Research on the Construction of a Dynamic Cyclic Model of "Evaluation - Feedback - Improvement"

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ABSTRACT

In the current era of continuous development and transformation in the field of education, the improvement of teaching quality has become a core issue of concern for various colleges and universities. This study focuses on constructing a dynamic cyclic model of "evaluation - feedback - improvement", aiming to provide a scientific, systematic, and operable methodology for the continuous improvement of educational and teaching quality. By comprehensively analyzing the "4644" quality assurance system for graduate education at Shandong Technology and Business University and combining it with the evaluation of undergraduate education and teaching review, this paper explores the theoretical basis, construction elements, implementation path, and application of the model in different educational levels. Research has shown that this dynamic cyclic model can effectively integrate resources from all parties, form a continuous improvement loop, significantly improve teaching quality, and provide useful references for teaching reform in various colleges and universities.

Keywords: *Evaluation - feedback - improvement, Dynamic cyclic model, Teaching quality, Educational reform.*

1. INTRODUCTION

With the increasing demand for high-quality talents in society, the importance of education and teaching quality has become increasingly prominent. The traditional methods of ensuring teaching quality often suffer from problems such as incomplete evaluation, untimely feedback, and inadequate improvement measures, making it difficult to meet the requirements of the development of education in the new era. Therefore, building a dynamic cyclic model that can achieve continuous improvement has become an urgent task.

The "evaluation - feedback - improvement" dynamic cycle model is guided by the theory of Total Quality Management and the idea of continuous improvement, emphasizing the acquisition of various types of information in the teaching process through multidimensional evaluation. Through effective feedback mechanisms, the information is transmitted to relevant parties, and targeted improvement measures are formulated and implemented, forming a continuous and upward cycle.

Shandong Technology and Business University has accumulated rich experience in quality assurance in graduate and undergraduate education. Its "4644" quality assurance system and undergraduate education teaching review and evaluation practices provide valuable practical basis for the construction of the "evaluation - feedback - improvement" dynamic cyclic model. This study will integrate these experiences and practices to construct and explore a dynamic cyclic model of "evaluation - feedback - improvement" in depth.

2. THEORETICAL BASIS OF THE DYNAMIC CYCLIC MODEL OF "EVALUATION - FEEDBACK - IMPROVEMENT"

2.1 Total Quality Management Theory (TQM)

The theory of TQM emphasizes the participation of all employees, whole process management, and continuous improvement, which is highly consistent with the core idea of the "evaluation - feedback - improvement" dynamic

cyclic model. In the field of education, TQM means that the management of teaching quality is integrated into all aspects from enrollment to graduation, involving all relevant personnel such as teachers, students, and administrators. By quality control and evaluation of every detail in the teaching process, problems can be identified and improved in a timely manner, thereby achieving a comprehensive improvement in teaching quality.

The "six in one" teaching quality assurance system constructed by Shandong Technology and Business University covers quality decision-making system, quality standard system, quality support system, quality evaluation system, quality monitoring system, and quality improvement system, which is the specific application of TQM theory in the education and teaching of the university. This system ensures that the management of teaching quality covers all aspects and links of teaching, providing solid theoretical support and practical examples for the construction of the "evaluation - feedback - improvement" dynamic cyclic model.

2.2 Management by Objectives (MBO) Theory

The theory of MBO emphasizes breaking down the overall goals of an organization into sub goals for each department and individual, and evaluating performance by clarifying goals and assessing the degree of achievement of those goals. In the "evaluation - feedback - improvement" dynamic cyclic model, goal management theory provides guidance for setting evaluation indicators and determining improvement directions.

2.3 "PDCA" Cycle Theory

The "PDCA" cycle theory is a scientific procedure for quality management that follows the sequence of planning, execution, inspection, and action, and continuously cycles. It is the foundation and basis of quality assurance theory. The dynamic cyclic model of "evaluation - feedback - improvement" largely draws on the idea of the "PDCA" cycle, and the overall operation process of the model also reflects the cycle of planning, action, inspection, and correction. (As shown in "Figure 1")

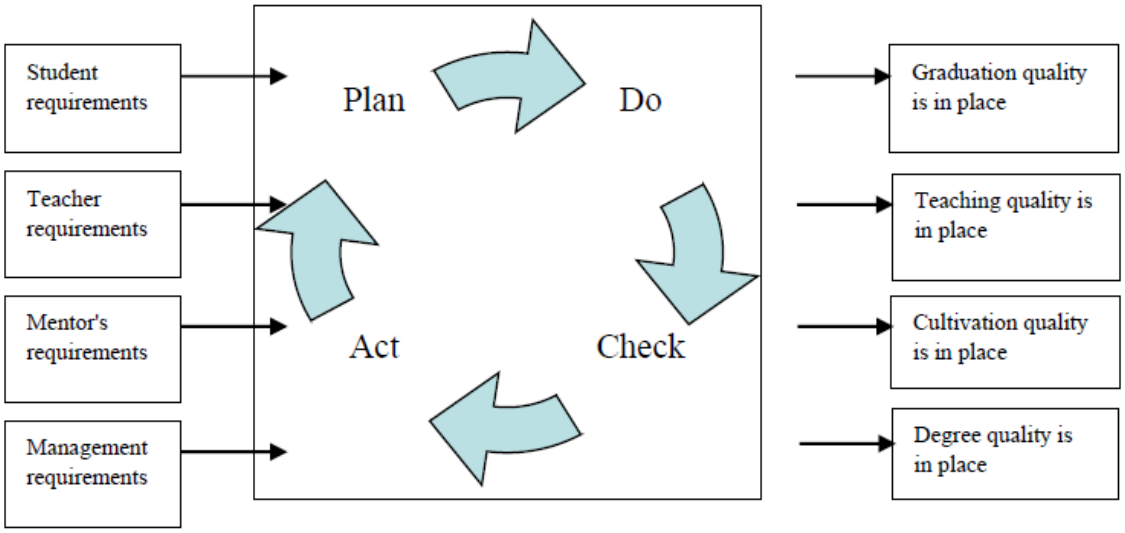

Figure 1 Application of the "PDCA" cycle theory in educational quality.

3. THE CONSTRUCTION ELEMENTS OF THE DYNAMIC CYCLIC MODEL OF "EVALUATION - FEEDBACK - IMPROVEMENT"

The model is centered around "problem orientation" and characterized by "dynamic loops", forming a closed-loop structure of "evaluation - feedback - improvement" (see "Figure 2")

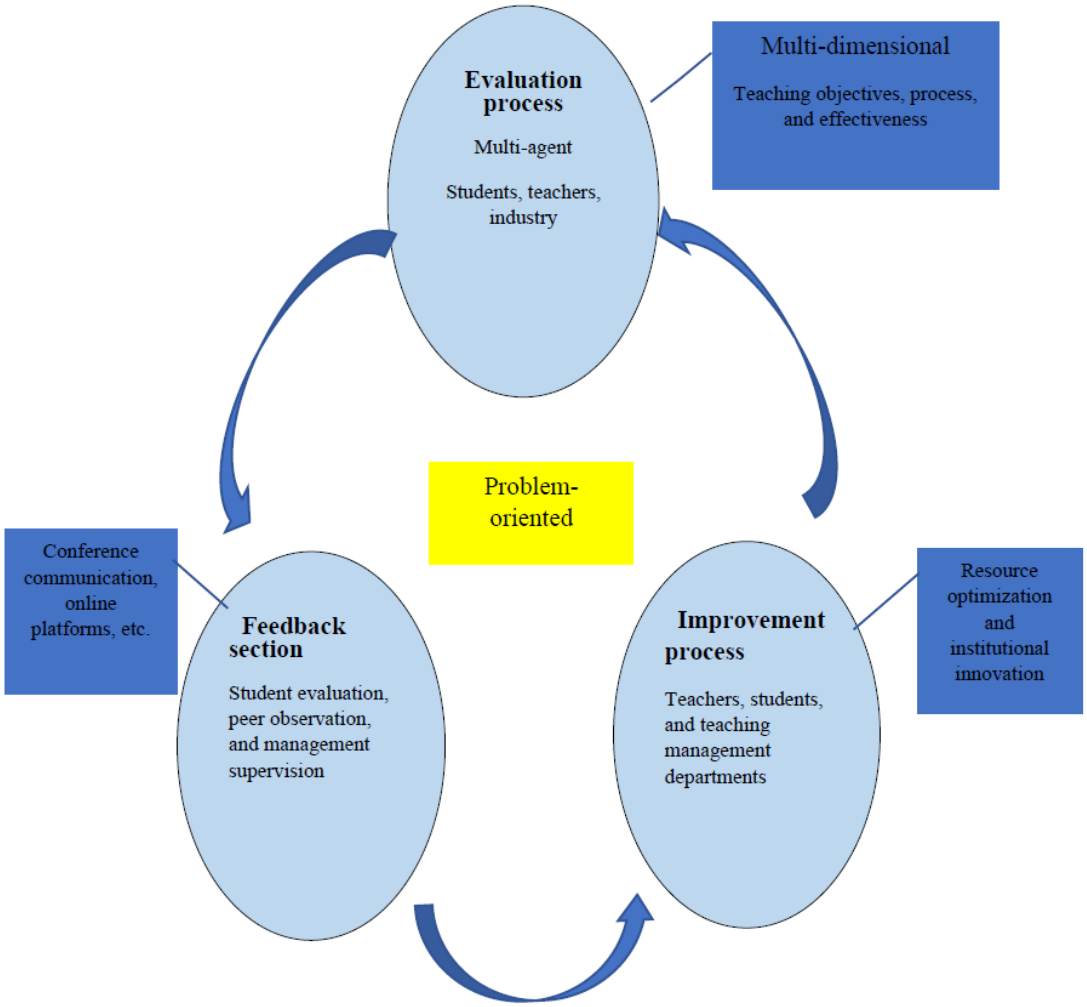

Figure 2 Dynamic model information intersection mode diagram.

3.1 Evaluation Process

Evaluation is the foundation of the "evaluation - feedback - improvement" dynamic cyclic model, which comprehensively and objectively collects information from the teaching process through multidimensional, multi-party, and multi way evaluation, providing a basis for subsequent feedback and improvement.

3.1.1 Evaluation Subject

The evaluation subject should be diversified, including students, teachers, managers, external experts, employers, etc. Students are direct participants in teaching, and their evaluations of course content, teaching methods, teacher attitudes, and other aspects have important reference value; As implementers of teaching, teachers are able to reflect on and evaluate their own teaching process and peer teaching situations; Managers evaluate teaching management and resource allocation from a macro perspective; External experts and employers can evaluate the quality of teaching and the effectiveness of talent cultivation from an external perspective.

3.1.2 Evaluation Content

The evaluation content should cover all aspects and elements of the teaching process, including teaching objectives, content, methods, processes, effects, and resources. The evaluation content should focus on different levels and types of education.

For example, in the "4644" quality assurance system of Shandong Technology and Business University, there are six basic points of quality assurance. In undergraduate education, attention

can be paid to curriculum construction, practical teaching, classroom teaching, and other aspects.

3.1.3 Evaluation Method

The evaluation method should be flexibly selected based on the differences between the evaluation content and the subject, using diverse means. Common types include questionnaire surveys, classroom observations, interview communication, exam assessments, and work analysis.

Questionnaire surveys can collect opinions from students and teachers on a large scale; Classroom observation can directly understand the actual situation of the teaching process; Interviews can provide a deeper understanding of the thoughts and feelings of specific groups; Exam assessment is an important way to evaluate students' learning effectiveness; Work analysis is suitable for evaluating students' practical and innovative abilities. Shandong Technology and Business University evaluates undergraduate teaching through spot checks on course papers, graduation projects (papers), lesson plans, and other methods. At the same time, interviews with teachers and students are conducted, and multiple evaluation methods are comprehensively used.

3.2 Feedback Section

Feedback is the bridge connecting evaluation and improvement. Timely, accurate, and effective feedback can ensure that the evaluation results are fully utilized and provide clear direction for improvement work.

3.2.1 Feedback Object

The feedback object should include all subjects related to teaching, such as teachers, students, managers, teaching departments, etc. The content and methods of feedback should vary for different feedback recipients.

Feedback to teachers should focus on their strengths and weaknesses in the teaching process, helping them improve their teaching methods and enhance their teaching level; Feedback to students can include issues with their learning outcomes and methods, guiding them to adjust their learning strategies; Feedback to managers and teaching departments should involve issues related to teaching management, resource allocation, etc., providing a basis for formulating policies and improving management.

3.2.2 Feedback Content

The feedback content should be based on the evaluation results, targeted and constructive. Not only should the existing problems be pointed out, but also the causes of the problems should be analyzed, and specific improvement suggestions should be proposed.

The feedback content should avoid being too general and abstract, and should be specific to courses, teaching processes, or management procedures. For example, regarding the issue of a single teaching method for teachers, feedback should indicate which courses have this problem and which diverse teaching methods can be adopted.

3.2.3 Feedback Methods

Feedback methods should be flexible and diverse to ensure that feedback information can be transmitted to the feedback recipient in a timely manner. Common feedback methods include written reports, meeting discussions, individual conversations, and online platform releases.

For example, Shandong Technology and Business University regularly releases the "Teaching Supervision Briefing" to provide feedback on the problems and suggestions discovered during teaching supervision to relevant parties, which is an effective feedback method.

3.3 Improvement Section

Improvement is the core goal of the "evaluation - feedback - improvement" dynamic cycle model. Based on the results of evaluation and feedback, practical and feasible improvement measures are formulated and implemented to solve problems in teaching and improve teaching quality.

3.3.1 Improvement Subject

The improvement subject corresponds to the evaluation subject and feedback object, including teachers, students, managers, teaching departments, etc. Each entity should take corresponding improvement measures within their scope of responsibility based on the feedback information.

3.3.2 Improvement Measures

Improvement measures should be targeted and operable, and can effectively solve the problems found in evaluation and feedback. Improvement measures can include teaching method reform, curriculum content adjustment, teaching resource construction, and management system improvement.

3.3.3 Improvement Evaluation

Improvement evaluation can be conducted through re-evaluation, follow-up investigation, and other methods. For example, after implementing teaching method improvement measures, the effectiveness of the improvement measures can be judged by re-evaluating the classroom teaching effect, comparing the student satisfaction and academic performance before and after the improvement.

4. IMPLEMENTATION PATH OF THE DYNAMIC CYCLIC MODEL OF "EVALUATION - FEEDBACK - IMPROVEMENT"

4.1 Establishing and Improving Organizational Support Mechanisms

4.1.1 Establishing a Specialized Quality Assurance Agency

Institutions should establish a specialized quality assurance agency responsible for organizing, coordinating, and supervising the implementation of the "evaluation - feedback - improvement" dynamic cyclic model. The institution should be composed of personnel with rich teaching experience and management capabilities to ensure the effective operation of the model.

Shandong Technology and Business University has established a Teaching Evaluation Center and a Quality Supervision Department, responsible for the evaluation and monitoring management of undergraduate teaching quality throughout the university, providing organizational support for the implementation of the dynamic cycle of "evaluation - feedback - improvement".

4.1.2 Clarifying the Responsibilities of Each Department and Personnel

It is necessary to clarify the responsibilities and division of labor of each department and relevant personnel in the "evaluation - feedback - improvement" process of the school, and form a clear responsibility and collaborative work mechanism.

For example, the Academic Affairs Office is responsible for developing teaching plans and managing courses, the Graduate School is responsible for ensuring the quality of graduate education, each teaching college (department) is responsible for evaluating and improving teaching within their own unit, and teachers are responsible for specific teaching implementation and improvement.

4.1.3 Developing Sound Rules and Regulations

It is also necessary to develop rules and regulations related to the "evaluation feedback improvement" dynamic cycle model, such as evaluation methods, feedback mechanisms, and implementation rules for improvement measures, to ensure that the implementation of the model is systematic, standardized, and orderly. Shandong Technology and Business University has issued a series of institutional documents such as the "Management Measures for Undergraduate Education Quality Monitoring and Guarantee" and the "Management Measures for Teaching Supervision Work", providing institutional support for the implementation of the model.

4.2 Building a Scientific Evaluation Index System

4.2.1 Taking Educational Objectives and Training Plans as the Basis

The evaluation index system should be closely formulated around the educational objectives and talent training plans of the institution, ensuring that the evaluation can reflect the fit between teaching quality and training objectives. Different levels and types of universities have different educational goals and training programs, and the evaluation index system should also be differentiated. For example, research-oriented universities may place more emphasis on cultivating research capabilities, while applied universities place more emphasis on enhancing practical abilities.

4.2.2 Highlighting Key Points and Characteristics

The evaluation index system should highlight the key aspects of teaching and the unique advantages of the institution, avoiding a comprehensive but lack of specificity. Shandong Technology and Business University highlights the characteristics of its financial and economic colleges in the evaluation index system, focusing on the assessment of students' practical ability, innovation ability, and financial literacy.

4.2.3 Specific, Clear, Operable, and Measurable Evaluation Indicators to Facilitate Data Collection and Quantitative Evaluation

The setting of indicators should avoid being too abstract and vague, and try to use quantifiable indicators such as student employment rate, course pass rate, number of scientific research achievements, etc. At the same time, for some difficult to quantify indicators, such as the innovation of teaching methods, teacher ethics and style, a combination of qualitative and quantitative evaluation can be used.

4.3 Constructing an Efficient Feedback Mechanism

4.3.1 Timely Collection and Organization of Evaluation Information

After the evaluation work is completed, evaluation information should be collected and organized in a timely manner to ensure its completeness and accuracy. Information technology can be utilized to establish an evaluation information management system and improve the efficiency of information processing.

4.3.2 Rapid Transmission of Feedback Information

It is necessary to quickly transmit the organized evaluation information to relevant parties according to the different feedback objects. The transmission of feedback information should be timely and accurate, avoiding information delay or distortion.

4.3.3 Establishing a Feedback Tracking Mechanism

A feedback tracking mechanism should be established to understand the feedback recipients' reception of feedback information and their willingness to improve, and urge them to take timely improvement measures. At the same time, the transmission and processing process of feedback information should be recorded to provide reference for subsequent evaluation and improvement.

4.4 Implementing Effective Improvement Measures

4.4.1 Developing Personalized Improvement Plan

Based on feedback information and the characteristics of different parties, there is a must to develop personalized improvement plan, clarify improvement goals, specific measures, responsible persons, completion time, etc.

4.4.2 Strengthening Guidance and Support for the Improvement Process

During the implementation of improvement measures, relevant management departments and quality assurance agencies should strengthen guidance and support for the improvement subjects, providing them with necessary resources and assistance.

4.4.3 Timely Evaluation of Improvement Effects

Based on the evaluation results, there is also a must to summarize lessons learned, comprehensively promote effective improvement measures, and adjust improvement measures with poor effects.

5. APPLICATION OF THE DYNAMIC CYCLIC MODEL OF "EVALUATION - FEEDBACK - IMPROVEMENT" AT DIFFERENT LEVELS OF EDUCATION

5.1 Application in Graduate Education

The evaluation of graduate education should pay more attention to the assessment of academic

research ability, innovation ability, and practical ability. The evaluation subjects include supervisors, graduate students, peer experts, academic committees, employers, etc. The evaluation covers aspects such as graduate students' academic performance, research achievements, thesis quality, academic exchange performance, and practical abilities. Shandong Technology and Business University evaluates the quality of graduate education through six basic quality assurance points, including enrollment quality, training process quality, degree granting quality, and mentor quality. At the same time, external academic organizations, industry departments, and other evaluations are introduced to comprehensively evaluate the quality of graduate education. Evaluation results should be timely fed back to graduate supervisors, graduate students themselves, and relevant management departments. The management department optimizes the graduate training program based on feedback information, improves the curriculum system, strengthens the construction of research platforms, and provides a better learning and research environment for graduate students.

5.2 Application in Undergraduate Education

The evaluation of undergraduate education should focus on mastering basic knowledge, cultivating basic skills, and improving overall quality. The evaluation subjects include students, teachers, teaching supervisors, employers, etc. The evaluation content includes the quality of course teaching, practical teaching effectiveness, student academic performance, comprehensive quality development, etc. The evaluation results are fed back to the teaching staff, students, teaching colleges (departments), and school management departments. Based on feedback information, all parties can improve teaching content and methods, optimize course settings, improve teaching resource allocation, and promote the overall improvement of undergraduate education quality.

6. IMPLEMENTATION EFFECTIVENESS ANALYSIS OF THE DYNAMIC CYCLIC MODEL OF "EVALUATION - FEEDBACK - IMPROVEMENT"

6.1 Significant Improvement in Teaching Quality

6.1.1 Improvement of Student Learning Outcomes

Through the implementation of the "evaluation - feedback - improvement" dynamic cyclic model, students' interest and initiative in learning have been significantly enhanced, and their academic performance and overall quality have been improved. After implementing the relevant quality assurance system at Shandong Technology and Business University, the employment rate of graduate students reached 100%, and 11% of graduates were admitted to prestigious doctoral programs; Undergraduate students have achieved excellent results in various subject competitions and practical activities, such as winning the National Gold Award in the China International College Student Innovation Competition (2023).

6.1.2 Improvement of Teachers' Teaching Ability

The implementation of the model promotes teachers to constantly reflect and improve their teaching, with more diverse teaching methods, richer teaching content, and continuously enhanced teaching innovation awareness and ability.

6.2 More Standardized Teaching Management

6.2.1 Continuous Improvement of Management System

In the implementation process of the model, colleges and universities continuously improve their teaching management system and processes, making teaching management more standardized and scientific. Shandong Technology and Business University has issued a series of institutional documents such as the "Compilation of Degree and Graduate Education Documents of Shandong Technology and Business University", forming a systematic and complete quality assurance system.

6.2.2 More Sound Quality Monitoring System

A comprehensive and full cycle quality monitoring mechanism has been established, which can dynamically identify and solve problems in the teaching process. Through teaching supervision, student evaluation, peer review and other means, the quality of teaching is systematically monitored to ensure the standardized operation of teaching activities.

6.3 Increased Social Recognition

6.3.1 Good Evaluation from Employers

The overall satisfaction rate of Shandong Technology and Business University with its graduates in 2023 reached 98.46%.

6.3.2 Institutional Reputation Enhancement

The effective implementation of the model has improved the teaching quality and educational level of the institution, enhancing its social influence and competitiveness. Some disciplines of Shandong University of Commerce have entered the forefront of the national rankings, attracting more high-quality students and resources.

7. PROBLEMS AND COUNTERMEASURES IN THE IMPLEMENTATION OF THE DYNAMIC CYCLIC MODEL OF "EVALUATION - FEEDBACK - IMPROVEMENT"

7.1 Existing Problems

7.1.1 Insufficient Evaluation Index System

Some evaluation indicators have not fully covered the entire teaching process, and the evaluation of achievement of output-oriented training objectives, graduation requirements, and course objectives needs to be strengthened and improved.

7.1.2 Not Smooth Enough Feedback Mechanism

The transmission of feedback information is not timely and accurate enough, and some feedback recipients do not attach enough importance to the feedback information, resulting in the feedback information not being fully utilized.

7.1.3 Quality Culture Construction Needing to Be Strengthened

A conscious, self-reflective, self-disciplined, self-examination, and self-correction quality culture has not yet been fully formed, and some teachers and students lack awareness and motivation to actively participate in quality improvement due to insufficient understanding of the importance of quality assurance.

7.2 Solutions

7.2.1 Improving the Evaluation Index System

Based on the school's educational positioning and training objectives, it is necessary to further improve the evaluation index system to ensure that the indicators can cover the entire teaching process, strengthen the evaluation of students' learning outcomes, refine examination indicators such as course objectives and graduation requirements, and establish a multidimensional and multi-level evaluation index system, emphasizing the combination of qualitative and quantitative evaluation.

7.2.2 Optimizing Feedback Mechanism

There is a must to establish an efficient feedback information transmission channel to ensure timely and accurate delivery of feedback information to relevant parties, strengthen training and guidance for feedback recipients, enhance their awareness and ability to apply feedback information, and establish a sound feedback tracking mechanism to track and supervise the processing of feedback information and the implementation of improvement measures throughout the process.

7.2.3 Strengthening the Construction of Quality Culture

Through various forms such as publicity, training, lectures, etc., it will be an effective way to strengthen quality culture education, improve teachers and students' awareness and understanding of quality assurance, and establish a correct quality concept. It is also necessary to integrate quality

awareness into the entire process of education and teaching, establish a quality incentive mechanism to commend and reward outstanding collectives and individuals in quality improvement work, and stimulate the enthusiasm and initiative of teachers and students to participate in quality improvement.

8. CONCLUSION

The "evaluation - feedback - improvement" dynamic cyclic model is based on the theories of TQM, continuous improvement, MBO, and PDCA cycle. By constructing three core processes of evaluation, feedback, and improvement, it forms a continuously optimized closed-loop system. The model has achieved significant results in practical applications at universities such as Shandong Technology and Business University, effectively improving teaching quality, standardizing teaching management, and enhancing social recognition.

The construction elements of the model include diverse evaluation subjects, comprehensive evaluation content, diverse evaluation methods, timely and effective feedback objects, content and methods, as well as targeted improvement subjects, measures and evaluations. The implementation path requires the establishment of a sound organizational guarantee mechanism, the construction of a scientific evaluation index system, the establishment of an efficient feedback mechanism, and the implementation of effective improvement measures.

However, there are also problems in the implementation process of the model, such as an incomplete evaluation index system, an unsmooth feedback mechanism, and the need to strengthen the construction of quality culture. Corresponding measures need to be taken to solve these problems.

In short, the "evaluation - feedback - improvement" dynamic cycle model is an effective tool for improving the quality of education and teaching. With the continuous development of educational practice and the deepening of research, this model will continue to improve and mature, making greater contributions to the development of China's education industry.

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