

# Reform and Innovation of Course Examination and Evaluation in Colleges and Universities

Feng Wang

Zhoukou Normal University, Zhoukou, Henan, 466001, China

## Abstract

**In recent years, with the overall promotion of the liberal education, the reform of the evaluation and examination system in colleges and universities has been widely valued by all circles of society, and various regions have made active exploration and gained useful experience. However, the current evaluation and examination system is not yet in line with the requirements of the liberal education, which neglects the functions of improvement and motivation; focuses on academic achievement and ignores the overall development and individual differences of students; and focuses on results and ignores the process, the evaluation method is single, and a sound evaluation system of teachers and schools has not been formed yet.**

## Keywords

**Examination and Evaluation; Examination System; Academic Achievement.**

## 1. Raising of the Problem

At the National Conference on undergraduate education in Colleges and universities in the new era, Chen Baosheng, Minister of education, pointed out: "there should be both incentives and constraints for college students. We should change the way of examination and evaluation, and strictly evaluate the process... We should strictly control the export, change the situation that students can graduate easily, and truly embody the connotation construction and quality improvement in each student's learning achievements." This passage fully illustrates the necessity and urgency of the reform of examination evaluation in Colleges and universities.

[1][2][3] point out: Academic curriculum examination and teaching evaluation is an important part of teaching management in normal universities, which is also a powerful measure to test students' learning effect and promote management innovation. The main purpose of course examination is to check and evaluate the actual effect of teaching and learning. By summarizing the problems existing in the teaching process, it can promote teaching reform, guide students to study actively and creatively, and promote the cultivation of innovative talents in Colleges and universities. Not only that, course examination is also one of the important means to evaluate and improve students' innovative thinking and ability. A scientific, reasonable, innovative and dynamic examination and evaluation system is conducive to the cultivation of College Students' creativity and the cultivation of innovative talents needed for the construction of an innovative country; The unscientific, unreasonable, rigid examination system will stifle students' wisdom and creativity. Therefore, it is of great significance to actively and steadily reform the curriculum examination evaluation system for promoting innovative education, improving teaching quality, cultivating high-quality innovative talents and promoting the reform of higher education. Through the investigation, we find that there are still some problems in the academic evaluation and examination innovation methods in normal universities, which can not meet the urgent needs of higher education reform and innovation and students' growth. Therefore, based on the background of higher education in the new era,

it is imperative to promote the innovation and development of academic curriculum examination and teaching evaluation system in local normal universities.

It is found that there are some problems in the examination and teaching evaluation of academic courses in local normal universities:

First, the assessment method and academic evaluation system is single. Most schools' academic evaluation is basically a test paper, that is, a test paper evaluates students' learning situation and teachers' teaching performance in a semester. As a result, we only pay attention to the assessment of a single dimension of knowledge, but ignore the measurement of ability, emotion, attitude and values, which leads to the one-dimensional development of students and is criticized as "high score but low ability" by the society;

Second, the assessment methods and academic evaluation system are unscientific. The student academic evaluation system is mainly composed of evaluation content, evaluation methods and evaluation standards. The evaluation system must be based on the curriculum standards, based on the reality of teaching and learning, combined with the school running concept and characteristics, reflecting the school-based. According to the different learning output, the evaluation is lack of skill, which can not reflect the students' personality and specialty comprehensively and truly, and frustrates the students' learning enthusiasm;

Third, it pays too much attention to the result assessment, but neglects the process assessment. It only pays attention to the students' final examination results and neglects the monitoring of the students' learning process, which leads to students taking notes in class, making notes after class, reciting notes in the exam and completely forgetting in the exam;

Fourth, we failed to correctly understand the academic evaluation, simply understood classroom Q & A, common test, homework evaluation and experimental report as formative evaluation, and the operation was not standardized. We gave scores at will, and finally everyone passed the test, and everyone was happy. Only on the basis of finding out the crux of the problem, we need to follow the law of education and carry out targeted reform and innovation in all aspects from concept to operation.

Fifth, it fails to highlight the requirements of Ideological and political education. Some Curriculum Examinations and teaching evaluation do not highlight the elements of Ideological and political education, and do not attach importance to the integration of theoretical knowledge, values and spiritual pursuit of Ideological and political education into various courses, which fails to give full play to its influence on students' ideology and behavior.

## **2. The Process and Method of Solving Problems**

In view of the above problems, the research group takes Zhoukou Normal University as a pilot to promote the reform and practical exploration of academic curriculum examination and teaching evaluation system.

### **2.1. Revise the Syllabus of Course Teaching and Assessment, and Clarify the Assessment Contents, Methods and Evaluation Methods**

The syllabus and examination syllabus provide the basis for the implementation of teachers' teaching and students' academic performance evaluation. At the same time, we can judge whether teachers' teaching is based on the syllabus through students' academic performance evaluation. In the past, the teaching and examination syllabus focused on knowledge standards, the skills students should master, the degree of practical ability and the effect of Ideological and political education. These evaluation standards were not reflected in the teaching and examination syllabus. In the past, it focused on the "should know" of students, but did not describe the "can do" and the degree of doing, that is, it lacked the content framework of students' learning achievement evaluation standard. Therefore, in order to ensure a high

degree of consistency between the assessment syllabus and the syllabus, and to ensure that the students' evaluation objectives return to the internal requirements of the syllabus, we first require all teaching colleges to revise the syllabus. On this basis, we formulate the assessment syllabus of the course, and clarify the specific objectives of each specific knowledge point in the syllabus, such as memorizing, understanding, and using; Clear the proportion of process assessment and final assessment; Clearly list the content details of the process assessment, the evaluation standard of each item assessment and the proportion of each item assessment; One week before the final examination of the course, the assessment results of the course process should be reported, so as to avoid the process assessment results from the final examination results. The school's educational administration department and supervision department review the teaching and examination syllabus of each college, put forward modification opinions, and feed back to each college for improvement.

## **2.2. Establish and Improve the Evaluation System of Students' Academic Performance based on Standards**

Evaluation is built on the basis of the assessment program, there is an assessment program first, then there is an evaluation, and the assessment program determines the evaluation. The objective, content, judgment and result standard of evaluation are all derived from the assessment outline. The design of evaluation precedes curriculum design. The goal of evaluation guides the setting of teaching and learning goals, promotes the achievement of teaching and learning goals, and promotes students' learning. Standard based evaluation is not to evaluate or compare students, but to find the gap in the process of achieving goals, so that students can timely understand their progress, judge their achievements, monitor their development, and know their advantages and disadvantages in the process of learning.

## **2.3. Improve the Assessment System based on the Characteristics of Disciplines and Courses**

First, the assessment of theoretical courses. In accordance with the principles of "emphasizing foundation and application" in culture, history and management courses, "emphasizing practice and innovation" in science and engineering courses, and "emphasizing theory and skills" in art and sports courses, various examination modes are set up according to the characteristics of different disciplines, such as paper and pen closed examination mode, oral examination mode, full open examination mode, half open and half closed examination mode. There are three assessment modes: Test Bank assessment mode, paperless network assessment mode, one page open book and half open assessment mode, project design or thesis defense assessment mode, scenario simulation assessment mode, whole program assessment mode (usual test + thesis or survey report + learning or stage summary + big homework + discussion Defense + attendance + final assessment), etc. Taking public basic courses as an example, public elective courses can adopt full open book, half open and half closed, thesis defense and full program assessment; Public compulsory courses, ideological and political courses: open book, half open and half closed, test question bank of teaching and examination separation, thesis defense, full program assessment; Basic computer (including program design) courses: paperless online examination, test bank with separation of teaching and examination, project design, full program examination; Foreign languages: closed book examination, paperless online examination, test bank with separation of teaching and examination, scenario simulation assessment mode and full program assessment; Mathematics and physics courses: test bank examination mode of teaching and examination separation, full program examination. Second, the assessment of experimental courses. In order to break the traditional experimental assessment system which only depends on the experimental report to determine the students' experimental results, strengthen the process assessment, in addition to the experimental operation records, experimental reports, the actual field operation ability assessment, but also

take oral examination, defense and other ways to assess the students' experimental preparation, experimental operation specification, experimental phenomenon observation, experimental result analysis and so on.

Third, the assessment of training courses. According to the characteristics of training courses, process assessment can be adopted: assessment of students' learning process materials, notes, homework (works), learning summary, etc; Project assessment: provide project application and project feasibility study report or a planning and design drawing and reply; Training report: submit training process record and complete training report.

### 3. Main Contents of the Achievements

After the reform of examination and evaluation in some subjects and specialties, Zhoukou Normal University summed up experience in time, found problems, found deficiencies, and gradually formed a good reform plan, which was widely welcomed by students and teachers. The main points are as follows:

First, change "single centralized" assessment to "multiple decentralized" assessment.

"Centralized single" examination evaluation mode will lead to students "loose before and tight after". In the process of teaching, students ignore learning because they can't feel the pressure of the examination, and they rush to study and overdraw because of the pressure of the examination near the end of the term. In this mode, students are not only difficult to achieve ideal results, but also easy to "forget after the test" because of simple understanding and shallow memory of knowledge points. In addition, the "centralized single test" evaluation system will induce "exam oriented learning" on campus, and many students will not learn what they want to learn and what they don't. Moreover, compared with senior high school students, college students are more likely to know the content of the test questions and be more able to "highly accurate" review and prepare for the exam by drawing the key points and finding the test questions. Therefore, the learning content will be narrower, the learning effect will be worse, and the learning behavior will be exam oriented.

For knowledge-based courses, it is helpful to urge the students to strengthen their daily learning to replace the centralized single test evaluation with the decentralized continuous test evaluation mode. This kind of course is based on scattered knowledge points and their knowledge units, which have high requirements for the accuracy, continuity and firmness of learning. The "decentralized and continuous" examination evaluation mode combining classroom test, unit test, mid-term test and final test has obvious advantages. Because the "decentralized and continuous" examination evaluation mode runs through the examination pressure throughout the course learning. Every class has a pre class test, and every unit has a unit test. This requires students to actively review after class, carefully complete their homework, and constantly grasp the study. The "decentralized and continuous" examination evaluation system -- learning, testing and speaking at the same time, helps students realize the blind spots and lack of learning in time, and makes clear the next step of key learning direction, so that the examination becomes a continuous promotion rather than a simple termination evaluation in the learning process. In addition, the essence of "decentralized and continuous" examination evaluation mode is to strengthen the supervision, inspection and feedback of students' learning. Through the purchase of learning software such as xuexitong and Chaoxing, the school's education and teaching information level is increasing day by day, the teachers' in class examination becomes simple and easy, and the implementation of "decentralized and continuous" examination evaluation mode is more convenient and efficient.

Second, change "single knowledge" assessment to "knowledge and ability two-way" assessment. The traditional examination mode of single knowledge has a single goal, rigid content and outdated way, which can not meet the needs of talent training and education development in

the new era, because knowledge is public, ability is individual, knowledge is abstract, ability is concrete, knowledge is already, ability is not yet; Professional knowledge only represents the shallowest part of professional ability, while ability is the embodiment of transforming external knowledge into individual behavior. The key to the difference between knowledge and ability lies in the fact that ability is inseparable from human beings. Ability has the complexity, difference and instability of human beings. The evaluation of ability is much more complicated and subjective than knowledge. Therefore, based on the "high-level application-oriented" school running goal and talent training goal of our university, the examination reform focuses more on cultivating students' generative ability in the process of using knowledge to solve real problems. There are two characteristics of "knowledge and ability two-way" evaluation mode; The first is the combination of written examination, thesis, interview, simulation and other forms to assess students in multi-dimensional and deep level; The second is to assess the students in the field of specific courses, with real social problem solving as the main content. Third, reform the way of examination management and highlight the main position of examination management in secondary colleges.

In recent years, our school has been trying to reform the examination management mode, implementing two-level management. The school is responsible for the overall planning of curriculum assessment, formulating curriculum assessment policies, supervising and evaluating the quality of curriculum assessment. As the main body of curriculum construction and management, the college is fully responsible for the examination organization, operation and management of the courses offered by the college. The three-level responsibility system of University, college and teaching and research office is adopted, that is, the school is responsible for the unified deployment, the college is responsible for the audit, and the teaching and research office is responsible for formulating the assessment outline, organizing the final proposition and establishing the test bank of the course according to the syllabus and professional training plan.

Fourth, the establishment of standardized examination room, improve the supporting measures.

In recent years, according to the requirements of the national examination room, our school has built a standardized examination room with mobile phone shielding device, metal detector, full video, real-time monitoring. The examination of students' professional courses is arranged in the standardized examination room. The school leaders and the staff of the Academic Affairs Office will monitor the organization and operation of the professional courses in each college in the general monitoring room of the standardized examination room. At the same time, the school consists of the academic affairs office, the supervision office and the student office to form a patrol examination group, which randomly goes to the teaching building from time to time to spot check the examination situation of professional courses. The establishment of standardized examination room is a constraint to invigilators and a deterrent to students. The rate of students' violation of discipline decreased significantly.

Fifth, we should make full use of big data and artificial intelligence to innovate academic examination and evaluation methods.

In view of the increasing trend of the current network courses, our school vigorously promotes the informatization and paperless of the examination, promotes the construction of the question bank of each course and the construction of the online examination platform. With the help of artificial intelligence and data mining technology, we actively carry out the construction of smart classroom, and use the platform to comprehensively collect and gather classroom teaching behavior data, process data and result data, and use data mining, intelligent analysis and other technologies for intelligent processing. Actively through the usual assessment, attendance, student class data for learning association analysis and evaluation. Actively carry

out real-time assessment in class. By integrating the real-time assessment into the smart classroom, in class, through the interaction between students and teachers, resources, platforms and other multi-directional interaction, to assess students' learning, positive learning attitude, learning effect and other situations, timely remind. Improve the index system of wisdom, add more assessment units and improve the assessment indicators. According to the factor analysis method, the interaction index of interactive students, students' learning attitude towards teachers and intelligent platform, and the effect are calculated, so as to improve the quality of teaching. Carry out the application of learning behavior analysis. Learning behavior data is the most important data reflecting the process of smart classroom teaching. By combing the possible factors from the aspects of students' subjective behavior, objective behavior, teaching strategies and learning environment, and using the means of correlation analysis, significance test and factor analysis in statistics, this paper explores the main indicators affecting academic performance. On this basis, by using association rules mining technology and visual display method to study the learning behavior sequence of different groups of students, we can further find the differences of individual students' learning behavior, and provide an important means to explore the influencing factors of students' learning process. Online examination does not need to emphasize the form of closing or opening the paper too much. It should pay attention to the ability of students to master and use knowledge points. When preparing the examination questions, it should pay attention to guide and give play to students' active thinking ability and knowledge point extension ability.

#### **4. “Effect and Reflection” Needs to Explain What Kind of Practical Effect the Achievements have Achieved, What are the Shortcomings and the Problems that Need to be Further Explored**

After the project was approved, the Academic Affairs Office of our university and the departments of various teaching colleges held several teaching examination meetings to discuss the reform methods and implementation plans. After many discussions, the reform plans and specific implementation methods were determined. Among them, there are not only the overall requirements covering all majors in the University, but also the pilot units for different disciplines. Taking the ideological and political theory course as an example, this paper implements the comprehensive evaluation scheme of usual performance (classroom discussion, homework, attendance) + practical teaching + final examination. In the practical teaching, activities are carried out in groups to encourage students to go to the society, understand the social conditions, national conditions and people's conditions, conduct research on a certain social phenomenon, and write research reports, which not only broaden students' horizons and increase their understanding of society, but also exercise their ability to communicate with people, work in teams, and explain on stage, and improve their comprehensive quality. It has achieved the goal of diversified training and has been highly praised by students and teachers. In the examination of professional courses, we should take the examination reform as the breakthrough, adhere to the application ability assessment as the center, improve the students' academic evaluation system supporting the cultivation of application-oriented talents, give full play to the baton role of assessment and evaluation, and guide teachers' Application-oriented Teaching and students' Application-oriented learning. Through the organic combination of teaching and learning, we can achieve the goal of comprehensively promoting quality education and cultivating innovative talents.

In the process of promoting the reform of the examination and evaluation system, we deeply feel that the reform of the examination and evaluation system is related to whether the talents trained by the school can adapt to the new situation of the rapid development of modern society, and is related to the future scientific and sustainable development of higher education. Modern

education also takes the cultivation and development of students' subjectivity as an important goal, requiring students not only to learn to learn, but also to learn to research and innovate. Education administrators and workers should give full play to the "guiding" function of the examination and evaluation system, guide students to develop in the direction of innovative education in the real sense, and cultivate a large number of high-quality talents who can learn, are diligent in thinking, have innovative spirit and innovative ability to meet the needs of knowledge economy society. Based on the requirements of modern higher education for talent cultivation, the evaluation system of teaching activities in colleges should be reformed accordingly, such as adjusting the examination content, reforming the examination form, investigating students' knowledge structure from different angles, inspiring and guiding students to cultivate independent thinking, exploring and innovative spirit in the process of solving problems, and improving students' learning enthusiasm and initiative.

Of course, in the process of promoting the reform of the examination and evaluation system of students' academic courses, due to the great differences between different disciplines and different majors, some reform programs have achieved remarkable results in one course, but they may not be suitable for another course. Therefore, it is necessary to continuously improve the reform programs and accurately implement policies in combination with practical work and specific curriculum teaching objectives, We should really promote the examination and evaluation of courses to achieve results, and promote the all-round growth of college students.

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