Research on teaching Quality Evaluation System of University Teachers based on data Analysis

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Abstract

Adhere to the teaching quality annual report as the basis, carefully collect the basic data and materials of teaching assessment, gradually improve the teaching assessment system of college teachers, to ensure the normal development of education and teaching work and the improvement of school education and teaching strength.This article obtains from the analysis of the connotation of teacher's teaching evaluation, analysis the present situation of teachers' teaching evaluation in colleges and universities and the existing problems, and to the teachers teaching evaluation of the annals of the teaching quality, and from the evaluation subject, evaluation index, evaluation method, evaluation target several aspects, such as put forward the measures of perfecting the teaching appraisal evaluation system and approach.

Keywords

Teaching quality; Evaluation; Teaching assessment; Annual Report on Teaching Quality.

1. Introduction

With the continuous development of science and technology, the era of big data has come. People's Daily life and upper production are flooded with massive data, and the scale of data processing is gradually expanding. Big data has successfully penetrated into various industries and become one of the key production factors in the current society. In the era of big data, China's education should also make corresponding reforms. Using big data mining to innovate the teaching quality evaluation system can not only improve the all-round improvement of teaching concepts, methods and thoughts, but also better ensure the quality of talent cultivation, which has very important significance.

2. The Significance of Constructing Teaching Quality Evaluation System

For college education, the most important task is to train talents. In college teaching, the level of teaching quality is the basic standard to measure the development of a college, but also the key indicator of the comprehensive competitiveness of colleges and universities, so using reasonable and effective means to improve the quality of teaching is the primary goal of China's education. It can be seen that the construction of teaching quality evaluation system can not only timely find the shortcomings and advantages in classroom teaching or teaching practice, but also comprehensively and reasonably judge the teaching effect, so as to take corresponding measures to improve the shortcomings in teaching activities quickly and accurately. It can also improve students' learning enthusiasm and teachers' professional quality and sense of responsibility to a great extent, which is of great significance.

3. The Overall Design of Teaching Quality Evaluation System Based on Data Mining

3.1. Analysis of Teaching Quality Evaluation System

Teaching quality evaluation is an important indicator of teaching work evaluation. The construction of teaching quality evaluation system can not only change the traditional phenomenon of human factors affecting the scoring, but also realize the accurate analysis of teaching quality evaluation indicators by using data mining technology, and objectively reflect the factors affecting teaching quality. Combined with the principles of higher vocational teaching quality evaluation system, the system should have the following functions: (1) Manage user rights. It is the basis of teaching quality evaluation system design and the basic function of meeting different needs. Due to the different participants in the evaluation of teaching quality in colleges and universities, the assigned score of the evaluation is also different, so it is necessary to set the corresponding authority. For example, students have the permission to log in to the system, but do not have the permission to modify. And the teaching administrator has the authority to modify and query the data mining results. (2) Mining association rules. The data of objective evaluation of teaching quality can be mined through association rules to provide basis for precise adjustment of teaching strategies. (3) Online reviews. It is mainly produced to adapt to the development of education informatization. It is mainly to meet the needs of different evaluation subjects and reduce the factors of intermediate human intervention in teaching evaluation results through online evaluation.

3.2. The General Framework of Teaching Quality Evaluation System Based on Data Mining

The teaching quality evaluation system based on data mining is mainly to provide users with the best decision-making information. Therefore, the designed system must have the characteristics of less investment, strong practicability and easy maintenance.

(1) The operational layer. Users input relevant quality evaluation data on the operational level, select relevant data sources and set mining parameters to achieve the management of all data, and show various information results generated through data mining on this level.

(2) Data mining layer. Data mining mainly uses mining parameters set by users to mine the database, and then generates association rules, which are displayed in the operation interface layer.

(3) Data storage layer. It mainly stores all kinds of stored data and provides operational data to all layers of the system.

3.3. Database Design

Database is the core of the whole teaching quality evaluation system, which is mainly designed by e-R model. The database designed according to this model mainly includes: (1) The users table. It is identified as YHB and contains the user name, password, and user type. (2) The student table. It is identified as XSB and contains fields such as student number, name, gender, class, and department. (3) The teacher's table. It mainly includes the basic information of teachers, such as teacher number, age, gender, education background and graduate school, etc. (4) Student evaluation. It mainly includes the data of teacher attitude, teaching content, teaching effect, teaching method and the total score of evaluation. (5) Expert evaluation form. It mainly includes the number of evaluation experts, names of teachers, teaching attitudes, teaching content and teaching methods, etc.

4. The Present Situation and Existing Problems of Teaching Assessment of College Teachers

At present, most colleges and universities evaluate teachers' teaching mainly based on the teaching tasks (workload), teaching achievements, teaching achievements and students' evaluation. In these indicators, students' evaluation plays a dominant role, and some colleges and universities only recognize students' evaluation of teachers to judge the quality of teachers' teaching. This kind of evaluation and examination way is one-sided, also is unfair. Teachers' teaching assessment should be a comprehensive, objective and complex systematic project, including all aspects of teachers' teaching process. By comprehensively analyzing the present situation of teaching assessment and evaluation of teachers in colleges and universities in China, some problems existing in the assessment and evaluation system should be paid attention to and reflected on.

4.1. The Principal Position of Teachers Is Blurred

Teachers should be the main body in the teaching evaluation of teachers in colleges and universities. But at present, many colleges and universities show the teaching assessment and evaluation of teachers as one-way management from superiors to subordinates, that is, the school teaching departments put forward various requirements for teachers' teaching, and formulated various rules and regulations and documents, and teachers can only cooperate and participate passively. In this case, as the subject of the assessment of teachers in a passive and vulnerable position, the subject of the examination is "fictitious". In this kind of evaluation system, assessed and be assessed is a typical asymmetrical relationship between lack of two-way communication and understanding, cause fierce competition between the teacher and the gap between the teachers and appraiser, impact between the teachers, teachers and evaluation of unity and cooperation, can't find out the biggest potential of teachers, play to teachers' teaching enthusiasm. At the same time, it is not conducive to the construction and development of teaching team and the construction and development of harmonious campus.

4.2. Single Evaluation Criteria

The teaching evaluation of university teachers is a comprehensive system, and the evaluation standard should be scientific and objective. At present, some colleges and universities evaluate teachers' teaching performance simply by their teaching workload, emphasizing quantity over quality. This makes many teachers simply pursue the quantity to complete the teaching task, but ignore the teaching quality. This is inconsistent with the purpose of higher education in China and the goal of running a school. It will inevitably reduce the recognition of the school by the society, and the reputation of the school will be greatly damaged. There are also some colleges and universities to assess the teaching quality of teachers simply by students' evaluation of teachers' teaching classes, and also according to the students' scoring of teachers, the implementation of the whole school ranking, for falling in the last 20 teachers in the whole school warning, warning; At the same time, teachers are also required to make a written summary of the reasons for poor teaching quality and measures for future improvement. It is one-sided and can not objectively reflect the real teaching level of teachers. In the evaluation process of teachers' teaching, students often score according to their interest in this course and their preferences for teachers. The evaluation standard of students is not objective, but the school can not control the evaluation of students. Therefore, students' evaluation of teaching scores can only be used as a standard to assess teachers' teaching quality, but not as the only standard or the main standard. Schools should attach importance to teachers' teaching process and peer evaluation as well as teachers' teaching achievements.

4.3. The Examination Method Is Not Scientific

Some colleges and universities evaluate teachers' teaching quality simply by students' evaluation of teaching points, and so on. These assessment methods are one-sided and unscientific. First of all, there are differences between the nature of classes, between basic courses and specialized courses, and between theoretical courses and practice courses. Therefore, the same standard cannot be applied to the teacher's teaching class for "one-size-fits-all" evaluation. In the teaching process of teachers, there are a lot of theoretical courses, the content of basic courses is relatively boring, but this is the most basic required courses of this major. For this kind of course, when the school arranges teachers to attend classes, it is generally a large classroom teaching, with about 100 to 200 students in a classroom, the teaching effect can be imagined. Similarly, for some practical courses and courses with strong operability, students are very interested, and most of them are taught in small classes. Teachers are able to give lectures and answer questions to students fully, so that students also have a strong interest in this kind of class, so students' evaluation of this kind of class will naturally be higher than that of other classes. Therefore, it is obviously unscientific and unfair to evaluate all classes of teachers simply by an assessment method.

4.4. The Feedback of Assessment Results Is Not Timely

Teaching assessment is a means, its fundamental purpose is to provide basis for the appointment, promotion, reward and punishment of teachers, encourage and guide teachers to perform their job duties better, and constantly improve their comprehensive quality. From this point of view, the assessment results should be timely feedback to teachers, so that teachers can timely recognize the shortcomings and problems in the teaching process, so as to further correct. But at present, most college evaluation information can not be timely and accurate feedback or feedback is very simple. The reason is very simple, there is a misunderstanding of the purpose of assessment in schools. The school pays more attention to the assessment results, ignores the assessment process, and does not put forward improvement measures and suggestions for the problems in the assessment. It is purely assessment for the sake of assessment, and even only takes the assessment results as the basis for granting teachers' allowances. This completely deviates from the purpose of teaching assessment. This is not conducive to mobilize teachers' teaching enthusiasm, and is not conducive to the overall work of the school and the realization of school-running goals. In this way, after the assessment, the teaching level of teachers with problems is still not improved, teachers with high teaching quality can not be timely encouraged, teachers will have negative and slack psychology, thus affecting the overall healthy development of the school. Timely feedback and, therefore, it is very important to the rational use of assessment results, only to the assessment results in a timely manner with the appraisal object timely communication, and timely feedback the inspection results, to guide the teachers help identify the problems and defects existing in the teaching process, further defined the direction of future improvement, in order to constantly improve the quality of teaching, achieve the purpose of teaching evaluation.

5. Improvement of Teaching Assessment and Evaluation System for College Teachers

In order to improve teaching quality and improve teachers' teaching level, it is necessary to establish and perfect teachers' teaching assessment and evaluation system, adhere to the teaching quality annual report as the basis, reflect teachers' problems and deficiencies in the teaching process truly and objectively, correct and improve them in time, and promote teachers' teaching literacy to improve comprehensively.

5.1. Adhere to the Principal Position of Teachers, Establish A Teacher Development-Oriented Assessment Concept

Teachers are in a dominant position in the teaching assessment system. This philosophy cannot be changed. Otherwise, the evaluation mechanism will lose its significance and can not really achieve the purpose of assessment. In order to realize the principal position of teachers in the process of assessment and evaluation, the assessment and evaluation concept based on teacher development must be established.

To establish an effective, reasonable and scientific evaluation system for teachers, first of all, evaluators should change their ideas, establish a people-oriented, teacher-oriented evaluation concept, and adhere to the principal status of teachers in the evaluation. In the evaluation system, teachers are not only the participants, but also the subject of evaluation. Evaluators can only be collaborators and interlocutors, not judges on high. Whether the evaluator or the teacher, the assessment is for a goal. That is, through assessment and evaluation, teachers can realize their own problems and deficiencies in the teaching process, correct and improve, in order to further improve the quality of teaching, and truly achieve the school's goals.

5.2. Establish A Multi-index Evaluation System Based on Teaching Quality Annual Report

The teaching assessment and evaluation system of university teachers is a comprehensive system, which provides first-hand information for evaluation according to the basic data and materials in the annual report of teaching quality. According to the basic data of teaching quality annual report, appropriate evaluation index system should be established. This takes into account both quantity and quality, as well as factors such as peer review and social impact. In the evaluation process, we can refer to the "360 degree evaluation method" in enterprise management to improve the existing teacher teaching evaluation system. The evaluation indicators should be considered from the aspects of evaluators, teachers, peers, experts, students, social influence, etc. The scientific nature of the indicators should be taken into account as well as the availability of index data.

5.3. Adhere to the Evaluation Method Combining Qualitative and Quantitative Assessment

Qualitative assessment is an assessment process and method that reflects the face of the person being tested in essence, while quantitative assessment is an assessment method that reflects the part or whole face of the person being tested relatively accurately in quantity. In the course of teachers' teaching assessment, teachers should be assessed in all directions according to the "360 degree evaluation method". Only by carrying out comprehensive assessment, can teachers pay attention to their own problems and improve their teaching level and teaching accomplishment. In the process of assessment and evaluation, because individual indicators cannot be quantified, qualitative assessment can only be used for evaluation. For example, teachers' teaching knowledge, teaching ability, work performance, etc., can not be assessed by quantitative indicators, so we can only use the "brainstorming method" to make objective evaluation of these aspects of teachers. The teaching performance of teachers can be evaluated by quantitative assessment. Evaluators can collect data according to the main observation points in the evaluation index system, set corresponding weights for each index by using the analytic hierarchy process, and calculate the evaluation scores of teachers through the weighted summation method, so as to determine the teaching performance of teachers. According to the different proportions of qualitative assessment results and quantitative assessment results, the weighted sum can get the final teaching assessment results of teachers. Quantitative assessment is objectively persuasive. Only by sticking to quantitative assessment

as the basis and qualitative assessment as the purpose can we give full play to the role of assessment and evaluation system and ensure the fairness of assessment and evaluation results.

5.4. Classified Management, Classified Evaluation

At present, most colleges and universities are developing towards comprehensive colleges. That is to say, a university will no longer be a professional one, it will contain many subjects of different majors. Due to the differences in nature, level of development and quality of students of various disciplines, it is impossible to adopt a unified standard to evaluate teachers' teaching achievements. Science and engineering courses have their own characteristics, and teachers are definitely different from humanities and social science courses in choosing teaching methods. At the same time, students' ability to accept knowledge in class also varies. Therefore, for science and technology courses, we should focus on students' mastery of classroom knowledge; For humanities and social science courses, teachers are required to have higher teaching skills, teaching methods and other aspects.

6. Measures to Realize Teaching Quality Evaluation System Based on Big Data Mining

6.1. The Whole Process of Data Collection in the Teaching Process

In order to successfully construct the teaching quality evaluation system based on big data mining, it is necessary to collect the data in the whole teaching process and ensure the normalization of the data collection in the whole process In the process of practice, the whole process of teaching data collection should be regarded as the focus of teaching management. Afterwards, the Internet is used to collect the data generated by teachers and students in the whole teaching process, so as to ensure the comprehensive accuracy of data collection, so as to provide a more valuable basis for teaching quality evaluation. This point is the key to ensure the accuracy of teaching quality evaluation.

6.2. Scientific Integration of Data in the Teaching Process

After the whole process of teaching data collection, it is necessary to carry out scientific integration management of these data. In view of this point, on the one hand, it is necessary to strengthen the coordination and cooperation between various departments in colleges and universities to ensure that all departments in colleges and universities are involved, so as to form a systematic information data integration mechanism; On the other hand, it is necessary to check, screen and analyze a large number of collected data, so as to mine out the data of application value for teaching quality evaluation, and classify and store them.

6.3. Make Effective Application of Data in Teaching Process

The value of the whole teaching quality evaluation system lies in the effective application of the above data results obtained through integrated analysis to teaching quality evaluation. First of all, integrated analysis of teaching big data should be integrated into the teaching quality evaluation system to improve the construction of the rating system, so as to achieve comprehensive, comprehensive and effective evaluation of teaching quality. Secondly, based on the feedback information of the evaluation system, diversified big data mining applications are used to improve teachers' teaching design and manage students' learning. In order to improve the enthusiasm of each participant in the teaching process, give full play to the real efficiency of the teaching quality evaluation system fundamentally.

7. Conclusion

The application value of data mining technology in higher vocational teaching evaluation system is very high. The construction of teaching evaluation system based on data mining is the key measure to promote higher vocational teaching quality, objectively reflect teaching problems and realize the core quality education. Therefore, we should strengthen the application effect of data mining in teaching evaluation system. In the construction of the teaching quality rating system, big data mining is introduced to collect, process and analyze the information in the whole teaching process through relevant technologies, and the rational data obtained from big data analysis is used to carry out comprehensive and comprehensive evaluation of teaching quality. In order to ensure the scientific and effective teaching quality evaluation system, improve the teaching quality of colleges and universities, to ensure the teaching effect.

Acknowledgments

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