

Research and practice of curriculum process assessment supported by information technology

Zhen Ren

Gansu University of Chinese Medicine, Lanzhou 730000, China

Abstract: Process assessment is an important method to evaluate the effectiveness of teachers' teaching and an important measure to supervise the continuous improvement of teaching work. In view of the current process assessment of teachers generally exist the lack of input energy, backward technology, feedback is not timely and other problems, this paper studies the information technology to support the curriculum process assessment model, the construction of curriculum process assessment framework, to promote teaching reform and teaching quality improvement.

Key words: process assessment; Information technology; Assessment mode

1 Introduction

At the present stage, profound changes have taken place in the teaching ideology and teaching mode of Chinese colleges and universities. It is the general trend to give full play to a variety of classroom teaching functions, promote the full development of students' personality, combine the information-based teaching methods and means, mobilize the enthusiasm of students' independent learning, improve teaching efficiency comprehensively. All these reforms urgently require the establishment of a more open and pluralistic teaching evaluation system which ADAPTS to them, so as to guarantee and promote the further development of our education and teaching reform.

In the school education system, evaluation is an important part of all educational activities, is an indispensable important link in teaching, it plays a vital role in the realization of teaching objectives, to the development and reform of teaching, to teaching management and decision-making. According to the different purpose of education, American educationist Scriffen divided educational evaluation into "terminal evaluation" and "process evaluation" two kinds. The final evaluation is also known as outcome evaluation, which measures whether the final effect of students' learning has reached the expected goal and gives the final judgment or conclusion. While the process evaluation focuses on the investigation and evaluation of the whole process of students' learning, emphasizing the process of helping students to understand, improve and realize themselves. The application of process assessment in teaching can immediately judge students' learning behavior, know whether students are focused on the attention, whether the key and difficult problems are mastered, whether various abilities are improved, and scientifically adjust the teaching progress and teaching content based on the feedback results. Therefore, it is not difficult to see that process assessment is beneficial to both teaching and learning. It can avoid the negative "teaching" and "learning" that students learn for the sake of testing and teachers teach for the sake of testing.

Process evaluation can respect students' interest in learning to the greatest extent, which is conducive to students' development of personal advantages. It also helps teachers to grasp students' real learning situation in the first time, discover problems in time and make targeted adjustments, control the pace scientifically, and guide students at different levels to grow and improve. At the same time, it will also promote the continuous improvement of their own teaching ability and level. Therefore, the planned implementation of process evaluation activities will definitely promote the improvement of teaching quality. However, it is not difficult to find that the evaluation mode widely used in colleges and universities is still based on "terminal evaluation", and the way is very simple. Most courses adopt closed-book written examination for assessment. Of course, this assessment method can play a positive role in strict teaching discipline and guarantee teaching quality. This assessment mode can not know whether the students have mastered the technical skills of the course, can not judge whether the students have the ability to analyze problems, use knowledge, independent learning; It cannot test students' ability to acquire knowledge of this course and their ability to innovate in practical application.

2. The main problems existing in the current process assessment

2.1 Lack of effective mechanism to promote process assessment

From construction to application, an effective process assessment system needs to be based on the characteristics of majors and courses as well as the accumulation and precipitation of teachers' teaching experience in order to achieve ideal results. However, there is a common situation in Chinese colleges and universities that "emphasis on scientific research rather than teaching", which inevitably leads to teachers putting a lot of time and energy into research, papers, awards and other hard indicators. Process assessment pays attention to the quality management of teaching in peacetime, it exactly needs to occupy a lot of teachers' time and energy to achieve a certain effect, compared with the final assessment is simple and easy, which is also an important reason why process assessment can not be effectively carried out at present.

2.2 The lag of evaluation technology hinders the development of process assessment

At present, Chinese universities all require course assessment to have the usual results, and strengthen the process assessment and multi-dimensional assessment. However, in the actual operation, there are many problems such as lack of standards in peacetime grades, arbitrary evaluation, too narrow evaluation content and single assessment method. First, courses in universities and colleges in our country

are often taught by large classes, with a minimum of 40 and 50 people and more than 100 people, which brings great difficulties to the process assessment. There are a lot of process assessment content and links. Under the situation of large class amount, the teachers have a huge workload, after class assignments, small papers, investigation reports, experiment reports, etc., all need the teachers to review, revise and evaluate the score one by one, the difficulty can be imagined. Second, the evaluation technology is seriously lagging behind. If there is any evaluation concept in theory, the corresponding evaluation technology and evaluation method should be adopted. But at present most teachers in our universities are obviously unable to adapt to the rapid change of information technology, and the techniques of evaluation data collection, scoring, analysis and visualization in the process assessment are lagging behind practical needs, which also objectively restricts the development of the process assessment.

2.3 Feedback lag makes it difficult to give full play to the advantages of procedural assessment

The purpose of process assessment is to improve existing problems in teaching and achieve better teaching effects, rather than to prove them. Therefore, process assessment emphasizes feedback, which itself plays the role of baton. For teachers, they can timely grasp the learning situation of students and make scientific and flexible responses, such as: Adjust the teaching progress, change the teaching strategy, supplement the teaching content, etc., which will help teachers better improve the teaching effect and lead the teaching process. For students, it is helpful to understand their own situation, find out the deficiencies and problems as early as possible, check the gaps and make up for the precise improvement and perfection, and improve their personal quality and ability throughout the whole process. Therefore, the process assessment can improve the teaching effect of teachers and promote the development of students, and realize the dual optimization of “teaching” and “learning”. However, due to the heavy workload, backward technology and other reasons, the feedback is not timely in the process assessment of colleges and universities, which will inevitably lead to the advantages of process assessment is difficult to give full play to, that is, it is unable to achieve “evaluation” to promote “reform”.

3. Use information technology to support the practice of curriculum process assessment

3.1 Basic thoughts of curriculum assessment mode reform

To construct a student-centered and teacher-led integrated process assessment system of “teaching, measurement, assessment and promotion”, make full use of information technology to reduce the workload of teachers in process assessment, make full use of information platform to promote the diversification of assessment content, assessment forms and assessment methods, and make full use of the network to track and optimize the teaching process in a timely and convenient way. Finally, the teaching feedback is fast and timely, the course assessment is comprehensive and accurate, and the maximum extent to ensure that the process assessment plays a reverse role in the teaching work.

3.1.1 Reform teaching methods and strengthen in-class assessment

Change the simple lecturing classroom teaching, promote the mixed teaching method based on “rain class”, give full play to the advantages of “rain class” simple and flexible, at the teacher side based on PPT teaching demonstration, at the student side through mobile phone wechat interactive question and answer and discussion. Teachers can carry out in-class assessment with the help of “Rain Classroom”, analyze in-class learning situation through data summary, and strengthen the understanding of students’ knowledge mastery. The content of assessment should cover the knowledge points required by the syllabus of the course, so as to avoid the narrowness, bias and deficiency of the assessment content. However, it is necessary to think carefully, carefully design a reasonable degree of difficulty, exceed the minimum requirements for students to master knowledge, appropriately separate the level, combine the important and difficult contents and constantly improve the examination question bank.

3.1.2 Strengthen online examination of experimental teaching

Experimental teaching should focus on ability test, but also closely follow the teaching objectives of the course. With the help of the “process assessment platform” independently developed by our school, students should evaluate the experimental situation of students. Students use mobile phones to complete experimental reports and test papers. On the other hand, the teacher conveniently collects the experimental documents formatted by students, which improves the assessment efficiency of the experiment. At the same time, the test paper focuses on the ability of students to analyze and design experiments, which plays a complementary and strengthening role in the assessment of the experiment, and makes up for the deficiency of delayed feedback of the experiment assessment.

3.1.3 Detailed assessment standards and accurate implementation of evaluation

No matter what process assessment method is adopted, a prerequisite is that evaluation standards need to be clearly defined. For quantitative evaluation, scores can be used to record evaluation results, while for qualitative evaluation, grades can be used to record evaluation results (which can also be quantified with weight). When setting this evaluation standard, high requirements are put forward for the design of course process assessment, because it is necessary to study and set an assessment baseline to measure whether the teaching objective is really achieved, especially for the teaching objective defined as “able to achieve... Project of competence, or “mastering... The knowledge objective of “mastering concepts and methods”. Therefore, both in the content of assessment and in the form of assessment, teachers need to elaborate and scientific design and implementation.

3.1.4 Attach importance to feedback and promote teaching

Evaluation results must have feedback. No matter it is question-and-answer discussion, in-class test, test sample paper or experiment report, evaluation results should not only be used to record the usual scores, but should be scientifically analyzed and then fed back to teachers and students. Only when evaluation results are reflected in classroom teaching, can assessment exert its influence on teachers’

“teaching”. Reflecting the results of the “learning” of students, forming a closed loop, it can be called process assessment. On the other hand, the process assessment is bound to be combined with the final assessment to form an external driving force to enhance students’ sense of gain and promote their learning initiative and enthusiasm. For the purpose of the process assessment, for the assessment of the same knowledge points, students should be allowed to improve their assessment results through repeated iterations within a certain period of time. For example, in a comprehensive test, if a student fails to get satisfactory evaluation results, he/she can be encouraged to submit them again after improvement. Only in this way can the reverse effect of the process assessment be fully brought into play, so as to mobilize students’ learning enthusiasm by taking grades as leverage, guide students to improve their learning strategies, change their learning methods, encourage them to pursue higher learning goals, and give full play to the advantages of independent learning. To improve their own shortcomings.

3.2 Construction of process assessment framework

According to the thinking of curriculum evaluation reform, the process assessment mode must have an assessment system and mode that is compatible with knowledge, ability and emotion (see Table 1), that is, to form a process assessment system that is compatible with the integrated teaching mode of “teaching, measurement, assessment and promotion”, with evaluation indexes, diversified assessment contents and diversified assessment subjects. Modern information technology provides necessary technology and means for it, and finally constructs the assessment and evaluation mode that combines process and finality.

Table 1. Process assessment framework

Evaluation module	Evaluation index	Evaluation content	Evaluation body	Evaluation method	Means of evaluation
Knowledge mastery	In-class assessment	Periodic unit tests of the course, the time and accuracy of completion	Teacher grading	A combination of process assessment and terminal assessment	“Rain Class” automatic marking
	Normal homework	Homework of each unit of the course, completion time, accuracy, unique insight	Student self-assessment	Process assessment	Process assessment platform
			Teacher rating		
	Cell phone self-test	Homework of various courses, active learning, time utilization, practice frequency	Student self-assessment	Process assessment (plus factor)	“Rain class”, Process assessment platform
	Online discussion	Group discussion on topics within a given range or on your own. The topic is novel, the viewpoint is innovative, the discussion is sufficient	Self-evaluation	Process assessment	QQ group, wechat group
Evaluate each other within the group					
Teacher rating					
Mutual learning	Actively ask questions about problems in your study to facilitate discussion	Teacher evaluation	Process assessment (plus factor)	Process assessment platform	
Professional competence	Lab reports	Experiment (practice) of each unit of the course, time and accuracy of completion	Students’ self-assessment	Process assessment	Process assessment platform
			Teacher rating		
	Self-directed learning	Comprehensive, designed experiments	Student self-evaluation	Process assessment	Process assessment platform
			Mutual evaluation within the group		
			Teacher rating		
	Professional questions and answers	Be able to think and ask questions or answer professional questions asked by others, analyze them clearly and be helpful to others	Student evaluation	Process assessment	Process assessment platform
Teacher rating					

Emotional attitude	Learning attitude	Attend class on time, never be late or leave early, think positively and answer questions actively in class	Teacher rating	Process assessment	“Rain Class” mobile phone automatic attendance
	Activity participation	Actively participate in all kinds of teaching activities, showing good organization and coordination ability, communication ability, innovation ability, etc	Self-evaluation of students	Process assessment	Process assessment platform
			Mutual evaluation within the group		
			Teacher rating		
	Applied information technology awareness	Actively use computers and mobile phones for after-class learning and feedback	Student self-assessment	Process assessment (plus factor)	Questionnaire star, QQ group, wechat group, process assessment platform
			Teacher rating		

4 Conclusions

Today, with the rapid development of information technology, education also needs to realize science and technology and modernization. The introduction of information technology to the curriculum process assessment is a comprehensive reform, is a teacher-led, student-centered new teaching and learning mode. Information technology provides all-round support for the implementation of process assessment, which can effectively reduce the workload of teacher evaluation, provide accurate data services, and improve the speed and efficiency of feedback. However, it should also be noted that procedural assessment is a kind of evaluation with a long period and a wide range of scope. Therefore, in the specific process of implementation, the evaluation criteria may change with time and vary from person to person. In addition, the process assessment needs to be carried out continuously, the use of information technology will also lead to the increase of evaluation costs, and the constraints of hardware and software conditions sometimes lead to the improper use of some evaluation tools, resulting in the formalization of evaluation situation.

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