachers' management development should also take the promotion of academic career development and professional education development reform as an important goal to help young teachers better realize academic self-actualization. In the context of internationalization, popularization, and marketization of higher education, the administrative management of university teachers is facing a lot of serious problems and challenges in the new situation, which naturally requires us to strengthen the forward-looking research on the innovation and development of the reform mechanism and related system for the management and development of teachers.

5. Conclusion

In this study on the data collection and visualization application of VMware Workstation virtualization technology in university teaching management, data processing is carried out by the SQLServer database processor using VMware Workstation virtualization technology, and finally the radial-based teaching comprehensive evaluation neural network index is used to calculate the teaching management quality to conclude that China's teaching The team is gradually balanced and the comprehensive quality of teaching team is improving; the academic atmosphere is more open; the fields and perspectives of academic research are richer; the distribution of teaching at all levels in China is more balanced the comprehensive quality of teaching in China is improving, the system of education and scientific research in China's colleges and universities is improving, and the ecological management system of colleges and universities is improving. Conclusions include

(1) Improving academic level and establishing professional access qualification system

Teaching in colleges and universities to continue to engage in teaching academic careers first requires students to have gone through long-term solid theoretical knowledge of this academic discipline and technical professional practice training, with a fairly certain high level of humanistic academic quality foundation and potential academic professional development potential. Therefore, a perfect education career teaching access and qualification

system should be established to fully guarantee the overall professional quality of professional teaching staff to improve qualification standards and strengthen legislation on professional access and qualifications, to establish and improve a multi-level and more timely national professional qualification and certification standard system, and to set up a professional qualification implementation agency.

(2) Follow academic freedom and equality and improve the teaching appointment system

Teaching appointment system management is one of several major administrative links stipulated in the formulation of the basic system of teaching recruitment management in colleges and universities. The academic journal of colleges and universities should be able to adhere to the actual characteristics of the nature of our academic profession, adhere to the principles of basic academic freedom and equality and other employment principles, and optimize the system for the appointment of teaching titles in colleges and universities. The nature of academic profession is a legal profession of extremely special nature in China, with many requirements of its relative speciality. To establish and improve a flexible and diversified employment system for teaching in colleges and universities.

(3) Always adhere to the principle of implementing academic fairness and optimize the evaluation method system of teaching in colleges and universities

The evaluation system of teaching in colleges and universities should take the promotion of teaching academic career development and teaching self-fulfillment as the ultimate goal of evaluation. Therefore, in order to promote the development of teaching and academic career, it is necessary to adhere to the principle of academic fairness and freedom to optimize the evaluation system of teaching in colleges and universities, to establish an evaluation system to promote academic career development, to establish a multidisciplinary academic evaluation system for teaching.

(4) It is necessary to innovate and design the incentive mechanism for teaching in colleges and universities according to the own characteristics of academic career groups in colleges and universities

The design of incentive mechanism is one of the three important practice content links of teaching performance management practice in China's colleges and universities. How should the scientific researchers in colleges and universities innovate and construct the scientific incentive mechanism of teaching research in colleges and universities according to the intrinsic subjective motivation characteristics of teaching academic occupational features, so as to promote the innovative transformation of high-level academic values and promote

the development of professional innovation in teaching research in Chinese colleges and universities. To strengthen the scientific internal motivation incentive for academic professionals and create an incentive mechanism for academic group innovation. To create a good cultural atmosphere where academic values are paramount and value the historical and humanistic environmental motivation for the flourishing of China's academic career.

(5) Establish a university teaching development system to promote academic career development

Teaching professional development evaluation system should be one of the three main research content systems developed by the university teaching academic management information system. The research system of professional development of teaching disciplines in colleges and universities should also take the construction goal of actively promoting the construction of professional development of teaching academic career and realizing self-development and innovation in contemporary colleges and universities. Formation of a system of teaching flexible and diverse changes in the development of professionalism of students, legitimizing the development of professional abilities of our teaching students. The system of standards for the development of teaching professionalism in China with the highest target requirement of professionalization of the academic career of teachers should be constructed.

Data Availability

The dataset is available from the corresponding author upon request.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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