



# Research on Examination and Assessment Strategies for Vocational Education Institutions

Deqiang Meng\*, Zhiyu Ding, Yazhi Li, Feng Jiang

Army Arms University of PLA, Changchun, 130117, China

\*mdqaly@163.com

**Abstract.** Vocational education institutions undertake the mission of cultivating high-quality, specialized skilled talents for the country, and their teaching quality is directly related to the development and modernization of the country. Examination and assessment, as an important part of the teaching process, play a crucial role in testing teaching effectiveness and evaluating the generation of students' skills. At present, examinations and assessments in vocational education institutions in China have not deviated from the framework of exam-oriented education, and there are still problems such as deviated examination orientation and monotonous forms. This study focuses on the assessment of the achievement of course teaching objectives, reforms and improves the assessment methods, emphasizes ability assessment, pays attention to process assessment, covers all teaching contents, establishes assessment feedback mechanism, achieves a comprehensive assessment of the learning effect of students' courses, and improves the quality and efficiency of course assessment.

**Keywords:** Vocational education institutions, Examinations and assessments, Teaching quality.

## 1 Introduction

Assessment is an important part of teaching. It is not an end but a means. The purpose of assessment is to promote teaching, test results, and stimulate students' motivation to learn. Having assessment is not equivalent to exam-oriented education. In recent years, both the "National Outline for Medium and Long-Term Education Reform and Development (2020-2025)" formulated by The State Council and the "China Education Modernization 2025" issued by the Central Committee of the Communist Party of China and The State Council have proposed to "take reform and innovation as a powerful driving force for the development of education" and to improve the level of education development through reform of the examination and evaluation system.

With the continuous development of vocational education, teaching reform has been advancing in an orderly manner. However, as the most important link in teaching, the current examination of vocational education institutions has not deviated from the framework of exam-oriented education and still adopts the traditional assessment model

that emphasizes theory over practice, which seriously affects and restricts the effectiveness of the examination and assessment reform of vocational education institutions. Through scientific and reasonable examinations and assessments, it is possible to accurately understand students' mastery of knowledge and skills, identify problems in the teaching process, and provide a basis for teaching improvement.

## **2 Problems Existing in Examinations and Assessments in Current Vocational Education Institutions**

As the reform and adjustment of vocational education institutions continue to deepen, higher demands are placed on the abilities of students in vocational education institutions. The goal of vocational education institutions is to cultivate tens of millions of high-quality technical and skilled talents. The cultivation of technical and skilled talents is not only about how to teach, but also about how to test. Although the examination and assessment of vocational education institutions are constantly changing, the framework of exam-oriented education remains unchanged. There are still problems such as a single examination and assessment method, unscientific assessment and evaluation standards, and an unclear feedback mechanism.

### **2.1 The forms of Examinations are Relatively Monotonous**

Vocational education institutions have developed a teaching philosophy that is career-oriented and ability-centered, with an increasing emphasis on practical teaching. Survey data shows that the proportion of practical teaching in vocational education institutions has exceeded 50% at present, but the increase in practical teaching has not been reflected in the examination and assessment. Many vocational education institutions still do not attach importance to the assessment of practical skills and vocational abilities. The assessment focuses mainly on theoretical knowledge and neglects the assessment of abilities in the process of practical teaching. At the same time, the examination forms are mostly written tests and other forms of assessment, which are relatively monotonous.

### **2.2 Unscientific Criteria for Assessment and Evaluation**

The evaluation criteria for examinations and assessments in vocational education institutions often rely mainly on scores[1], overly emphasizing results and neglecting the assessment of students' learning process and the generation of practical skills. A single score evaluation fails to fully reflect students' learning situation, which can easily lead students to focus only on examination results and neglect the improvement of their own abilities. In addition, there may be subjective factors influencing the evaluation process, resulting in less objective and fair evaluation results.

### **2.3 The Assessment Feedback Mechanism is Imperfect**

Usually, after the course examination and assessment, only the final grades are tallied, and the feedback on the examination and assessment results is often not timely and detailed enough. Students are unable to understand their strengths and weaknesses in a timely manner, making it difficult for them to make targeted improvements. At the same time, teachers cannot adjust their teaching strategies in a timely manner based on the feedback information, which seriously affects the feedback of examination and assessment to teaching, and makes it difficult for teaching quality to be effectively and continuously improved.

## **3 Advanced Assessment Models in the Current Field**

There is still a certain gap between the current examination and assessment system of vocational education institutions and the mature educational concepts and the relatively complete examination and assessment system abroad. Below we will study and analyze the advanced educational concepts and the complete examination and assessment system, so as to draw on their effective experience.

### **3.1 Characteristics of the OBE Teaching Philosophy**

The well-known OBE educational philosophy (Outcome Based Education)[2] is an educational philosophy that is student-centered and result-oriented. The idea states that the purpose of education is to develop the knowledge, skills, and qualities that students need. It emphasizes diverse learning evaluations, requiring the combination of curriculum content, teaching methods, and evaluation methods, that is, evaluations should comprehensively and multi-perspectively reflect students' learning outcomes, including those in terms of knowledge, skills, and qualities. In view of the fact that vocational education institutions aim to cultivate tens of millions of high-quality technical and skilled talents, we should pay more attention to the characteristics of practical courses such as high professionalism, practical prominence and action standardization, and form corresponding course assessment and evaluation methods based on the unique attributes of the courses, which is an important way for students to complete their learning plans and achieve their learning goals.

### **3.2 Characteristics of Examinations in German Vocational Education Institutions**

Germany, as an advanced country in industrial manufacturing, has a well-developed training system for cultivating high-quality skilled talents. The assessment characteristics of vocational education institutions mainly include flexible examination content, relatively integrated knowledge points in each test question, focusing on assessing students' subject knowledge, practical skills and job vocational skills, with a relatively

large proportion of practical ability assessment. It mainly examines various skills required by the profession, and the examination content is constantly updated according to the job requirements[3]. Also for our vocational education institutions, we need to increase the integration of examination content and raise the proportion and standards of practical skills assessment.

## 4 Strategies for Improving Examinations and Assessments in Vocational Education Institutions

Scientific and reasonable assessment, on the one hand, can reflect the teaching level of the course, the teaching effect, and the students' mastery of the basic knowledge and practical skills of the course, and then feed back to the problems existing in teaching, actively improve and thereby promote the continuous improvement of teaching training level[4]. On the other hand, it can urge students to attach importance to the key contents of teaching and the implementation process of operation methods, play a guiding role in students' learning of professional knowledge and skills, and make good use of the baton of assessment, which is of great significance for improving teaching quality and efficiency.

### 4.1 Define the Objectives of the Course Examination

Vocational education institutions should formulate relevant talent cultivation programs and course teaching plans based on the overall goals of the "20 Articles on Vocational Education"[5], and specify course assessment objectives in the course teaching plans (Table 1). Course teaching and assessment objectives should be based on the coordinated development of knowledge, ability and quality, making assessment an important link in cultivating new types of technical and skilled talents who are "able to learn, think, apply and innovate". The course assessment objectives should be integrated throughout the entire teaching process and the stage of teaching content to avoid missing content and to have a comprehensive understanding of the students' learning situation. At the same time, the assessment content should be ability-oriented to guide students to keep up with the cutting-edge, broaden their horizons, learn independently, and develop their critical thinking, analytical and comprehensive abilities, and innovative potential.

**Table 1.** Objectives of Course Assessment

Course Objectives	Objectives Requirements	Methods for achieving Goals
Knowledge Objectives	Preview knowledge	Read textbooks, watch online courses, and record questions
	Apply knowledge	Task guidance, group discussion, and demonstration and explanation
	Reinforcement of knowledge	Review and summarize, complete homework
Competency Objectives	Analyze the problem	Based on the problems with the equipment, analyze the causes of the faults, solve the faults through practical operation of the
	Practical operation skills	

Course Objectives	Objectives Requirements	Methods for achieving Goals
		equipment, improve students' hands-on ability, and generate the ability for job positions.
Quality Objectives	Comprehensive quality development	Curriculum-based ideological and political education: Incorporating ideological and political elements into the teaching process. Explain typical cases, analyze the spirit of great craftsmen, and cultivate students' spirit of teamwork, hard work, and striving for excellence.

### 4.2 Optimize the Assessment Methods

In terms of assessment, conduct the assessment in accordance with the talent cultivation plan and the course teaching plan. Implement the ability-driven assessment concept, improve the assessment and evaluation system, advance the reform of examination and assessment, strengthen the management of the assessment process, focus on the analysis and application of results, and achieve the transformation from "testing knowledge" to "testing ability, thinking, and comprehensiveness". Take a certain equipment maintenance course of the 2024 grade as an example, the assessment method is a combination of formative assessment and summative assessment (Table 2). Formative assessment is based on skill assessment, follows the general law of student ability generation, and in accordance with the principle of "emphasizing practice and gradual progress", strengthens interactive design, through "list" competition and comparison, inspires students to think, understand the steps and processes of equipment maintenance operation, and cultivates students' sense of autonomy, control and achievement in teaching activities, Address issues such as students' lack of ability to analyze and solve problems and their weak ability to innovate and practice. The final assessment is oriented towards the job competency of the student, and the corresponding assessment content is developed based on the job requirements. The final assessment covers all course knowledge points and highlights key and difficult points of teaching. On the basis of the examination of basic knowledge, basic theory and basic skills through oral and defense tests, it focuses on the examination of knowledge application, thinking analysis and problem-solving abilities.

**Table 2.** Assessment Methods for Equipment Maintenance Courses

AssessmentWays	Assessment measures	AssessmentProportion	Purpose of assessment
Formative assessment	Classroom questions	10%	Stimulate students' enthusiasm for learning and understand their mastery of knowledge.
	Regular homework	10%	To assess students' mastery of classroom knowledge and to enhance their understanding and memory of what they have learned
	Practical Operations	30%	Enhance students' hands-on skills and

AssessmentWays	Assessment measures	AssessmentProportion	Purpose of assessment
			stimulate their enthusiasm for learning through "competitions".
Summative as- essment	On-site operation	40%	Integrate multiple knowledge points to enhance trainees' job capabilities and develop equipment maintenance skills.
	Oral defense	10%	To assess students' mastery of different knowledge points and to develop their ability to integrate relevant knowledge.

The 2024 grade of a certain equipment maintenance course adopted an optimized examination and assessment method. The score analysis is shown in Figure 1. The assessment results are closer to the normal distribution, and the average score of the 2024 grade students is 2.5% higher than that of the 2023 grade students of the same course.

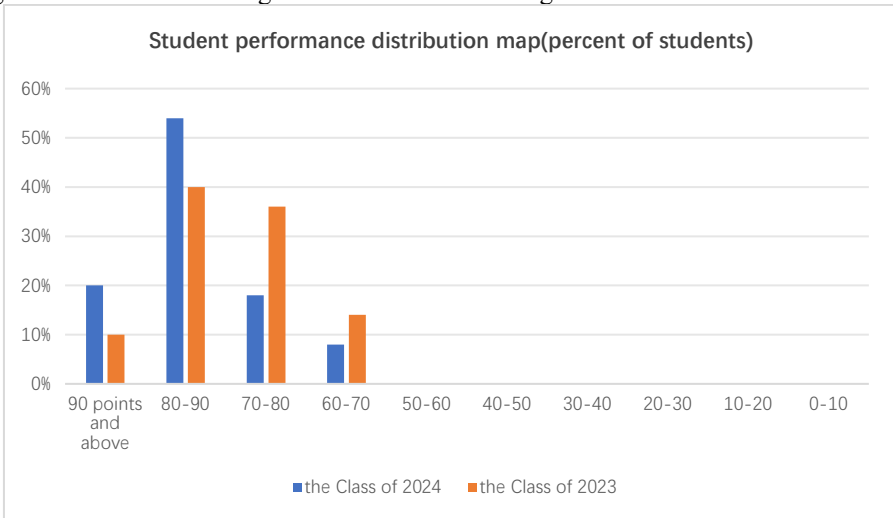


Fig. 1. Analysis Chart of grades

### 4.3 Establish an Effective Assessment Feedback Mechanism

It has played a comprehensive and objective role in evaluating students' comprehensive application ability, exerted the function and effect of promoting training through assessment, and increased the importance and enthusiasm of trainees to actively participate in training. First, conduct a thorough performance analysis to avoid one-sided certification of students' learning levels based solely on general scores or simple conclusions. Conduct a comprehensive analysis of students' learning, mastery, application, and expansion of knowledge, comprehensively judge the gains and losses of students in the course learning process, and summarize the teaching experience and improvement directions of the course. Second, connect with student teams, accurately grasp the ideological state and learning situation of students at each stage, and give full play to the role of daily education. Guide and educate students in a timely manner to adjust

their mindset, establish correct learning values, strengthen students' awareness of autonomous learning, and enable students to establish a good study style. Third, it is necessary to effectively enhance the effectiveness of the analysis of assessment results in the summary of course teaching, gradually improve the information feedback and early warning mechanism, explore the use of educational measurement theory to conduct in-depth performance analysis and form high-quality performance analysis reports, providing data support for teaching reflection, early warning information for student management units, and reference basis for decision-making by leaders at all levels and agencies.

## 5 Conclusion

Improving the effectiveness of examinations and assessments in vocational education institutions is a systematic project that requires innovation and reform in multiple aspects such as the assessment system, assessment content, assessment methods, evaluation standards, and feedback mechanisms. By building a diversified assessment system, optimizing assessment content, applying innovative assessment methods, improving assessment evaluation standards and establishing an effective assessment feedback mechanism, examinations and assessments can be made more scientific, fair and effective, comprehensively testing students' learning outcomes and abilities and qualities, and providing a strong guarantee for vocational education institutions to cultivate high-quality technical and skilled talents. Vocational education institutions should constantly explore and practice, and continuously advance examination and assessment reforms to meet the demands of national modernization for talent cultivation.

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