

## Thinking on the Quality Problems of Course Formative Assessment in Higher Vocational Colleges Driven By Informatization

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### Abstract

"Internet + education" has become an overwhelming educational development trend at present, and informatization teaching is a hot spot as well as a difficult point in the research field of higher vocational education. Course assessment is an important link of informatization course teaching, in particular, courses based on formative assessment are more suitable for realizing dynamic whole process monitoring by means of informatization. Students' real-time learning effect evaluation data is an important basis for teachers to adjust teaching contents and methods in informatization teaching, therefore, this paper explores the quality problems of informatization course formative assessment in higher vocational colleges and how to ensure the accuracy and scientificity of online assessment evaluation data.

### Keywords

**Informatization; course formative assessment; quality.**

### 1. Introduction

At present, the traditional step-by-step, coherent, unified higher educational form based on the continuous development of Internet technology has been gradually broken, its root lies in that explosive development of the mobile Internet break the confines of time and space factors, therefore, a new higher educational form with the basic characteristics of personalized learning experience, multi-party communication and collaboration, dynamic process evaluation and service oriented to all members of society has been formed. Schools, teachers and students are all "nodes" and "terminals" on the Internet, every "action" in the teaching process is recorded in real time and accurately, teachers and students have become producers and users of big data. Formative assessment in the assessment system, which is also called as process assessment, it is an assessment action conducted in the teaching process, aims to control the learning process and check the progress of students' learning timely or regularly. When big data is combined with formative assessment, both teachers and teaching management departments accomplish dynamic whole-process monitoring of teaching effects, both improve teaching and teaching management methods through data analysis, moreover, the interest and effect of students' participation in course learning have also been improved.

Problems Raised

### 2. The Urgency of Establishing the Quality Concept of Formative Assessment of Informatization Courses in Higher Vocational Colleges

At present, under the background of the development of new economy and new form in our country, the development of higher vocational colleges has changed from scale expansion to advocacy of connotation construction to admiration of quality management nowadays, and forms a continuously improved endogenous power through self-diagnosis. Course teaching is the core of talent training in higher vocational colleges, and course assessment is one of the most critical links, which checks the teaching quality and provide reference for adjusting teaching plans and teaching implementation methods through assessment. In September 2014, Zhejiang Provincial Department of Education issued "Opinions of Zhejiang Provincial Department of Education on Really Strengthening the Academic Guidance and Management of College Students", in which it pointed out that the assessment should be reformed, the assessment mode combining formative and summative evaluation

should be popularized, and various forms of course assessment should be encouraged. The proportion of normal score in the total score is rationally determined and verified, the proportion of classroom performance, normal test, assignment evaluation and so on are increased in the score. "Opinions" emphasizes that the assessment modes of colleges and universities should be diversified, and highlights the important position of formative assessment in the assessment; the "one paper determines all" assessment mode no longer adapts to the inherent requirements of higher vocational colleges to control the quality of talent training.

With the development of Internet technology, the "Internet + education" mode has entered into classrooms of higher vocational colleges in different ways; various mobile teaching auxiliary tools are gradually used by teachers, students and teaching administrators, teaching activities are no longer limited by time and space, the online actions of teachers and students are recorded, stored, collected and analyzed in real time, the teachers give online evaluation scores on the students' usual performance, assignment, exam, discussion, group collaborations, etc., form formative assessment scores of the students' course learning, either they are all as a normal grade, either as part of the usual grades according to a certain proportion. Therefore, it is of practical significance to pay attention to the quality problems of the formative assessment of informatization courses and explore how to ensure its accuracy and scientificity.

### **3. Analysis of the Status Quo of Formative Assessment of Informatization Courses in Higher Vocational Colleges**

#### **1 Analysis of the Correlation between the Usual Score and Final Score of Different Courses by Using Informatization Means to Conduct Teaching**

The author counts the scores of 16 courses taught by 16 teachers in the two departments of the school (all use informatization means to conduct teaching activities), SPSS 13.0 is used to conduct the correlation analysis and unary linear regression of the usual score and final examination score of each course, the normal distribution of the usual score and final score and the correlation between the two are analyzed. The statistical results are as follows: ten of the sixteen courses show a correlation between usual scores and final scores, which account for 62.5%, six courses are unrelated, which accounting for 20%, and there no negative related courses. Among them, seven courses are significantly related, which account for 43.8% of the total, two courses are low linear related, which account for 12.5% of the total. It can be seen from the statistical results that only the usual scores of the seven courses are significantly linearly related to the final scores, while the usual score and final score of the nine courses are low linearly related or not linearly related or irrelevant, it shows that the reliability of the usual score in the student's academic evaluation is not high, the usual score has no significant effect on the final score, students with high usual score, whose final score may not be higher.

The reason may be that although the students with poor foundation have higher completion of the task assigned by the teachers (there may be plagiarism), they do not really understand the knowledge points and skill points; second, the formative assessment contents are not comprehensive enough, they are only limited to attendance, assignment, etc., there are no or very few papers, experiments, class discussions, phased tests, etc., which affect the overall evaluation of the teaching process; third, a few teachers have randomness in their score evaluation, lack basis and standards, some courses give high scores, and even have serious score phenomenon, which makes the usual results lack reliability and validity to a certain extent; fourth, some students have not changed their minds, and they are not aware of the importance of usual performance assessment for changing their learning methods and achieving independent learning, they are careless in their work, and even in some courses, students usually get very high scores, while their final exam scores are very low..

#### **2 Questionnaire on Formative Assessment Condition of Informatization Courses in School**

In order to understand the formative assessment condition of informatization courses in our school, the author completed the preliminary preparation of the questionnaire by consulting relevant literature,

consulting people in the industry, interviewing person in charge of a few majors and students, and compiled questionnaires for teachers and students, respectively, the first round of questionnaires collected a total of 89 valid teacher questionnaires and 1,631 valid student questionnaires, and participants covered all departments (secondary colleges)..

According to the results of the teacher-oriented questionnaires, 52.81% of the teachers have adopted the informatization teaching modes to conduct formative assessment for the students, among them, 58.93% of the teachers use this mode for less than one year; 73.21% of teachers use the check-in function of mobile teaching auxiliary tool, 69.64% of the teachers assign assignment online, and 62.5% of the teachers provide video resources for students to learn online, the above three functions are in the top three commonly used functions, and the popularity of classroom performance and test functions is lower than the first three, but they are higher than non-video resources, discussion and answer questions, group tasks and other functions; 53.57% of the teachers believe that the factor hindering the informatization of the course teaching is network problems, 46.43% of the teachers think that these tools are inconvenient to operate or the design is not personalized enough, and 41.07% of the teachers believe that the students' cooperation in the informatization course teaching process is not high, most of the functions are not fully utilized; 78.51% of the teachers set the score ratio of the informatization formative assessment to less than 50% of the usual scores; 55.36% of the teachers express that they had made a comparative analysis on the formative assessment score of informatization courses and the final examination score, among them, 48.21% of the teachers find that final examination score of students with high scores in the informatization formative assessment test is also high; 76.79% of the teachers express that they used platform statistics data for teaching analysis to improve teaching, among the teachers who do not use informatization means to conduct teaching activities, 24.24% of the teachers do not know that there are such mobile teaching auxiliary tool, and 42.42% of the teachers think these tools are troublesome to operate, do not want to use, 15.15% of teachers have used such tools, but they stop use due to bad effect; 78.57% of teachers believe that informatization formative assessment mode compares with traditional assessment methods, its advantage is easy to count and analyze, followed by real-time tracking, easy to archive, accurate data, and more.

According to the results of the student-oriented questionnaires, 71.49% of the students are willing to use the mobile teaching auxiliary tool for learning courses, but 17.04% of the students said that they did not like this way, and the teacher forced them to use it; 11.16% of the students reflected when using such tools, they are unable to participate in teaching activities due to network instability; 53.34% of students believe that the use of such tools can improve the enthusiasm and participation of the courses, but nearly half of the students think that the effect is generally good or not good; 72.29% of the students think that the interactive Q&A function of these tools is very good and can effectively solve the problems encountered in learning; 71.86% of the students express that they can consult the video resources and non-video resources pushed by the teachers on the platform anytime and anywhere, but 25.14% of the students said that they need to spend a lot of time to download and consult the resources; the main links for students to participate in informatization teaching include obtaining learning materials before class(78.85%), participation in classroom interaction(62.35%) and group collaboration (41.32%), assignment feedback after class(44.82%); 47.76% of the students think that the scores such as " experience value" can be used as a reference for judging the learning effect, however, it cannot be used as a basis for evaluating the learning effect.

#### 4. Existing Problems

According to the above research results of the author's formative assessment of informatization courses in the school, it can be concluded that the current formative assessment of the informatization courses has the following four aspects in the implementation process of higher vocational colleges:

1. The informatization of course teaching is still in the exploratory stage in the field of higher vocational education, it is not clear for teachers and teaching administrators how to use the mobile auxiliary tool and give full play to the functional advantages of these tools. At present, only functions

such as attendance, assignment, and tests are widely used by teachers for process evaluation, other interactive functions such as brainstorming, group discussion, and online Q&A have not been effectively applied. Moreover, the automatic statistical analysis data of the platform on teaching activities has not been effectively used for the early warning of the learning situation and provides reference for teachers to adjust teaching contents and teaching modes timely and so on, the teaching effect forced by the examination is not significant.

2. When using mobile teaching auxiliary tool, teachers encounter problems such as slow internet speed, inconvenient operation, and students are uncooperative, which affects the smoothness and effectiveness of the assessment process. Because informatization teaching requires a certain network environment support, there are differences in the informatization construction level in each school, therefore, to promote and popularize informatization teaching must rely on the construction of smart campus, if the network conditions cannot meet certain requirements, the informatization of course teaching cannot be realized.

3. The formative assessment process of the informatization course is mainly managed by the teachers and lacks supervision and evaluation. The key point of the assessment process is biased towards the teacher's evaluation of the student's course learning; ignore the supervision and evaluation of the teachers in the process of formative assessment. Moreover, because the formative assessment contents of the courses are more, the standards are different, and the supervision is weak, which cause some teachers to have unclear understanding for the purpose of formative assessment, and regard the formative assessment as a tool for "sending points", deliberately increase the proportion of the score of the formation assessment, and used as a means to raise the overall score of the final period, which seriously affects the authenticity and fairness of the assessment.

4. Formative assessment has certain course applicability, and not all courses are suitable for this assessment mode. If "sweeping approach" approach is adopted for all courses, it will be difficult to give play to advantages of the formative assessment and even play the opposite role. Taking some professional basic theory courses as examples, the content of the course is very difficult, students' self-learning space is small, it is not applicable to the assessment mode based on formative assessment, or the summative assessment mode is needed to test the theoretical learning effect of students, especially the mastery condition of key knowledge.

## 5. Improvement Paths

1. Formative assessment of informatization courses is to serve teaching and it is one of the means of testing the effect of teaching objectives, therefore, the formulation of formative assessment standards must be strictly based on the objectives of the course teaching, the contents of assessment and the proportion of scores must conduct reasonable design and demonstration. In addition to reflecting knowledge objectives, formative assessment criteria should also reflect skill goals, ability goals, and goals of emotions, attitudes, and values. After the assessment criteria are determined, the assessment modes are determined according to the specific conditions, for example, the assessment of knowledge objectives is still suitable for examination-based methods; actual operation mode is proper for the assessment of skill objectives, and the assessments of other objectives also have their applicable methods.

2. Explore the course assessment modes that fit the nature of different courses. The formative assessment of higher vocational education can be divided into five learning subject fields (AE), namely, assessment field of usual assignment a (A): assign part of the usual assignment as scoring assignment, and the scores are assessed according to the number and quality of the students' completed scoring assignment. Assessment domain of course usual learning performance (B): students' scores are assessed according to their attendance, learning attitude and classroom performance in the learning process and so on. Assessment field of phased score test(C): the students' learning status are tested after the end of the topic or unit teaching, and the scores are evaluated according to the quality of the student's answer. Assessment field of specially designed course

assignment (D): comprehensive assignment is designed for formative assessment according to course requirements; students' scores are assessed according to the quality of their assignment. Assessment field of Practical assignment(E): According to the practical teaching needs of the course, and the practical assignment is specially prescribed for formative assessment, the students' scores are assessed according to the quality completed by them (as shown in Table.1).

Table.1 Course formative assessment modes based on the nature of different courses

assessment mode	explanation	characteristic	suitable for course type
E(a,b,c)	the practical assignment assessment as the main, supplemented by usual assignment, usual learning performance, and phased performance test.	focus on practical teaching contents, supplemented by theoretical teaching contents.	professional core courses and professional development courses
A+B(c)	the usual assignment and usual learning performance assessment as the main, supplemented by the phased score test.	focus on theoretical teaching contents, supplemented by practical teaching contents.	public theory foundation course
A+B+C(d)	usual assignment, usual learning performance, and phased score test as the main, supplemented by the specially designed course assignment.	both theoretical teaching contents and practical teaching contents are equally important.	professional foundation courses

3. In addition to the technical advantages, formative assessment of informatization courses should also pay attention to the connotation and quality of the assessment. First of all, its task design should not simply transfer paper to the network, but give full play to the advantages of the network, urge students to learn and complete tasks timely, promote reflective learning, interactive learning and collaborative learning, and cultivate information quality. Secondly, the diagnostic evaluation function is integrated into the formative assessment, such as phased test and topic discussion; the teachers can check the students' cognitive defects and use real-time or non-real-time interaction to inform the students of their learning effects or problems, and put forward learning strategies and suggestions. The use of diagnostic evaluation function is conducive for students to improve self-reflection, form a good learning participation status and good learning habits, and promote students' independent development in the learning process.

## 6. Conclusion

The informatization of course teaching has become an overwhelming trend, more and more teachers have or intend to use informatization means to conduct teaching activities. The informatization of course teaching should not only be the simple teaching design and simple load of Internet technology, but also be the integration of information technology and teaching method reform; its purpose is to improve the quality of education and teaching, so as to benefit teachers and students.

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