

Construction and Implementation of Teaching Quality Guarantee System--Take the Northwestern Polytechnical University Power and Energy College as an example

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Abstract. The paper presents a construction method of undergraduate teaching quality guarantee system. The quality standard system, quality guarantee organizational structure, construction and implementation of quality monitoring and improvement are analyzed and studied. Prove that the effective undergraduate teaching quality guarantee system can provide strong support and guarantee for the continuous improvement of teaching quality.

1. Introduction

Undergraduate teaching quality management has always been the core and complicated research topic in domestic and foreign colleges and universities^[1]. The establishment of a sound teaching quality guarantee system has a positive role in promoting teaching reform, improving teaching quality and improving the teaching environment. After years of construction, Northwestern Polytechnical University School of Power and Energy (Hereinafter referred to as "NPU- school of Power and Energy") have formed an orderly and perfect teaching quality management mechanism, which including standardized teaching quality standards, reasonable quality guarantee organizational structure, and a sound teaching monitoring and improvement system. The college has gradually built a unique "five-dimensional integration" quality standard system and a "closed loop feedback, real-time improvement" quality management system to promote the continuous improvement of teaching quality.

2. Teaching Quality Standards and Management System Construction

2.1 Teaching Quality Standards

Teaching quality standards are an important condition for ensuring teaching quality^[2-3]. After many years of teaching management practice and undergraduate teaching evaluation construction, NPU- school of Power and Energy has perfected the quality standards and teaching quality management systems of all major teaching links, and established a "five-dimensional integration" quality standard system covering the entire teaching process. Comprehensive monitoring, supervision, evaluation, and rectification of the management work to provide a strong guarantee for the continuous improvement of teaching quality.

The "five-dimensional integration" quality standard system includes the following five aspects, as shown in Figure 1.

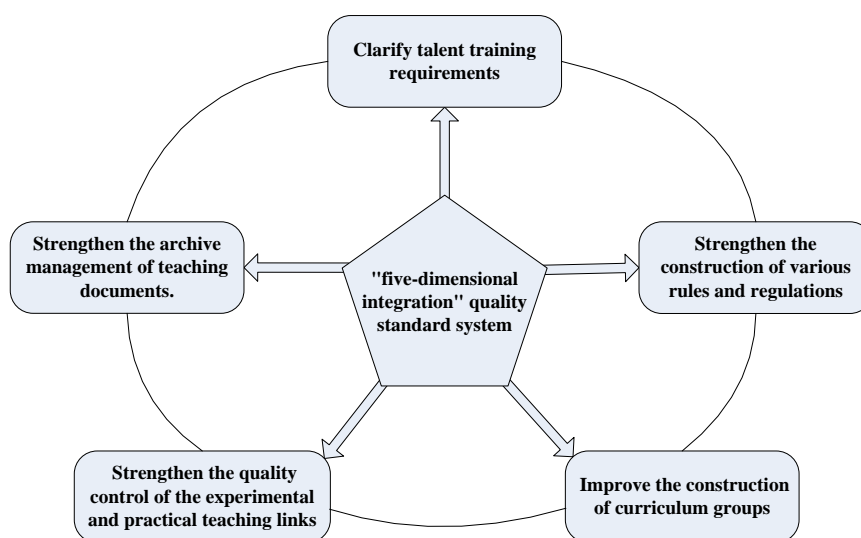


Figure 1. Schematic diagram of the "five-dimensional integration" quality standard system

Clarify talent training requirements and formulate evaluation standards for relevant links.

Talent training quality is the core of a college^[4-5]. In order to ensure the quality of talent training, the college has conducted in-depth research and analysis of the process of talent training and various teaching links, and has identified the basic factors affecting the quality of personnel training and key points of quality control. Through the formulation and revision process of training program demonstration, teaching evaluation, students comprehensive evaluation of teaching, graduation audit and degree granting, and other measures to evaluates the training objectives, training programs, professional knowledge education system, practical innovation ability training system, training program implementation, and formulates the evaluation criteria for each link.

Strengthen the construction of various rules and regulations and refine the quality standards of the main teaching links.

As an important part of teaching management, the construction of rules and regulations occupies a very important position^[6-8]. In order to strengthen the management of teaching, the NPU-school of Power and Energy has formulated the quality standards of specialty construction, course construction, training program, teaching program, teaching files, teaching materials, graduation thesis (design), test paper (question, score evaluation, test paper analysis), experiment and practice, etc. which to achieve the standardization of teaching management, thereby improving the efficiency of teaching management.

Improve the construction of curriculum groups and enhance the level of teaching construction.

On the basis of the original basic requirements for undergraduate curriculum construction, NPU-school of Power and Energy formulated and promulgated the implementation opinions on the construction of the "Principal Professor Responsibility System" curriculum group, increased the input of manpower and material resources for the construction of undergraduate courses, and constructed three-level quality curriculum system including school-level quality courses, provincial-level quality courses and national-level quality courses.

Strengthen the quality control of the experimental and practical teaching links, standardize the quality standards of internship and graduation thesis work, and improve the quality of experimental and practical teaching.

Based on the Shaanxi Virtual Simulation Experimental Teaching Center and the Shaanxi Provincial Aerodynamics Teaching Center, the NPU-school of Power and Energy actively set up comprehensive, design and innovative experimental courses, and clarified the quality requirements of all aspects of the experimental courses such as the experimental project, experimental teaching preparation, experimental organization and implementation, experimental report, and experimental examination assessment. At the same time, relevant regulations for undergraduate internships were formulated, and the quality requirements and evaluation standards for internship teaching activities, practical skills training, scientific research training, etc. were clarified. In addition, the school also

formulated the graduation thesis evaluation specifications and excellent graduation thesis evaluation standards, which strengthened the management of graduation thesis (design). Through the formulation and implementation of the above standards, it not only strengthens target management, but also strengthens process management and control, and effectively guarantees the improvement of the quality of practice teaching.

Strengthen the archive management and quality control of teaching documents.

The NPU-school of Power and Energy formulated and strictly implemented the rules and regulations for the management of teaching documents, set up a "reference room" and hired a special post of "filing clerk" to organize.

2.2 "Closed-loop Feedback, Real-time Improvement" Quality Management Closed-loop System

Under the strict implementation of the university management system, the NPU-school of Power and Energy has formulated a series of college-level management systems according to the actual state. As shown in Figure 2, it established a "closed-loop feedback, real-time improvement" quality management closed-loop system including "plan-run-supervision-control-feedback-improvement", and formed a teaching management policy system which rely mainly on university-level teaching management regulations while making college level teaching management documents subsidiary. By strengthening the system construction, a virtuous circle has be formed which focuses on the quality control of the main teaching links and takes feedback on teaching quality assessment and inspection. It includes that the school draw up some documents of teaching quality monitoring, and established a supervision and feedback team mainly based on university and college teaching supervisors, college leaders and students. In addition, it adheres to teaching exam at the beginning and mid-term of each semester, and the department leadership and teaching supervision group to listen to the class, and Information collection and feedback of student evaluation.

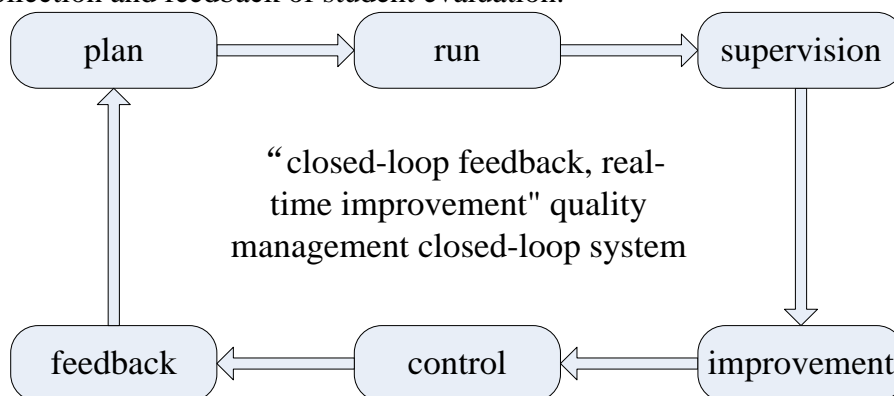


Figure 2. Schematic diagram of "closed-loop feedback, real-time improvement" quality management closed-loop system

3. Quality Guarantee System Organizational Structure

The improvement of teaching quality requires perfecting the management system and strengthening the construction of teaching quality guarantee team to ensure the continuous and effective implementation of the management system^[9-10]. For this reason, NPU-school of Power and Energy has established a quality guarantee organization based on its work. The quality guarantee organization is composed of academic committee members, members of the party and government joint committee, teaching management staff, members of the steering group, teaching and research office, teaching team of each department. As shown in Figure 3, it is guided by the academic committee members and the members of the party and government joint committee. The university and college supervisors are responsible for feeding back the quality information. The teaching management committee of the college is responsible for urging all departments, teaching and research offices and teaching teams to implement the rectification.

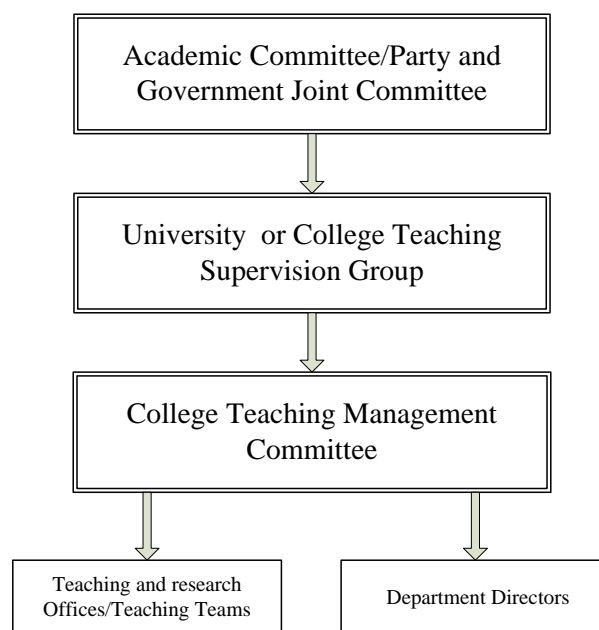


Figure 3. Quality guarantee system organizational structure

4. Quality Monitoring and Improvement

4.1 Monitoring

The teaching quality monitoring is mainly carried out from the following three aspects:

Implement the management personnel such as the leadership, department head, and supervisor of the college listening system.

NPU-school of Power and Energy formulated and implemented the "School of Power and Energy Administrative Measures for Leaders to Listen to Lessons", which stipulates in detail the number of times the college leaders attend lessons. The teaching management staff is responsible for summarizing and analyzing the lecture information, and uses it as an important basis for teachers to evaluate the best.

Implement student evaluation system.

In each semester, the college organizes students to fill out the "xx academic year x quarter semester teaching quality evaluation form". At the end of the semester, students evaluate teaching in the online teaching evaluation system. The teaching management staff of the college summarizes and analyzes the teaching evaluation of students in all courses, and then he feeds them back to the teachers and submits them to the college academic committee. Teachers whose teaching evaluation results do not meet the requirements will be dealt with in accordance with relevant regulations.

Established employer feedback system for graduate evaluation.

NPU-school of Power and Energy formulates the graduate quality questionnaire to investigate the work ability, knowledge structure and personality quality of graduates. It chooses the employers to carry out graduate quality surveys which the graduates are concentrated. The college collects questionnaires and makes analysis on the survey of graduates. And then take it as the basis of curriculum planning and construction.

4.2 Improvement

NPU-school of Power and Energy has instituted the quality continuous improvement mechanism. At the beginning of each school year, each major draws up detailed quality improvement measures based on the characteristics and development of their respective majors. Subsequently, all majors submitted the measures to the party and government joint committee and academic committee for review. If the measures are approved, it will be implemented. At the end of each school year, the college will uniformly check the effect of quality improvement measures of each major, and then report the results to the party and government joint committee and academic committee. The quality

improvement of the college takes the professional training objectives, training programs, curriculum construction, etc. as the starting point, with the improvement of the syllabus, the update of the classroom content, the improvement of the experimental methods and means as the specific performance.

Conclusions

This article analyzes and studies the undergraduate teaching quality standard system, quality guarantee organization structure, quality monitoring and improvement, and proposes the construction method of undergraduate teaching quality guarantee system, and at the same time, builds a "five-dimensional integration" quality standard system and "closed loop feedback, real-time improvement" Quality management closed-loop system, forms a supervisory feedback mechanism based on university and college teaching supervisors, college leaders and students. The quality guarantee system strengthens the problem-oriented quality improvement, and makes the problem of quality monitoring and improvement clear, the goal clear, and the process controllable. and realizes the dynamic management of teaching quality, which can well guarantee the stability, order, and high quality of undergraduate teaching. The operation of quality provides a strong guarantee for the continuous improvement of teaching quality. At the same time, the quality guarantee system realizes the dynamic management of teaching quality. It can well guarantee the smooth, orderly and high-quality operation of undergraduate teaching, and provide a strong guarantee for the continuous improvement of teaching quality. It provides a strong guarantee for the continuous improvement of teaching quality. More importantly, it provides a strong guarantee for the continuous improvement of teaching quality.

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