

## A TQM-based Study of the Evaluation Mechanism of Education Reform

REN Shuang, FU Guangjie, XU Jianjun\* and LI Hongyu

Department of Electrical Information Engineering, Northeast Petroleum University, Daqing, 163318,  
P.R. China

\*corresponding author E-mail: junjianxu@163.com

**Abstract.** Along with the continuous deepening of the reform of undergraduate education in our country in recent years, establishing and perfecting the evaluation mechanism of education reform, to promote the reform of quality assurance system construction, has the extremely vital significance to improve the quality of the reform in colleges and universities, deepen teaching reform, and promote the independent development. Combined with the typical evaluation mechanism, it is very important to determine the functions, characteristics and the basic components, which the evaluation mechanism should have. Based on studying modern enterprise financial control idea and Deming's basic idea of total quality management PDCA mode, to set deepening teaching reform, strengthening the connotation construction, improving the teaching quality, and promoting the independent development as the evaluation goals, to build a level-distinct, rich connotation evaluation mechanism of undergraduate education reform effect. The assessment mechanism has a complex, dynamic, three-dimensional effect education process, not only can realize its functions, but also can suggest the next stage decision-making work.

**Keywords:** TQM; Evaluation Mechanism; PDCA; Education Reform

### Introduction

In recent years, with the development of social economy and the aggravation of the competition situation, the masses of the people to accept the higher education psychological expectations change rapidly, the main contradiction of China Higher Education changes, the contradiction between the public's urgent demand of high quality higher education and the serious shortage of high-quality educational resources has become increasingly prominent, which caused widespread concern of all walks of life. Improving the quality of education has become the most core and urgent task of the higher education. In order to comprehensively implement the spirit of the national education work conference and the national medium and long-term plan outline for education reform and development (2010-2020), the government has started and organized to implement a number of major education reform projects. These will necessarily stimulate the enthusiasm and impetus of the broad education workers, to promote the rapid development of education cause in our country. But at the same time, a series of problems which caused by the propulsion of pilot reforms cannot be ignored: What impact will have to society (including education)? How to organize, manage and operate? Based on these, look the advance of the major national innovation projects and major reform pilot projects as an opportunity, it is both necessary and more and more urgent to set up the evaluation mechanism of reform and development of undergraduate education.

At present, the research of the assessment mechanism is generally focused on the school hardware and software metrics and evaluation of teaching level at home and abroad, is not focused on the evaluation of undergraduate education reform and development effect after education reform,

so the application value is low. But previous studies may be the basis for our study, some of the theory, method is worthy of reference. At present, the content of the undergraduate education reform basically has six categories, respectively: the national college student innovation experiment plan, the national experimental teaching demonstration center, teaching masters at the national level, national teaching team, national characteristic specialty construction point, national excellent courses, national bilingual demonstration course, national talented person training mode innovation experimental zone, etc.

In this topic, the emphasis is the construction of assessment mechanism in the process of the undergraduate education reform and development. Evaluation refers to systematically and objectively analyzes the purpose, the implementation process, the role, the benefit and influence of education reform, which has been complete or basically complete, through the inspection summary, determine the expected target is achieved or not. Affirm achievements, sum up experience and lessons, and then put forward suggestions to improve the work. Among them, the emphasis on the management's assessment of the education reform, constantly improve the management level, ensure finishing future management work better, and urge the realization of the expected goal.

### 1 The characteristics of the evaluation mechanism should possess

(1)With feedback, realizing the closed-loop management mode;

Evaluation of the higher education reform and development is the concrete application of feedback control theory in education reform management and decision making. After the undergraduate course education reform has entered into the phase of actual construction, establish evaluation mechanism in the management system, use the closed loop management pattern (as shown in Fig. 1); compare the results with the original target, check the decision be in line with the actual, in order to correct deviation; find out the weak link of the management aspects in the process of construction, to improve management.

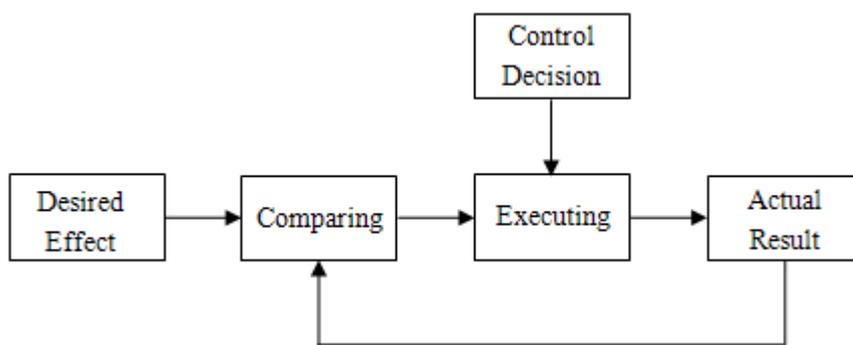


Fig. 1 Closed-loop management model diagram

(2)Application of new theories, new ideas, new ways and new methods;

(3)Has a variety of evaluation criteria, the evaluation of a variety of forms, multivariate evaluation subject, and multi-channel way of evaluation result release;

(4)With pertinence, professionalism, non-utilitarian.

### 2 Basic elements of evaluation mechanism

The basic elements of evaluation mechanism of undergraduate education reform and development mainly include: evaluation subject, evaluation object, evaluation content (evaluation index system), evaluation methods (evaluation process), etc.

#### (1) Evaluation subject

Evaluation subject is very important basic elements of evaluation, it relates to evaluating scientific, reasonable, reliable, relates to the social recognition of assessment activities. Comprehensive experience of higher education quality evaluation at home and abroad, and combining with the actual situation of our country, the evaluation main body should be a diversified portfolio, including 8 parts: ① the government or the competent department of education; ② head of the university internal administration; ③ teachers; ④ students; ⑤ unit of choose and employ persons; ⑥ parents of students; ⑦ the public; ⑧ schoolfellows, etc.

#### (2) Evaluation object

Higher education quality evaluation object refers to the institutions and departments engaged in the work of higher education teaching. Different evaluation objects shall be designed and adopted different evaluation criteria and evaluation technology. Here, we must define the evaluation object as: the education reform projects which have been completed or being in progress.

#### (3) Evaluation content

According to the theory of evaluation, the evaluation is to analyzes the implementation process, construction effect, the role, the benefit and influence of education reform, which has been complete or basically complete; through the inspection summary, determine the expected target whether reasonable or not, whether major measures implementation; find out the cause of the success or failure by analyzing the evaluation, summing up experience and lessons; and through the timely and effective information feedback, improve and perfect the higher education decision-making and management level, give suggestions for improvement in the next reform stage.

#### (4) Evaluation method

In order to ensure objectivity and impartiality of the evaluation, take the method of combining self-evaluation of internal and external evaluation.

### **3 Build a TQM-based Evaluation Mechanism of Undergraduate Education Reform**

TQM (Total Quality Management) as a kind of enterprise long-term practice has proved that it is scientific and effective comprehensive improvement and continuous improvement of quality management thinking, pattern and method, are rapidly were introduced, including being introduced into education field. Chinese college education has stepped into the stage of total quality management model at present. The TQM theory combined with the teaching quality management, to build a kind of university reform quality management model based on the quality, has important theoretical and realistic significance.

The whole process of management is an important point of TQM. In order to set up the whole process of quality management system, and ensure product quality, you must take the various factors and every links, which affect the quality, into the orbit of quality management. University education reform process is consistent with the enterprise's production process, so must strengthen the process management to improve the quality of the education reform and development. Quality management itself has certain procedural, we need use scientific procedures to improve and solve the problem, and the procedures include planning, implementation, inspection, and conclusion, hereinafter referred to as PDCA circulation. According to plan in advance, and through the participation of teachers, students and the public, the management process of university education reform and development will be put into effect, and improve the reform measures, solve the problems in the process of the reform; so as to achieve the overall goals of the education reform step by step.

First of all, through investigation and researching in the process of undergraduate education reform achievements, find out the existing problems, and analyze the causes of problems, explore the system lack of project implementation problems, summarize the influencing factors on the quality of the project, laying the groundwork for later assessment mechanism of scientific design. According modern enterprise financial control idea and Deming’s basic idea of total quality management PDCA mode, this paper establish the level of bright, rich connotation, and practical complex, dynamic, three-dimensional effect evaluation mechanism of the undergraduate education reform and development, as shown in Fig. 2.

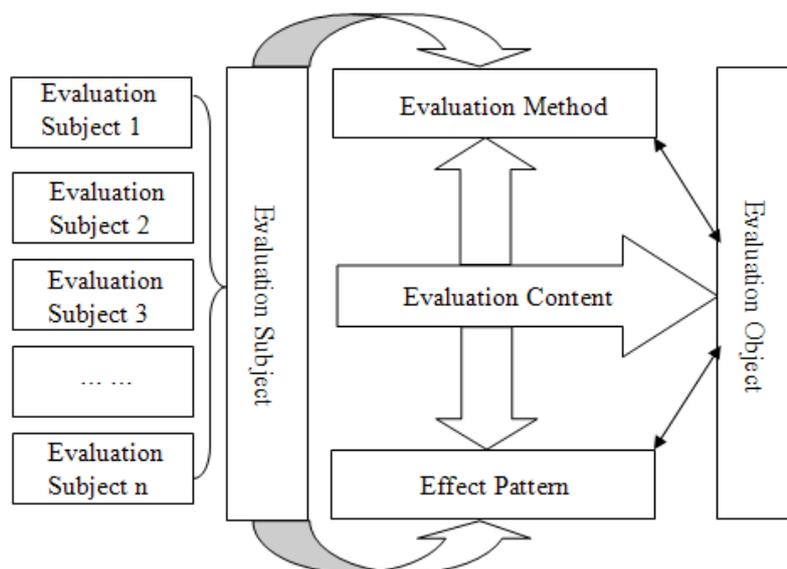


Fig. 2 Evaluation mechanism structure diagram of undergraduate Education Reform

In the process of evaluation, the evaluation subject is diverse, the evaluation object is multi-level and multi-type, evaluation content is varied; the interaction between the subject and object model and method is multi-type, the interaction between these elements will form a complex, dynamic, three-dimensional effect education process. This dynamic process is shown as Fig. 3.

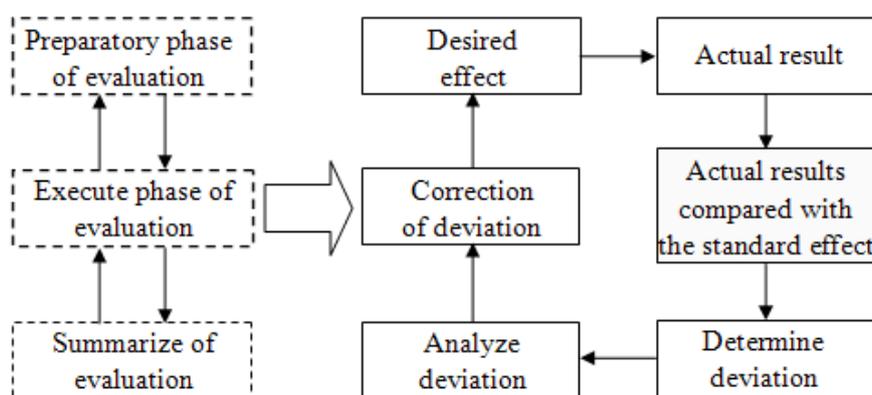


Fig. 3 The dynamic procedure of evaluation

During the process dynamic, change the inspection of the PDCA cycle process into a closed loop control links, and into the implementation stage, which make the loop body more unified.

### Summary

After the TQM-based undergraduate education reform effect evaluation mechanism was applied to the professional excellence engineers training project in our major, the accurate assessment have

been made to describe present stage reform effect, the evaluation results will be an important reference to guide the concrete implementation of the next stage reform. The evaluation results also constraint the executive main bodies of the education reform, this is conducive to the implementation of the education reform, to discover and correct the wrong in the process of execution in time. In the process of project implementation, the number of students who took part in the competition and got the prize, graduates employment rate, teachers' scientific research awards have been increased obviously, this is given to illustrate the effectiveness of the evaluation mechanism.

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