Comprehensive Online Teaching Quality Monitoring and System Research in Local Application-Oriented Undergraduate (LAOU) Colleges and Universities in Inner Mongolia

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Abstract: LAOU colleges undertake the task of cultivating applied talents and provide a steady stream of intellectual support for local economic development. Establishing a reasonable internal quality assurance system for talent training in LAOU colleges is to improve the quality of applied talent training in my country, and it is also a realistic need to promote the development of local industrial economy. The main purpose of this paper is to study the online teaching quality monitoring and system of LAOUs in Inner Mongolia. This paper mainly analyzes the characteristics of total quality management, and analyzes the establishment of the system, teaching evaluation and supervision. Experiments show that, in terms of quality standards, through a survey on the recognition of teachers' teaching quality standards, it is found that teachers generally believe that the quality standards of teaching links are reasonable, and more than 80% of teachers believe that the quality standards of theoretical and practical teaching links are reasonable.

1. Introduction

Both domestic and foreign colleges and universities have conducted in-depth research in this field in order to improve the teaching methods of schools. Northern Minzu University has also joined the flood of online education, researching online teaching methods suitable for its own school conditions and school conditions, realizing online and offline co-teaching, and helping students improve the quality of learning. Centennial plan, education-oriented, education-oriented plan, talent-oriented. Optimizing the top-level design of talent training in colleges and universities and improving the talent training capacity of colleges and universities is an important project to realize the great rejuvenation of the Chinese nation, and it is also an important challenge for the modernization of higher education. Establishing and improving the internal quality assurance system of colleges and universities is the fundamental guarantee for the improvement of the quality of personnel training in my country's colleges and universities [1-2].

In the research on applied undergraduates, Sanchez pointed out: "Continuing education in colleges should shift from theoretical to applied; from income-generating to quality-oriented; from

single-closed to flexible and open [3]. Universities should use their own resources to create It is a cultural brand that is localized and popular, and can be liked and accepted by the majority of migrant workers. The standard for the successful transformation of high schools is whether they can meet the needs of economic and social development and promote their development. Meet the needs of accepting continuing education." Mitter mentioned that transformation and development should focus on application: the cultivation of continuing education talents in high schools should focus on improving the social adaptability of high school students, and cultivate applications that meet the needs of regional economic and social development talents [4]. You can learn from the concept of recovery - improving employability proposed by European and American countries. To cultivate students' ability to solve practical problems, so as to promote the development of their necessary team awareness, professional ability and comprehensive quality.

This paper mainly studies the online teaching quality monitoring and system of LAOU universities in Inner Mongolia. This paper analyzes the characteristics of education quality management in application-oriented undergraduate universities, analyzes the principles of talent training goals in LAOU universities, and analyzes system design and functional requirements., put forward the design of the fitness function of the relevant test papers, put forward a sound teaching evaluation and supervision guarantee, and made a questionnaire analysis on the training of applied talents and quality standards.

2. System Design Research

2.1 Features of Total Quality Management

(1) All-round. Total Quality Management is the management of all elements. Total quality management requires oversight of all elements of operation that affect product quality. However, all-round factor management does not mean that the focus is not divided and the power is balanced. On the contrary, while grasping the overall situation, select key points and do a good job in managing the main factors affecting quality.

(2) The whole process. Total quality management is the management of the whole process of work. Each link will affect the quality of the product. Only by monitoring each link with scientific management methods can we eliminate hidden quality risks and ensure product quality.

(3) Full participation. Total quality management is the management that all employees participate in to achieve quality goals. The application of total quality management in higher education management cannot only be controlled by leaders and functional organizations. Leaders, faculty and students must act together to establish quality awareness and shoulder corresponding quality tasks.

(4) Diversification of management methods. Quality management is a management science involving multiple disciplines. It cannot rely only on a single management method for quality management, but should use multidisciplinary knowledge and comprehensive methods for quality management.

The application of total quality management theory in higher education makes the quality assurance system of higher education break through the traditional situation that the party and government leaders of colleges and universities take the lead. Advocate full participation, so that the school leadership, managers, teachers, students and society become the direct stakeholders of higher education management, and jointly participate in the quality management of higher education; Equally important position, pay attention to social needs and students' satisfaction with teaching activities; expand higher education quality management to all aspects and links of higher education management, the school pays attention to the systematic collection and scientific analysis of education quality information data, to achieve higher education The whole process of quality

assurance. Implement the PDCA management model and implement a closed-loop system of planning, implementation, monitoring, feedback, and improvement [5-6].

Based on the theory of total quality management, an all-round, whole-process, and full-staff participation internal quality assurance system will be constructed, which will ultimately promote the continuous improvement of the educational quality of LAOU colleges and universities.

2.2 Principles for Setting Goals for LAOU colleges:

(1) Based on local development needs. One of the purposes of talent training in LAOU colleges is to cultivate applied talents for local regional economic development. The regional characteristics of talents are extremely obvious. Therefore, LAOU colleges should understand that their primary task is to cultivate applied talents for the local area. In the formulation of talent training goals, they should not only rely on local regional economic characteristics, but also insist that personnel training serve the local economy [7] -8].

(2) According to the school's own school positioning. What kind of school does what kind of education, LAOU colleges talent training target positioning must be established on the basis of their own school-running positioning and school-running ability, according to their own development characteristics, combined with the school's school-running positioning.

2.3 Develop Perfect Quality Standards

The quality standard is the unified standard made by the school on the expected effect of educational activities. The quality standard of LAOU colleges consists of two parts. One part is the unified standard on the quality of personnel training stipulated by the Ministry of Education; the other part is the school. According to the requirements of the Ministry of Education [9-10].

In the establishment of quality standards, we should pay attention to the comprehensiveness of quality standards. Quality standards should cover all aspects of teaching activities, and should focus on academic standards in terms of standards, and more on application in degree-granting standards.

In terms of discipline and professional standards, corresponding standards should be formulated in terms of curriculum setting, professional construction, and academic goals. LAOU colleges should combine the development of local enterprises in the professional setting, increase the proportion of practical courses in curriculum setting, and cultivate applied talents who have both solid professional knowledge and practical ability in terms of academic goals.

In terms of moral quality standards, LAOU colleges and universities should pay attention to the cultivation of moral literacy in the process of talent training, and having good moral literacy is the basis for success.

The quality standards of the teaching process include the unified standards for teachers' teaching content and teaching methods, and the formulation of standards for classroom teaching and practical teaching. The quality standard of teaching conditions stipulates the use of school funds, the construction of teaching infrastructure, the construction and use of experimental training bases, and the construction of teaching staff. Evaluate teaching effects and formulate corresponding quality standards to ensure effective teaching supervision and evaluation [11-12].

2.4 Design of Fitness Function of Group Rolls

The fitness function reflects the adaptation of the individuals selected by the genetic algorithm to the research problem. In this paper, by assuming the attributes of the test papers, the constraints of designing the test papers contain a total of 6 indicators. Since the improved genetic algorithm satisfies some constraints at the beginning of the initial population design (the test paper contains

the type of test questions and the number of test questions), the remaining indicators affecting the fitness function are mainly the difficulty constraints of the test paper and the percentage of knowledge points. Constraints, test paper discrimination and overall test paper exposure constraints. Set the weights of these four influences as Ti ($i\leq 4$), and take the absolute value operation for the difference between the expected value and the actual value of different group constraints, and the difference result is represented by ωi ($i\leq 4$). Then the specific calculation formulas of the objective function g in this paper are as follows (1) and (2):

$$g = \sum_{i=1}^{4} T_i \cdot \omega_i \tag{1}$$

$$\sum_{i=1}^{4} T_i = 1 \tag{2}$$

It can be seen from the formula (2) of the adaptive function that the smaller the result of the calculation of the g value of the grouping objective function, it indicates that the result of the individual evolution is more in line with expectations. Therefore, in order to obtain the optimal individual solution of the test set, the objective function g needs to be as small as possible in the actual test set process. At the same time, in order to enable the fitness value to positively reflect the evolution of individuals, and to ensure that the time complexity of the fitness function calculation is small, this paper designs the calculation formula of its relationship with the fitness function f based on the objective function g of the test problem. As follows (3):

$$f = \frac{1}{1+g} \tag{3}$$

Among them, f is the fitness function of the quiz problem, and g is the objective function of the quiz problem.

3. System Experimental Research

3.1 Functional Design

In view of the shortcomings of the existing teaching level, starting from the actual school conditions and learning conditions, the actual needs of teachers and students in the online teaching process are studied and analyzed, and the functional framework of the online teaching system based on the improved genetic algorithm is summarized and designed as shown in Figure 1 shown:
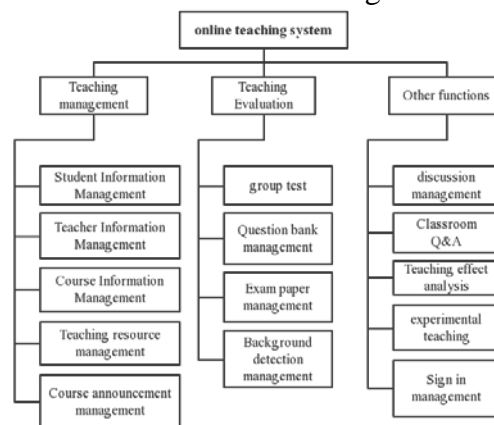

Figure 1: Functional framework of online teaching system

From the functional frame structure of the online teaching system, the specific functional requirements of the system are summarized as follows:

(1) Functional requirements of the teaching management module: The specific content is: labeling and classifying teaching videos, teaching courseware, etc. Among them, the label attribute division adopts a hierarchical setting. For example, you can set several first-level labels: topic, application, knowledge point difficulty, popularity, and professional direction, etc., and then subdivide several labels under the first-level label. For example, the first-level label knowledge point difficulty can be including: easy, normal, medium, difficult, extremely difficult five secondary labels. Teachers accurately label and classify different teaching resources, and according to the label classification results, it is convenient for students to accurately search and learn teaching resources in the classification of their own needs, so as to achieve rational use of teaching resources;

(2) Functional requirements of the teaching evaluation module: The function of this module mainly includes two aspects. One is to use an improved genetic algorithm (IGA) to realize the system's intelligent paper grouping. By improving the genetic algorithm combined with the actual situation, it can effectively solve the multi-condition constraint optimization problem of the system intelligent test paper, so as to realize the real: a reasonable question type, covering knowledge points and things, moderate difficulty coefficient, and The test papers that match the expected teaching objectives, have a high success rate in grouping, and have strong quality and practicality help teachers to conduct targeted pre-class tests and organize online tests. Second, it can monitor and display students' learning of resources, exams, and classroom check-ins in the background, and feed back the data results to teachers to help teachers accurately grasp their learning.

(3) Other functional requirements: The functions of this module mainly include discussion management, classroom Q&A, teaching effect analysis, experimental teaching and sign-in management, etc. These functions are used to cooperate with the use of the main functional modules of the online teaching system.

Different user roles in this system have different operating rights to the system. For example, students can conduct course study and online examinations in the system, teachers can conduct course management and examination management, etc., and administrators can conduct log management, etc.

3.2 Improve Teaching Evaluation and Supervision

(1) Encourage all staff to participate in quality supervision and management. Generally speaking, the management of the school is in charge of the top management of the school. The management of the school is responsible for the management of the whole school. Individuals such as teachers and students only obey the management mechanically in the management process. Although this management mode ensures the orderly progress of the teaching work to a certain extent, it ignores the opinions of the main participants in the teaching process such as teachers and students on the improvement of the teaching work, and does not involve all staff in the management of the teaching work. Secondly, the quality assurance of teaching cannot be accomplished by the leader alone. The quality assurance of teaching requires the participation and efforts of all participants in teaching activities, including managers, teachers, and students. Only by establishing a quality culture and making students realize that the improvement of teaching quality by quality evaluation and supervision is closely related to themselves, and that the improvement of teaching quality is helpful for improving their own ability, can students voluntarily participate in the school's teaching and evaluation supervision. Go to work.

(2) Establish a comprehensive quality evaluation and supervision system. LAOU colleges should

establish a quality supervision system for the whole process, strengthen the quality supervision of the teaching process and student training process, establish a reasonable reward and punishment mechanism, and reward teachers with excellent teaching performance in the teaching process. Teachers should deal with it, promote the improvement of teaching work and strengthen teachers' attention to teaching work. The evaluation and supervision of teaching should not only stop at theoretical teaching, but also the evaluation of practical teaching and the cultivation of practical ability should also be included in the assessment standards.

(3) Strengthen the collection of teaching information. To ensure the smooth operation of the teaching evaluation and supervision mechanism, we must first strengthen the collection of teaching information. Collect the information of each teaching link, and obtain the feedback and evaluation of teachers and students on the talent training process in time. Through the collection and analysis of teaching information, we can understand the specific implementation effect of the talent training process, dynamically adjust the deficiencies in the talent training process, ensure the quality of talent training, and cultivate application-oriented talents that truly meet the needs of society.

Today is an information age with developed information, and people's communication has become more convenient because of the existence of the Internet. LAOU colleges can use the efficient and convenient information technology to build an internal quality assurance system for talent training. Using the Internet to build a teaching feedback system will help teachers and students to reflect their opinions and suggestions more conveniently, and also reduce the workload of the school in information collection and statistics. Teachers and students can also keep abreast of the school's teaching situation and evaluation results. You can use network tools, such as WeChat public account, Weibo, etc. to collect teachers and students' feedback on teaching and publicize the evaluation results. Teachers and students can directly communicate with the school's party and government leaders through network tools, which is convenient and quick, and enables all staff to participate in talents. Cultivate the internal quality assurance system.

4. Questionnaire Analysis

4.1 Talent Training Goals

Through a survey of college teachers and students' recognition of the school's talent training goals, the following data were obtained shown in Table 1:

Table 1: Questionnaire for teachers and students' recognition of talent training goals

Options	students	teachers
fully approved	32.69%	40.2%
Compare approval	51.16%	50%
It doesn't matter	6.38%	6.86%
not very recognized	7.45%	1.96%
denied	2.32%	0.98%

Analyzing the data in Figure 2, it can be found that 32.68% of students fully agree with the talent training goals, and 51.16% of them agree; 40.2% of teachers think that the talent training goals are very reasonable, and 50% of them think that they are relatively reasonable. The remaining 16.15% of the students and 9.8% of the teachers considered the school's talent training goals to be average or not recognized. From this, it can be found that the overwhelming majority of teachers and students agree with the school's talent training goals. It can be concluded that the school's talent training goals are recognized by students and teachers, and the formulation is more reasonable.
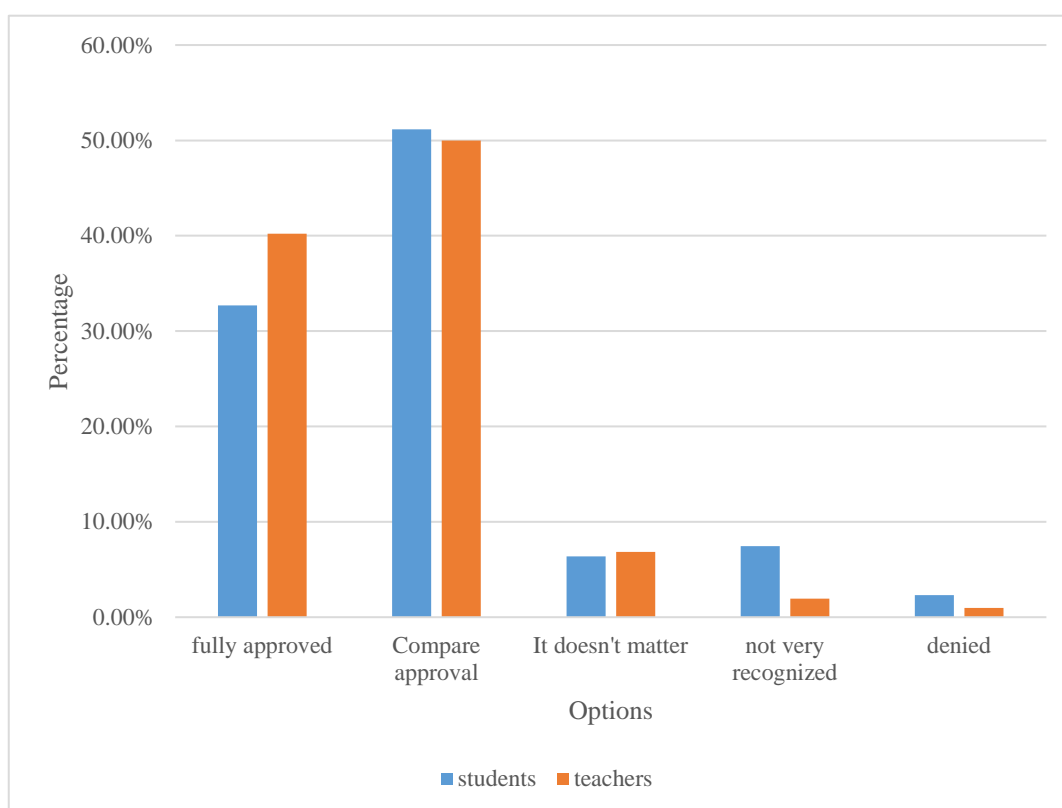
Figure 2: Analysis of teachers and students' recognition of talent training goals

A survey of student groups found that students attach great importance to the cultivation of theoretical knowledge, vocational ability, innovation ability, and practical ability, among which the highest degree of emphasis is on comprehensive vocational ability, reaching 78.63%. This shows that students generally agree with the school's goal of cultivating applied talents. At the same time, through the investigation, it was found that the school puts the cultivation of applied talents in the first place, and at the same time takes into account the cultivation of students' professional theoretical knowledge, comprehensive professional ability, innovative spirit and practical ability. This coincides with the aspects that students should pay attention to for talent training goals. The school's talent training goals are more consistent with the standards in the minds of students. As shown in table 2.

Table 2: Aspects that students believe that the training process of applied talents should focus on training

Options	Proportion
Professional theoretical knowledge	64.8%
Comprehensive professional ability	78.63%
Creativity	66.63%
practical problem solving skills	74.95%
other	4.35%

4.2 Quality Standards for Talent Training

In an interview about quality standards, a school leader mentioned that the school-level quality standards should be based on the scope of education quality standards stipulated by national policies and the framework of education quality standards formulated by relevant industries to formulate

reasonable personnel training according to their own actual conditions. At the professional level, according to the needs of social economy and local enterprises, the requirements that must be met to meet different majors, disciplines and courses are proposed, and the formulation of talent training norms reflects scientific, rational and diverse. According to the different orientations of talent training in different majors and different disciplines, a variety of professional quality standards have been established. Pay attention to the cultivation of students' practical ability and work ability. At the academic level, the school-level academic standards that are suitable for the school itself are formulated according to the specific situation of the school. It can be seen that the school has formulated quality standards covering all aspects of teaching activities, and has made detailed standard positioning for all aspects, providing a reliable basis for teaching quality monitoring and evaluation.

Most of the respondents believed that these quality standards are closely integrated with the talent training goals of LAOU colleges. Improve the quality of talent training. The specific table 3 is as follows:

Table 3: Teachers' questionnaire on the reasonableness of the quality standards in the theoretical and practical teaching links

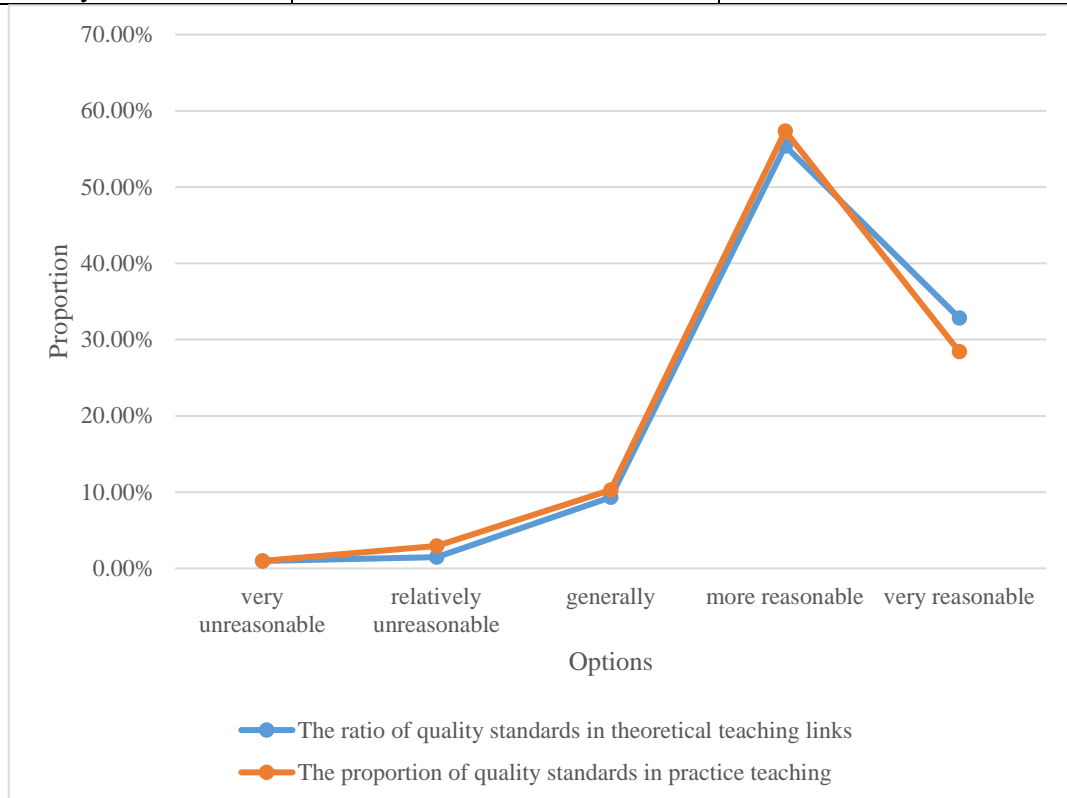| Options	The ratio of quality standards in theoretical teaching links	The proportion of quality standards in practice teaching
very unreasonable	0.98%	0.98%
relatively unreasonable	1.47%	2.94%
generally	9.31%	10.29%
more reasonable	55.39%	57.35%
very reasonable	32.84%	28.43%

Figure 3: Analysis of teachers' reasonableness to the quality standards of theoretical and practical teaching links

As can be seen from Figure 3, in terms of quality standards, through a survey on the recognition of teachers' teaching quality standards, it is found that teachers generally believe that the quality standards of teaching links are reasonable, and more than 80% of teachers believe that theoretical and practical teaching links. The quality standards are set reasonably. However, 2.45% of the teachers still think that the quality standard of theoretical teaching is unreasonable; in the quality standard of practical teaching, 3.92% of teachers think that the setting is unreasonable.

5. Conclusions

Based on the development and experience of domestic and foreign application-oriented universities, first, from the government level, to strengthen legislative construction, it is far from enough to rely on the development of local governments or institutions themselves. It needs to be done at the national level. Perfect planning and design. The perfection of the law is of great significance in guaranteeing the source of funds for the transformation of colleges and in their reasonable distribution. Second, promote the development of the school-enterprise cooperation model. Thirdly, as far as the transformation colleges are concerned, they must have a clear positioning and training objectives. They cannot mix training talents with research talents and applied talents, and don't blindly pursue the construction of a comprehensive university. According to the local market characteristics and industrial chain structure, a targeted professional system is established to promote the construction of training bases. In addition, whether it is the student evaluation system or the construction of teachers, the training of practical talents should be the guiding ideology, and a scientific evaluation system and a double-qualified team development and construction system should be established.

Acknowledgements

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