

# Construction and Practice of Multiple Assessment System under Mixed Teaching Mode

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**Abstract**—The reform of curriculum assessment method is the key to improve the quality of curriculum teaching. With the deep integration of information technology and modern education, the mixed teaching model has become an important trend in universities reform. In this paper, the multiple assessment system under the mixed teaching mode is put forward; the scientific design is carried out from the aspects of examination content, assessment method, evaluation subjects and assessment index. The assessment mode can avoid the phenomenon of "one test success or failure" and to a certain extent reflect the fairness of assessment. Practice has proved that this assessment method has promoted the transformation of teaching mode and student learning mode, and has improved the teaching quality and the comprehensive quality of students.

**Keywords**—Mixed teaching; Multiple assessment; Assessment method; Engineering survey

## I. INTRODUCTION

Curriculum assessment is an important part of teaching activities in Colleges and universities. It is an important way to check teachers' teaching quality and teaching effect, and evaluate students' professional knowledge and skill level. The existing classroom teaching evaluation system is relatively mature, but there are outstanding problems in a test set for success ", to a comprehensive, objective and fair evaluation of students' learning attitude, learning achievement, to a certain extent damped the enthusiasm of students, restrain students' subjective initiative, but also contributed to the opportunistic some of the students in the invisible, is not conducive to their future work and learning. Therefore, it is very necessary to change the disadvantages of the examination system under the traditional classroom teaching mode, improve the assessment system, and let the academic achievement more reflect the learning ability and learning attitude [2].

The construction of the assessment system is closely related to the nature and characteristics of the course itself, and it is also related to the characteristics of the teaching model. Mixed teaching combines the advantages of traditional classroom teaching with the advantages of network teaching, so as to obtain the best teaching effect. Hybrid Teaching Mode in recent years for the construction and practice of possible multiple evaluation system, scientific and reasonable assessment methods have

significant guidance to both teaching and learning and promote the role, not only can effectively mobilize the enthusiasm and initiative of the students, but also to the problems in the teaching of teacher feedback. To help the teachers to sum up experience, improve teaching activities, to achieve ", so as to effectively improve the Teaching benefits teachers as well as students." teaching quality and personnel training quality [1].

## II. THE NECESSITY OF ESTABLISHING MULTIPLE ASSESSMENT SYSTEM

The goal of engineering survey teaching position, both to reflect the characteristics of surveying technology as the subject itself, but also reflect the particularity of non professional surveying and Mapping Surveying Teaching; should pay attention to the engineering measurement technology with the synchronous development of modern surveying and mapping technology, but also pay attention to the differences between the different disciplines. Therefore, the aim of this course is as follows: through teaching, students can grasp the basic concepts, basic principle, basic engineering measurement skills; familiar with the theodolite level range finder, total station, GPS and other functions, and use the method of precision; familiar with the application of modern surveying instrument and technology in the whole process in the engineering construction; the competent general survey work in the process of Engineering construction [4].

The traditional assessment methods of engineering surveying course mainly in the final test, the total score = score (30%) and (70%) the final exam, the grades are mainly based on students' attendance, classroom performance, quality of work and experimental results were evaluated, the final examination mainly by close examination, subject selection, type fill in the blanks, short answer, calculation etc.. This method of assessment has the following limitations.(1) Focusing on knowledge content assessment, theoretical knowledge and memory knowledge are relatively large, ignoring students' ability to analyze and solve problems, which leads students to focus on theoretical knowledge and neglect practical ability in learning.(2) A single form of assessment, the traditional assessment methods based on the final exam, and ignores the evaluation on students' learning process, there is a prominent problem

of a test for success ", it is difficult to comprehensive, objective and fair evaluation of students' learning attitude, learning process, learning effect.(3) The limitation of evaluation subjects. The evaluation of curriculum assessment is only made by teachers. This evaluation method is not conducive to the cultivation of students' subjective consciousness, nor to the development of students' self-evaluation ability.(4) The purpose of the examination is utilitarianism, and the teachers' understanding of the examination tends to be task - oriented and formalized, and more students take the examination as the final result of the study. Finally, it leads students to "emphasize theory, practice less", "emphasize knowledge, despise ability", "pay more attention to results, and make light of process", so that examination and evaluation can not play the functions of guidance, feedback, encouragement and adjustment.

The method of curriculum assessment is not only related to the nature and characteristics of the course, but also closely related to the teaching mode of the course. With the integration of information technology and modern education in depth, the course of engineering survey carried out reform of the hybrid teaching mode, the teaching mode based on modern information technology, the traditional face to face classroom teaching and online learning (C-Learning) (E-learning), cooperative learning and innovative practice combination. The aim is to cultivate the students' ability to study independently, and to promote the students to build a knowledge system independently. The learning environment, learning mode and interaction type of blended teaching courses are different from traditional courses. Therefore, their assessment methods have their own characteristics in the aspects of examination contents, assessment methods, evaluation subjects and assessment indicators. Based on this, it is urgent to reform the multi assessment system of engineering surveying course.

### III. CONSTRUCTION OF MULTIPLE ASSESSMENT SYSTEM

According to the characteristics of the course of engineering surveying, combined with the training objectives and the social demand for talent security engineering talents in Colleges and universities, the main problems in curriculum evaluation mode, put forward the reform of curriculum evaluation mode is based on the principle of the check of the process and the ability to focus on learning the transition from evaluating learning achievement evaluation "to guide students from the" examination results "learning process" to focus on ", promote the students' effective learning, learning to test, to test and promote science, improve teaching quality, achieve the goal of cultivating high-quality talents of professional safety engineering.

Guided by the idea of "the whole process of diversification and capacity", the so-called "whole process" refers to the whole process of assessment accompanied by learning, such as follow-up test, unit test, online test, final

examination, etc., and extract information from multiple stages. The whole process assessment enables teachers to grasp the learning situation of students in real time, point out the problems existing in students' learning in time, and objectively and impartially evaluate each student's learning situation. "Diversification" refers to various forms of assessment, such as written examination, online testing, classroom discussion, online discussion, work communication, homework, learning report, personal reflection, curriculum paper and so on. "Capacity" refers to the focus of the assessment from "knowledge" to "test", the establishment of assessment in order to study the comprehensive ability and quality as the main content, promote the students' learning ability, practical ability, innovation ability and cooperation ability, realize the coordinated development of knowledge, ability and quality.

## IV. THE IMPLEMENTATION OF MULTIPLE ASSESSMENT SYSTEM

### A. Systematization of assessment content

According to the training objectives of professional personnel and the type and characteristics of engineering surveying course, the examination content of this course should be examined from three parts, knowledge, ability and quality, and the learning ability, innovation ability and comprehensive quality should be taken as an important index to measure student achievement.(1) Knowledge assessment: the core part of the curriculum knowledge system is examined, mainly in the examination with the hall, the stage online test and the final examination. (2) Ability assessment: mainly through the completion of independent, cooperative, inquiry learning tasks. This part is the focus of curriculum evaluation is difficult, is the main content of the process evaluation, in actual operation, the operation, group discussion, classroom evaluation report, PPT exchange group study report, personal reflection, course paper and other forms of students' learning task achievement. (3) Quality assessment: mainly from the students to complete the initiative of the learning task, team cooperation, innovation and other aspects of the examination [1].

### B. Diversification of assessment methods

In order to improve students' comprehensive ability and quality, the following assessment methods are adopted. (1) Test with the hall: in order to supervise the students to complete the preview of the knowledge points before class, the students' self-study situation is checked in the form of classroom questions or online tests. (2) Unit online test: at the end of each unit of knowledge learning, unit testing with multiple choice questions to determine the problem, fill in the form, the important concept and principle are mainly related to the unit, automatic marking by the network teaching platform, help students discover learning problems, for access. (3) Classroom discussion and online discussion: mainly based on problem discussion, exercise discussion and case analysis. Through interaction between teachers and students can analyze and summarize related

learning contents from multiple angles, digest and consolidate learned knowledge.(4) the classroom answer: in the classroom, the teacher designed the knowledge to answer the link, that is, the students do not have to raise their hands, can stand up and answer. This is helpful to exercise the agility of students' thinking, and to cultivate students' abilities of thinking, analysis and expression. (5) the learning task: each knowledge unit after the end of the study, students' personal or team to complete the unit learning tasks, task specific results have large operations, PPT communication, learning, reflective learning, course thesis report form, in order to test the effect of learning, deepen understanding, consolidate and strengthen the knowledge. (6) the task of learning the results show: on the one hand can be the result of students' learning tasks in open network teaching platform; on the other hand, also can let students introduce design ideas, learning achievement of the task characteristics on the platform, not only can help the students to learn from each other, questions and discussion, but also exercise the students' language ability [1].

### *C. The whole process of assessment and evaluation*

In the mixed teaching model, based on the theory of multiple teaching, the process of assessment should be completed, which embodies the integrity of the teaching process and the learning process. This course adopts the

"classroom performance + online learning cooperative learning + practice + final test + group evaluation method, the whole process of the evaluation method can effectively monitor the students" online "and" offline "learning, learning control and evaluation process of the students, the process of evaluation combined with the summary the whole course assessment evaluation.

#### *1) Process evaluation*

Based on the characteristics of teaching model reflecting the course characteristics, how to construct can reflect fair competition, arouse and maintain the learning enthusiasm of the students, to avoid the engineering measurement evaluation system of a test for success ", is the most critical assessment of structure and module allocation point system.

The evaluation of this course is based on the process evaluation (60%), which ensures the important position of the students' learning process in the teaching. Through process evaluation, curriculum assessment is one of the important means to guide and mobilize the enthusiasm of students' participation ability training. The performance of this course is composed of four parts: classroom performance, online learning, group cooperative learning and practice. The proportion and evaluation of each part are shown in Table 1.

TABLE I INDEX SYSTEM FOR ASSESSMENT AND EVALUATION OF COURSES

stage	evaluating indicator		Proportion of evaluation indicators	Evaluation description
first level index	second level index			
Process evaluation	Classroom performance	Attendance, classroom discussion, classroom answers, etc.	10%	Teachers' score and self-evaluation between groups
	Online learning	Online testing, discussion, length, etc.	10%	Record and score automatically from the network teaching platform
	Group cooperative learning	Leadership, cooperation, team, personal performance, etc	10%	Inter group evaluation and teacher evaluation
	practice	Experimental preparation	5%	Inter group evaluation and teacher spot check
		Experimental operation	10%	Inter group evaluation and teacher inspection
		Experimental report	5%	Teacher evaluation
Summary evaluation	Final test	Evaluation of professional knowledge	40%	The Department of teacher flow review each student's papers and the results are given

theoretical knowledge examination for the purpose of examination.

#### *2) Summary evaluation*

The course of summative evaluation (40%), by close examination questions, knowledge points are in strict accordance with the syllabus requirements, students' assessment of the main engineering measure of the basic concept, basic principle and basic skills test, focusing on the content of the students' ability to use learned knowledge and comprehensive analysis to solve the problem, the questions in the calculation the application, changed in the past purely

#### D. Diversification of evaluation subjects

In addition to teachers' evaluation of students, students' self-evaluation and mutual evaluation are also increased, emphasizing the main role of students in evaluation and emphasizing group cooperative learning. This helps students between the mutual supervision and mutual promotion, can not only help students adjust learning strategies to improve learning methods, improve learning efficiency, mobilize the enthusiasm of the students, but also help teachers fully understand each student in the group, is helpful to the reasonable evaluation of each student.

The innovative application of group cooperative learning to mobilize the enthusiasm of the students. There are about 5 people in each group, and team cooperation, cooperation and competition coexist. The cooperation within the group is embodied in the cooperation and cooperation of the members of each group according to the teacher's given task. The competition in the group is that all the members of the group have to vote democratically. By the way of peer review, the best performance of the group is determined and rewarded. The competition and cooperation among different groups were expressed as questions raised by each group according to the completion of their own tasks, and other members helped them to answer, and the reward points were satisfactory.

### V. THE EFFECT OF THE REFORM OF COURSE ASSESSMENT METHOD

#### A. Mobilizing students' learn initiative

Through the reform of the course assessment method, the students' enthusiasm for learning is obviously improved. The importance of strengthening the learning process evaluation process, guide the students to pay attention to the usual study, the final assessment of the pressure into motivation in the study, which requires students to prepare for the new lessons, timely review about knowledge for classroom questioning and classroom grab, make students learn from the classroom before class, extend to after class and extracurricular, let the students participate in classroom teaching.

A questionnaire survey of 60 randomly selected students to reform the curriculum assessment methods in the engineering measurement of mixed teaching model and traditional classroom teaching mode in which you love more answer, 100% of students choose "hybrid teaching mode"; performance appraisal process for engineering survey results and final exam scores 50:50, 60:40, 40:60 than the students accounted for 20%, 60%, 20%; for the current teaching practice, 80% of the students think that "very appropriate, do not need to change".

#### B. Stimulate students' interest in learning and improve their comprehensive quality

How to teach students to put aside textbooks, walk out of classrooms, broaden their horizons and increase their knowledge in their respective fields is a standard to evaluate the quality of examination system. The assessment system in the mixed teaching mode not only makes it possible but also greatly stimulates the students' interest in learning[3].The content of the examination by paying attention to the coordinated development of knowledge on ability and quality, according to the characteristics of the course, the examination form, strengthen the process of assessment, guide students to explore learning tasks, stimulate students' imagination, learning ability, practical ability, cooperation ability and innovation ability, the formation of scientific thinking. To improve the students' comprehensive quality and professional quality.

In this assessment mode, the process evaluation is 60% and the final examination is only 40%. Students' efforts in classroom performance, group learning, online learning and practice can improve their performance, instead of focusing on the exam time and conducting a surprise review.

#### C. The reform of teaching methods has been deepened and teachers have been promoted to improve the quality of teaching

The reform of assessment methods to promote the further deepening of the reform of the hybrid teaching mode, enhance the flexibility of teaching, students' main position has been strengthened, the students' comprehensive ability to use knowledge, problem-solving skills and professional quality, improve the overall quality of play a positive role in the.

The assessment of the curriculum reform is to further deepen the teaching reform of the course, teachers must study the teaching law, constantly sum up experience in teaching, improve the teaching quality, so as to promote and improve the overall quality of students' knowledge, ability, and truly achieve to test and promote teaching, in order to test and promote learning effect.

### VI. CONCLUSION

The main criterion of whether the examination system is scientific and reasonable is whether we have promoted and perfected the teaching methods and contents of teachers, whether it has aroused or aroused students' enthusiasm and interest in learning, and whether they have improved the teaching quality and the comprehensive quality of students. In today's hybrid teaching mode, course examination reform highlights the idea of cultivating high-quality talents, embodies the curriculum assessment process and diversity of ideas, play evaluation guidance, feedback, motivation, role, strengthen the comprehensive ability of students and the quality appraisal, the curriculum evaluation really play test effect of learning effect, promote the students from passive learning to active learning, so as to promote the

transformation of teaching mode and learning style, improve the quality of teaching. But at the same time, we should see that this system still needs improvement and improvement, such as reducing or even eliminating the fluke psychology of students.

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