# Research on the Reconstruction of Teaching Quality Evaluation System for Information-Based Courses Targeting Smart Talents

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**Abstract: In response to the key issues of single evaluation mechanism, weak application ability, and disconnected industry demand in the existing information course teaching evaluation system, this paper focuses on the training objectives of intelligent talents in information courses, combined with the characteristics and forms of higher education, guided by the OBE (Outcome Based Education) education concept, clarifies the needs analysis, carries out system reconstruction, and constructs a new teaching quality evaluation system based on process scoring on the basis of refining the five teaching objectives of ideological and political education, theoretical education, practical education, innovative education, and labor education. Based on the "Mobile Communication" course, the practice of constructing a new teaching quality evaluation system is carried out. The results show that the reconstructed teaching quality evaluation system is more scientific in curriculum education philosophy, more reasonable in training methods, and more comprehensive in assessment methods. All preset goals can be successfully achieved, and teaching achievements are fruitful, achieving the cultivation effect of intelligent talents.**

**Keywords: Smart Talents; Information; Course; Teaching; Quality; Evaluation System**

## 1. Introduction

The information courses in the higher education system are a comprehensive discipline system based on information science, focusing on information processing, technology application, and quality cultivation. The scope of the courses covers fields such as information technology, information technology, and computer science. The teaching purpose of the courses is to help students master the core abilities of information acquisition, analysis, expression, application, and innovation, and adapt to the needs of the information society [1-3]. The connotation of the courses is to emphasize the thinking methods and technological innovation in the information processing process [4].

The so-called intelligent talents refer to those who possess a high level of intelligence and innovation ability in the context of the information society. Intelligent talents should have comprehensive disciplinary knowledge and professional qualities, and focus on self-learning and lifelong development. [5-7] Therefore, intelligent talents who meet the requirements of the times should not only have a solid reserve of professional knowledge, but also be able to flexibly apply the learned professional knowledge to solve practical problems, and have the ability to continuously learn and grow in a constantly changing environment [8-9].

With the continuous progress of the information society and the popularization of various information technologies, accelerating educational reform in the information age has become an increasingly common consensus in current higher education [10-12]. Especially, using modern information technology to accelerate the reform of talent training models and achieve the organic combination of large-scale education and personalized training has become a hot area in current higher education reform. Therefore, based on the above conceptual analysis, the teaching goal of current higher education information courses is to cultivate intelligent talents that are in line with the development of the information society.

Therefore, in the face of the challenges of the times, conducting research on the reconstruction of the teaching quality evaluation system for information courses

 

aimed at intelligent talents, and carrying out corresponding reforms and explorations, is not only necessary to promote the deep integration of the intelligent talent training system with the needs of the digital economy and technological innovation, but also to support the high-quality and sustainable development of the digital economy. It is not only an inevitable requirement for the development of the information society, but also an inevitable trend for the future development of education. It has profound significance for improving the teaching quality and efficiency of information courses in higher education, and promoting their reform and development.

## 2. Key Issues of the Original Teaching Quality Evaluation System

Information related courses have always held a pivotal position in the higher education system, and their content has distinct characteristics of the times and strong professional features. However, for a long time, due to the low popularity of information technology, single support methods for smart education, and deep-rooted traditional teaching concepts, there are also some problems in the teaching evaluation system of information courses.

### 2.1 Single Evaluation Mechanism

The traditional course assessment method mainly based on written exams often results in a teaching evaluation system that only focuses on the basic theoretical classroom teaching effectiveness, and the measurement of teaching effectiveness is often based on the high or low scores of students' written exams. This type of single evaluation mechanism is difficult to comprehensively measure students' comprehensive abilities, ignoring the digital collaboration, comprehensive analysis, and problem-solving abilities required by the current information society for intelligent talents. It lacks the examination of practical skills and innovative thinking, and cannot scientifically and fully demonstrate the actual level of teaching, which affects the quality of talent cultivation.

### 2.2 Weak Application Ability

The traditional curriculum teaching evaluation system focuses more on the examination and evaluation of basic classroom teaching effects, which often leads teachers to only focus on the content of pure theoretical teaching, emphasizing the infusion of knowledge, and lacking support for practical scenarios. This makes it difficult for students to transform abstract concepts of information courses into the ability to solve practical problems, and the teaching effect lacks the interaction and feedback of theory and practice, greatly weakening the cultivation of students' application ability. Ultimately, this leads to a decrease in students' interest in learning, and the scientific evaluation of teaching quality cannot be discussed.

### 2.3 Industry Demand Disconnect

One of the prominent features of information courses is their strong technicality. With the continuous acceleration of digital technology, the development of information technology is also advancing rapidly. The theoretical teaching content and other updates of traditional information courses often lag behind the actual development of information technology. The content of textbooks is disconnected from the actual needs of the industry, and the talents cultivated are difficult to meet the requirements of enterprises for digital skills and cross disciplinary collaboration abilities, exacerbating the problem of talent supply and demand contradiction. However, the traditional teaching evaluation system ignores the examination of industry demand and cutting-edge technology, which limits the progressiveness and personalized adaptation of teaching content, and ultimately affects the effective achievement of teaching quality.

## 3. Reconstruction of Teaching Quality Evaluation System

By identifying the problems in the existing teaching quality evaluation system of information courses, clarifying the objectives of course training, identifying and clarifying the purpose of reconstruction, grasping the purpose of information course teaching, and carrying out specific reconstruction work of the teaching quality evaluation system, we can achieve a strong response to the call for talent training mechanism reform in the rapidly developing information age. The overall logical framework of the teaching quality evaluation system for information courses aimed at smart talents is shown in Figure 1:

 

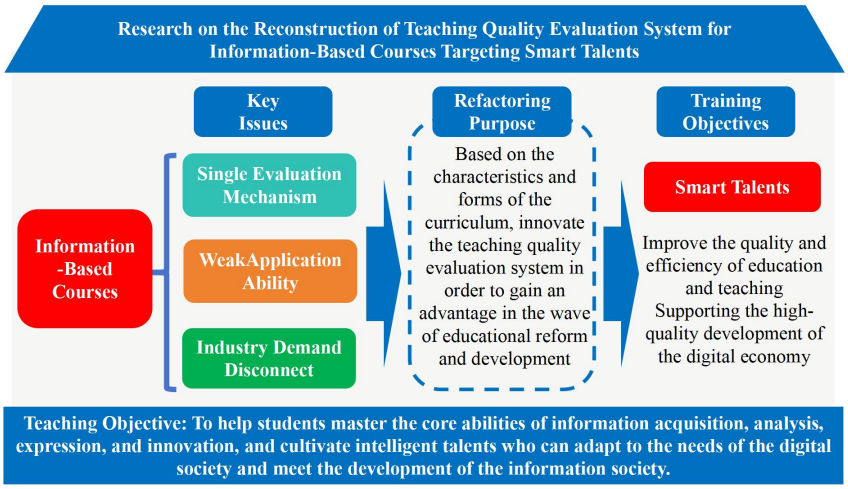


**Figure 1. Logical Framework for Reconstructing the Teaching Quality Evaluation System**

Specifically, on the basis of facing up to the problems of single evaluation mechanism, weak application ability, and disconnection from industry demand in the existing teaching quality evaluation system, the goal of restructuring is to help students master the core abilities of information acquisition, analysis, expression, and innovation, cultivate smart talents that adapt to the needs of the digital society and the development of the information society, and effectively improve the quality and efficiency of education and teaching, supporting the high-quality development of the digital economy.

In terms of refactoring operations, we are guided by the OBE (Outcome Based Education) educational philosophy and carry out refactoring construction based on the following four points. The relevant implementation path is shown in Figure 2:

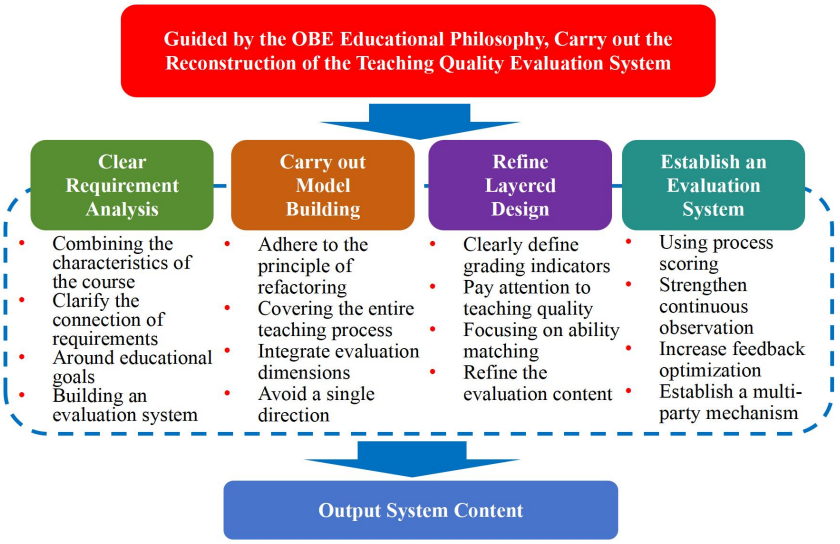


**Figure 2. Implementation Path of Reconstruction of Teaching Quality Evaluation System**

### 3.1 Clear Requirement Analysis

Based on the characteristics of information courses, clarify the connection point between course objectives and industry needs, guided by the cultivation of smart talents, and centered around the five dimensional education objectives of "ideological and political education + theoretical education + practical education + innovative education + labor education", scientifically construct the underlying logic of the teaching quality evaluation system, strengthen the supporting role of the evaluation system in achieving the teaching objectives of information courses, highlight the examination of students' digital tool application, cross disciplinary collaboration, and complex problem analysis and solving abilities, and establish multidimensional and quantifiable evaluation standards.

 

### 3.2 Carry out Model Building

Adhering to the principle of multidimensional integration and reconstruction, covering the entire chain of information related course teaching activities, integrating and expanding the evaluation dimensions of teaching outcomes such as course design, classroom interaction, and practical results, avoiding a single score oriented approach. Add emerging indicators such as "innovative education" and "labor education" to reflect the core characteristics of smart talents. Introducing smart evaluation tools, conducting in-depth data analysis of learning behavior, tracking teaching effectiveness throughout the entire process, and generating feedback reports on teaching quality to support dynamic adjustments of relevant strategies in the teaching quality evaluation system.

### 3.3 Refine Layered Design

Clarify the framework of primary indicators and refine the secondary indicators, focus on the quality of course teaching, and concentrate on the degree of matching between teaching objectives and the smart talent ability map, as well as the cutting-edge nature of course content. Fully stimulate the effectiveness of the teaching process, enhance classroom interaction activity, make full use of online digital teaching platforms, increase the frequency of open discussions on cutting-edge knowledge points on the platform, expand the application depth of technical tools, and improve the utilization rate of virtual simulation experiments. Based on students' ability output, such as technical practice achievements, innovative topics, etc., provide detailed content on indicators such as technical ability, collaboration ability, and innovation literacy.

### 3.4 Establish an Evaluation System

Adopting a quantitative evaluation system model of "process oriented scoring and goal oriented achievement", strengthening continuous observation of teaching effectiveness, enhancing evaluation guarantee and feedback optimization, establishing a multi-level and multi angle joint evaluation mechanism, introducing the three-dimensional evaluation role of "school student society", ensuring that the evaluation results of the reconstructed teaching quality evaluation system have the objectivity and authority they deserve.

## 4. Practice of Reconstructing Teaching Quality Evaluation System

Taking the course of "Mobile Communication" in the field of information technology as an example, we aim to innovate and implement an evaluation system for the teaching quality of information technology courses aimed at smart talents. The overall architecture of the reconstruction of the specific course teaching quality evaluation system is shown in Figure 3:

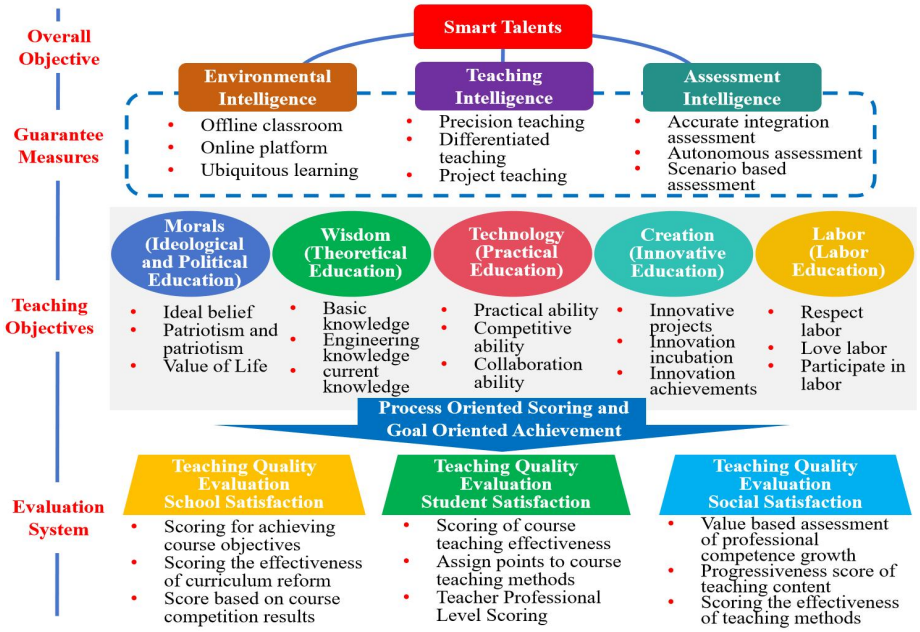


**Figure 3. Overall Architecture of Teaching Quality Evaluation System Reconstruction**

### 4.1 Overall Objective

The overall goal of the project is to cultivate "smart talents" that meet the needs of the information age. Therefore, the teaching effect of the course should enable students to have basic theoretical level, innovation ability, comprehensive quality, self-learning and lifelong development ability related to the course after completing the prescribed learning actions. Emphasis should be placed on the continuous improvement of students' own literacy and adaptation to the constantly changing information environment.

### 4.2 Guarantee Measures

To effectively respond to the overall goal of the restructured teaching quality evaluation system, a new evaluation system can be provided from three aspects: environmental intelligence, teaching intelligence, and assessment intelligence to ensure the smooth achievement of expected goals. The smartization of the environment should cover offline classroom environments, online platform environments, ubiquitous learning environments, and other content. Teaching intelligence should include precision teaching, differentiated teaching, project-based teaching, and other content. The smartization of assessment should include integrated assessment, autonomous assessment, scenario based assessment, and other contents.

### 4.3 Teaching Objectives

With the assistance of the above guarantee measures, combined with the characteristics of curriculum teaching, five specific teaching objectives are deconstructed and extracted in order to achieve the goal of cultivating smart talents.

Among them, ideological and political education is the foundation for cultivating students' noble sentiments, correct worldview, outlook on life, and values. Theoretical education mainly focuses on students' knowledge and learning ability, and through systematic learning and training, they can master solid basic knowledge. Practical education emphasizes the cultivation of hands-on ability, focusing on the shaping of problem-solving and practical skills. Innovation education combines college student innovation and entrepreneurship training programs, college student innovation competitions. Labor education organizes students to participate in various themed labor activities related to courses, cultivating their qualities of hard work and honest labor, and preparing them for future careers.

### 4.4 Evaluation System

Under the joint promotion of clear overall goals, sufficient guarantee measures, and precise teaching objectives, a newly constructed evaluation system is about to emerge. The overall score composition of the evaluation system includes three aspects. In school satisfaction, the reasonable calculation of satisfaction scores is achieved by assigning scores based on the achievement of curriculum goals, the effectiveness of curriculum reform, and the results of curriculum competitions. In terms of student satisfaction, reasonable measurement of satisfaction scores can be achieved through assigning scores to course teaching effectiveness, course teaching methods, and teacher professional level. In social satisfaction, the reasonable measurement of satisfaction score is achieved by scoring professional quality growth value, progressiveness of teaching content, and effectiveness of teaching methods.

## 5. Evaluation System Practical Effect

### 5.1 Abundant Teaching Achievements in the Course

Since the implementation of the reconstruction of the teaching quality evaluation system for the course "Mobile Communication", students have actively participated in related competitions such as the "Datang Cup" National College Students' New Generation Information and Communication Technology Competition and the "Blue Bridge Cup" 5G Network Planning and Construction Competition, and have won a total of 6 national third prizes or above and more than 80 third prizes or above in Jiangsu Province.

The teaching team of "Mobile Communication" has also won multiple awards in various teaching competitions such as the Suqian College Micro Course Competition, the National Applied Talent Skills Competition, and the National Electronic Information Young Teacher Teaching Competition. They have won a total of four third prizes or more

 

nationwide and three third prizes or more at the provincial level in Jiangsu Province more than 10 people.

### 5.2 The Curriculum Construction is Standardized and Complete

Since the implementation of the reconstruction of the teaching quality evaluation system for the course of Mobile Communication, a set of cutting-edge technology hotspots and complete online and offline teaching resources have been formed, covering various aspects such as ideological and political education, theory, practice, innovation, and labor. The relevant teaching objectives are clearly constructed, the teaching process is standardized, and the teaching material content is novel, meeting the learning requirements of students' differentiation, autonomy, and collaboration.

### 5.3 Course Evaluation is better than Previous Periods

Since the implementation of the reconstruction of the teaching quality evaluation system for the course "Mobile Communication", the satisfaction level of teaching has significantly improved. Multiple batches of participation in school level open courses have achieved excellent scores in various teaching quality assessments. Among them, in terms of school satisfaction in teaching quality evaluation, the scores for all achievement levels have exceeded 90 points. In terms of student satisfaction with learning quality evaluation, all achievement scores exceed 85 points. Regarding the evaluation of teaching quality and social satisfaction, the degree of achievement in various aspects is assigned.The average score is over 90 points. 98% of students have overall good grades or above, and the quality of course teaching meets the standard.

## 6. Conclusions

Since the implementation of the reconstruction of the teaching quality evaluation system for information courses aimed at smart talents, the content of the relevant course teaching quality evaluation system in the new era has been reshaped, combined with the relevant characteristics and forms of smart talent education. The curriculum education philosophy, training objectives, training methods, and assessment methods have been actively reformed, and the curriculum teaching quality evaluation system has been innovated. The reconstruction practice has been carried out through "Mobile Communication". The results show that the newly constructed curriculum quality evaluation system has achieved significant results in cultivating talents, training teachers, and standardizing teaching, which helps to cultivate smart talents with comprehensive qualities and innovative abilities, and contributes to the high-quality and sustainable development of the information society.

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