

Research on Application of Full Credit System in Theory-Practice Integration Teaching Reform

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Keywords: full credit system, theory-practice integration, teaching reform, occupational qualification certificate

Abstract: With the development of education reform, traditional academic year credit system is facing more challenges to satisfy the characteristic demands of the students. Also, the traditional "theory-practice separation" teaching module could not meet the needs of cultivating compound talents. This paper, based on the practice of combined reform of full credit system and theory-practice integration teaching, tries to build a deeper integration of degree education courses and occupational qualification certificates, therefore helps to improve talent cultivation with high quality and creativeness.

1. Introduction

The complete credit system refers to a teaching management system based on the premise of course selection, with credits and grade points as the measurement units of quality and quantity of students' learning, with the minimum credits as the graduation standard, adopting various education methods and more flexible process management mode. At present, course selection is mostly carried out in theoretical courses, but seldom applied in practical courses. Theory teaching and practice teaching complement each other and are indispensable in vocational education teaching system. Theory teaching is the basis of practice and knowledge reserve. Practice teaching is the enhancement of theory teaching and the sublimation of students' innovative practice ability. In the traditional teaching process of higher vocational education, theory and practice are relatively independent. Colleges and universities have the responsibility and obligation to speed up the process of the reform of the integration of theory and practice under the complete credit system, so as to better highlight the industry characteristics in the teaching system of the integration of theory and practice, respect the quality characteristics and individual differences of students, cultivate the innovation awareness of students, stimulate the potential of students and improve talent cultivation quality.

2. The Historical Process and Existing Problems of the Complete Credit System

The outline of National Medium and Long Term Education Reform and Development Plan (2010-2020) clearly points out that we should pay attention to individualized teaching, to the advantages and potential of each student, and launch the reform of teaching management system such as stratified teaching, class system, credit system and tutor system [1]. The credit system originated from the course selection system, which successively experienced two stages: the academic year credit system and the complete credit system. In 2013, Dr. Chen Tao of Xiamen University reflected on the "wrong way" in the past credit system reform in "re exploring the credit system - the formation, development, problems and prospects of the credit system", and re studied the existing problems and solutions of the credit system from the development and essence of the credit system [2]. In 2014, Dr. Zhu Xuebo of Wuhan University elaborated the problems in the process of implementing the complete credit system from the perspective of curriculum, teachers and management, and put forward the corresponding countermeasures [3]. In 2016, Zhao qiongmei explored the credit system based on the modern apprenticeship training mode [4]. So far, there is little research on the application of credit system after the reform of the integration of theory and

practice. In the process of the reform of the complete credit system, there are several problems to be solved as follows:

First, available optional courses are insufficient. The implementation of the complete credit system requires a large number of courses for students to choose, but at present, due to the shortage of school classrooms, practical equipment and other hardware, the number of optional courses is insufficient, which affects the autonomy and personality development of students to choose courses.

Second, there is a shortage of teachers. The implementation of the reform requires not only hardware facilities support, but also sufficient and qualified teachers to match. However, the number of high-quality teachers, especially those with profound theoretical foundation and rich practical experience, has become a short board in the reform of the complete credit system.

Third, the content and facilities of practical teaching are outdated. With the rapid development of civil aviation industry, the continuous emergence of new models and technologies means that the maintenance technology is also constantly updated. The practical teaching content and training facilities in colleges and universities are often far behind current application and development of industry technology. It's unable to mobilize the enthusiasm and creativity of students, which is not conducive to the growth of students.

Fourth, the difficulty of teaching management increases. Full credit system advocates independent course selection, students' will select courses crossing majors, departments, colleges and grades. Also, the substantial increase appears in the re-selection, withdrawal and evaluation of courses, the workload doubled in course arrangement, classroom arrangement, practical training arrangement, achievement assessment, student status management and so on.

3. The Teaching Reform Measures of the Integration of Theory and practice Under the Complete Credit System

Under the traditional academic year credit system, students still study in the administrative class, which makes the course selection and teaching difficult. In order to improve the quality of teaching reform, we must strengthen the research and construction in the real integration of theoretical and practical courses, the setting of curriculum modules, the construction of double-qualified team, the integration of professional courses and 1 + X certificates, and innovative practice.

1. High integration of theoretical and practical courses under the complete credit system

After the reform of the integration of theory and practice, the boundary between theory and practice courses has been blurred, so the students will carry out practical operation training after learning a certain theoretical knowledge in the classroom. However, at present, most of the theory courses adopt large class teaching. If the same teacher arranges the theory and practice training teaching, it will cause the practice training to float in the form, which cannot support the theory teaching, also bring huge hidden danger of practice training security. This problem can be solved by system of selecting teachers and courses throughout the whole process.

Colleges and universities can set up a dynamic teacher database covering all the theoretical and practical teaching modules. In the theoretical part of each course, there are at least two or more teachers available for students to choose, and more practical teachers. After learning a theoretical knowledge module, students can choose their own training teachers and class time in the teaching management system according to their own needs and characteristics and complete the corresponding training content. The number of students selected by each training teacher is strictly limited by the course selection system, so as to ensure the teaching effect and the safety of the teaching process. Different theoretical and practical teachers must strictly implement the training plan and curriculum standards to ensure the achievement of teaching objectives, ensure the quality of teaching and unify the evaluation standards. After finishing the learning of a certain module, students continue to learn the next theoretical module and practical training module.

2. Expand the integration of academic education and vocational skill certificate training

The implementation plan of National Vocational Education Reform clearly points out that starting from 2019, the pilot work of "diploma + several vocational skill level certificates" system (1 + X certificate system pilot) will be launched in vocational colleges and application-oriented

undergraduate colleges, and the recognition, accumulation and transformation of learning achievements embodied in diploma and Vocational skill level certificates will be carried out orderly. "1" means the diploma, and "X" is the number of vocational skill level certificates. "1" is the foundation, and "X" is the supplement, reinforcement, and expansion of "1". Academic certificate and vocational skill level certificate are not two parallel certificate systems but connected and integrated with each other [5].

Therefore, when formulating the training plan for professional talents, colleges and universities should take the teaching of academic education and the training of vocational skill level certificates into consideration as a whole, reasonably arrange the teaching content, teaching organization form, practical training projects and standards, teaching arrangement of teachers, etc., so as to achieve unified planning and implementation in the same step. The curriculum of academic education focuses on the accumulation of knowledge, and the training of vocational skill certificate focuses on the cultivation of practical ability. Therefore, the integrated curriculum of theory and practice is the best carrier for the implementation of 1 + X system.

Due to the overlapping of academic education and skill certificate training content, the academic education and vocational skill level certificate training courses can be added to the curriculum list and defined as professional elective courses when formulating the 1 + X talent training program of the major. Making full use of the advantages of the complete credit system, students only need to choose the same or similar courses once, and their scores are mutually recognized, so that students with different needs have full freedom and right to choose courses suitable for themselves. This can not only promote the organic integration of academic education courses and vocational certificate training courses, but also realize the organic connection of professional course teaching standards and vocational skill certificate level standards. It also achieves the mutual integration of the two systems, improves the running level of colleges and universities, reduces students' academic burden, shortens the training cycle, and truly realizes the integration of academic education and vocational certificate training.

3. Innovative practice

Innovative practice is one of the important measures of the curriculum system reform of the integration of theory and practice in order to meet the goal of multi-level talent training in higher vocational colleges. It belongs to the characteristic practice curriculum and can promote the personalized development of students. Through the integration of a series of theoretical and practical teaching courses inside and outside school, we can create a multi-dimensional learning environment including classrooms and enterprises, pay attention to the cultivation of students' ability to acquire knowledge independently, comprehensively use knowledge to solve problems, with independent innovation. At the same time, the new technology, new process, and new method of industry enterprises are integrated into a whole process of talent training. Innovative practice needs to be coordinated with tutorial system reform. Mentors can not only guide students in choosing courses and other academic aspects, promote the construction of students' professional knowledge system, but also guide students in innovative practice programs, and ensure that the corresponding practice programs are advanced and operational. In addition, tutors can combine their own scientific research projects with students' practical training, give full play to students' creativity and stimulate their enthusiasm for learning.

The quantity and quality of innovative practice courses is a process of continuous accumulation. Colleges and universities should increase investment, focus on supporting the construction of a batch of courses that can effectively improve students' innovation ability as a priority, encourage teachers to develop high-quality curriculum resources, and create innovation teams. Also, it is important to establish a corresponding assessment mechanism, gradually improve the reform of the salary system, and encourage the innovation team to open more courses.

4. Construction of Teaching Management Platform and System Guarantee System Suitable for Complete Credit System

The reform of teaching management system is inseparable from the guarantee of stable operation

of teaching management platform. Teaching management is an organic combination of teaching and learning, a management mode with teachers as the leading role and students as the main body. The teaching management platform includes five modules: course resource management, course selection system management, teaching process management, teaching evaluation management and student status management.

The course resource management module includes the upload and download of PPT, micro course, test questions and other resources; the course selection system management module is responsible for providing teachers' information for students to select courses, and also provides the function of dropping and changing selection; the teaching process management includes the module before, in and after class, and the module before class provides the preview function, while the module in class provides the class attendance, question, answer, group discussion and test. After class module provides a platform for communication between teachers and students, through which teachers can answer questions; teaching evaluation management system can realize mutual evaluation between teachers and students; student status management system is the support of complete credit system, which can realize credit statistics based on credit system, cross college credit mutual recognition and other functions. With the development of Internet plus education, large-scale online open courses (MOOC) can also be integrated into student selection and learning management platform, information technology support to improve teaching management level.

In order to ensure the smooth operation of course selection and give full play to the students' right of independent choice, corresponding rules and regulations must be taken as the guarantee measures. The reform of credit system involves the management system of student status, teaching organization, student management and examination management. One of the key points of system construction is to study the separation of teaching and examination system under the credit system. In order to prevent students from selecting easy courses and avoiding difficult ones and effectively test the teaching effect of teachers and the quality of students' courses, it is necessary to separate teaching from examination and improve the fairness and reliability of examination results. The management of student status is a difficult point in the process of implementation. According to the actual situation of students' studying courses, we should establish corresponding regulations on the management of student status, such as early or late graduation, suspension, resumption, and transfer, to ensure the efficient and order operation of credit system.

5. Strengthen the Cooperation Between Schools and Enterprises, Root the Complete Credit System in the Teaching Reform of the Integration of Theory and Practice

The report of the 19th National Congress of the Communist Party of China proposes to improve the vocational education and training system, deepen the integration of industry and education, and enhance school and enterprise cooperation. The credit system teaching mode advocates employment-orientation, learner-centered, and the cultivation of complex talents required by the industry. In order to achieve this goal, we must deepen the cooperation between schools and enterprises, encourage enterprises to participate in the teaching process of colleges and universities, and achieve the situation of "three wins" among students, schools and enterprises. Therefore, it is necessary to establish and improve the cooperation mechanism of joint development of courses and practical training projects between colleges and enterprises, so as to make the teaching behavior of schools closely combined with practical operation in industry enterprises. Guided by the needs of the enterprise and based on the training plan jointly formulated by the school and the enterprise, it is necessary to tailor the course of integration of theory and practice, as well as the opportunity for students to follow the on-job internship. It fully respects the interests and individual differences of the students, meets the differentiated needs of the workers in different positions of the enterprise, and realizes a good connection between the school teaching activities and the production of the enterprise. Through the study and practice of work study alternation, students can not only fully stimulate their potential, but also better understand themselves, to adapt to the enterprise and go to work better.

6. Summary

The application of the complete credit system in the teaching reform of the integration of theory and practice is a systematic project, and there are many problems to be studied and solved. The school should be guided by the cultivation of students' comprehensive ability and personalized development, take the reform of the integration of theory and practice under the complete credit system as the goal, vigorously promote the implementation of the "1 + X system" as the starting point. School also need to construct information-based teaching platform and management system as the guarantee, and implement the reform of the "integration of theory and practice, information technology and credit system", so as to provide impetus for the further development of vocational education Power.

7. References

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