

# Research on the Assessment Mechanism of Integrating Vocational and Creative Education in Higher Vocational Colleges

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**Abstract:** Since 2018, the requirement for vocational colleges to implement the integration of specialization and innovation in education has been proposed by the Chinese Ministry of Education. Chinese universities have started to comprehensively launch and promote it. At present, most universities focus on the construction of professional training objectives, curriculum systems, and other aspects, and have achieved many constructive results. However, there have been few studies or reforms on the evaluation mechanisms corresponding to these research practices, and traditional evaluation mechanisms are still being used. In response to the inability of traditional assessment mechanisms to adapt to the teaching reform model of school enterprise cooperation and innovation integration, this article proposes relevant reform suggestions for theoretical learning, practical learning, and independent innovation, and provides specific case studies for implementation.

## 1. Introduction

In recent years, the global economic development environment has been poor and the recovery is weak, while the domestic economy has also been affected to some extent, leading to transformation, optimization, and structural adjustment [1]. Enterprises have also adjusted their demands for employees, no longer limited to only considering their professional abilities [2]. In 2018, the Ministry of Education proposed that vocational colleges need to implement the concept of "integration of specialization and innovation" in education, which means that relevant content of innovation and entrepreneurship education should be organically integrated with professional education, ensuring that innovation and entrepreneurship education runs through the entire process of talent cultivation system, rather than existing independently [3]. Due to the fact that most of the scientific and technological research projects of vocational college teachers are applied research projects to help enterprises solve practical problems, and there are relatively few basic research research projects, in order to promote the development of "specialized innovation integration" in vocational colleges, it is necessary to continue to deepen school enterprise cooperation, combine enterprise applied research research projects with education and teaching, that is, to integrate and gather scientific research resources and educational resources, and form a new model that promotes educational development, supports scientific research and industrial development [4]. With the reform and development of teaching modes, the traditional assessment mechanism is obviously no longer applicable. Therefore, it is necessary to study and practice the assessment mechanism of vocational colleges' vocational and creative integration teaching under the background of school enterprise cooperation, in order to better meet the practical needs of talent cultivation.

## 2. Research Background

Since the Ministry of Education proposed in 2018 that "vocational colleges need to implement the concept of integrating innovation and specialization in education", various universities have begun to comprehensively launch and promote it. As vocational colleges also need to pay attention to policies such as industry education integration and science education integration, implementing the reform

practice of integrating innovation and specialization in the context of school enterprise cooperation is a practical and feasible solution.

At present, most universities focus on the construction of professional training objectives, curriculum systems, and other aspects, and have achieved many constructive results [5]. However, there have been few studies or reforms on the evaluation mechanisms corresponding to these research practices, and traditional evaluation mechanisms are still being used. These evaluation mechanisms are not only aimed at students but also at teachers. This article mainly studies the assessment and evaluation mechanisms for students [6]. Obviously, traditional evaluation mechanisms cannot meet the needs of the reform of the teaching mode that integrates specialization and creativity. Taking the electronic professional foundation (professional platform) course "Circuit Analysis" as an example, traditional teaching is mainly based on theory and supplemented by practice. Later, according to the reform of talent training programs in vocational colleges, it gradually changed to a teaching mode that focuses on practice and supplemented by theory or integrates theory and practice, and emphasizes both theory and practice. Now, in order to integrate innovation and entrepreneurship education on the basis of integrating theory and practice, enterprise teachers are introduced to jointly teach to achieve further innovation in theory and practice. If students are still assessed and evaluated based on traditional grades, practical grades, and exam scores, it obviously cannot reflect their actual level under the new teaching mode. Therefore, it is necessary to study and practice the student assessment mechanism of vocational college innovation integration teaching under the background of school enterprise cooperation.

### **3. Suggestions for Reforming the Student Assessment Mechanism**

At present, there are various forms of enrollment for vocational college students, and some colleges carry out targeted education and teaching according to the enrollment form. However, most vocational colleges do not have such conditions, resulting in a large number of "mixed classes". Some "mixed classes" even have three or more types of enrollment methods, and the basic learning situations of these students are different. Some students even have significant differences in their learning foundations. Taking students from the Department of Electronic Information Engineering at Jiangyin Polytechnic College as an example, their main admission methods include college entrance examination enrollment, high school registration enrollment, vocational school registration enrollment, targeted single enrollment, and "3+3" linkage between secondary and higher vocational education. These students have significant differences in their learning foundations before enrollment, and their professional foundations are even more uneven. Students who previously attended high school have relatively strong theoretical learning abilities but relatively weak hands-on skills, while students who previously attended vocational schools have relatively strong hands-on skills but relatively weak theoretical learning abilities. However, in the face of diverse student groups, it is difficult to effectively integrate specialized and creative teaching using traditional models. As a result, traditional assessment and evaluation mechanisms are no longer applicable. In response to the above issues, the following reform suggestions are proposed.

Any course cannot do without theoretical learning, even vocational colleges that focus on practice, and even practical courses that account for 100% of the curriculum standards in talent training programs, must be based on theoretical knowledge. Otherwise, any practice is incomplete, so theoretical learning is crucial. At present, some colleges and universities neglect theoretical learning in order to highlight the importance of practice in some courses. The author believes that this is not entirely feasible, and it is obviously not advisable to only rely on "test papers to determine grades". However, theoretical learning cannot be completely ignored, and more diversified and humanized learning assessment models should be adopted to evaluate whether students' theoretical learning is qualified.

With the transformation of education towards digitalization and informatization, there are a large number of learning materials available in both school and public network resources. Teachers cannot simply let students search for them on their own. Instead, they should focus on original learning and

teaching videos, supplemented by high-quality online learning and teaching videos, and establish corresponding online learning course resources that are suitable for their school's characteristics. The assessment and evaluation mechanism for theoretical learning can be comprehensively evaluated based on students' learning situation in online resources, rather than simply judging success or failure based on test scores.

For vocational colleges, time learning is very important, and most courses require that the proportion of practical parts should not be less than 50% when formulating curriculum standards, which shows its importance. For the practical learning part, in order to effectively carry out the reform of specialized and innovative integrated teaching, it is necessary to cooperate with enterprises as much as possible and introduce practical content related to enterprise production. Firstly, it can strengthen students' strong interest in professional learning. Secondly, it can visually let students know a certain future job position. Thirdly, it can cultivate students' craftsmanship spirit by introducing the requirements of enterprises for employees. Fourthly, it can more effectively carry out innovation and entrepreneurship education on the basis of practice.

For the assessment and evaluation mechanism of practical learning, it should not be simply based on experimental reports, but should be comprehensively evaluated by combining the assessment of students' professional operation ability by teachers on campus and the assessment of students' comprehensive quality of "craftsmanship spirit" by enterprise teachers. For some projects that require team operation, students' teamwork and other abilities should also be assessed through methods such as "student student mutual evaluation".

In order to carry out more effective school enterprise cooperation and integration teaching, in addition to the assessment and evaluation of theoretical and practical learning, relevant tests on the ability to integrate professional knowledge into innovation and entrepreneurship should be introduced. Students can use their extracurricular time to actively engage in specialized innovation and integration practices in the "second classroom" and "third classroom". They can put relevant ideas into practical actions, record, summarize, and reflect on the relevant results, and then submit them in the form of scientific practice (research) reports (not limited to). Then, school teachers and enterprise teachers will conduct comprehensive evaluations to encourage students to innovate in combination with enterprise practice. Of course, considering the differences in student learning mentioned earlier, this part of the assessment and evaluation can be used as additional points, or for selection in various skill competitions, innovation and entrepreneurship competitions at all levels.

#### **4. Specific Case Implementation**

This article takes the basic course "Circuit Analysis" in the Department of Electronic Information Engineering at Jiangyin Polytechnic College as an example for specific case implementation analysis and research.

Although it is a professional course in vocational colleges, theoretical learning is also crucial, and all practice must be based on theory. However, due to the particularity of vocational teaching, theoretical learning hours are relatively limited. Therefore, as mentioned earlier, it is necessary to actively build an online learning resource library that can be assessed and evaluated online. Students can use their in class and after class time for selective learning and practice, and the system can quantitatively assess their learning process.

The Electronic Information Engineering Department of Jiangyin Polytechnic College has built a network learning resource library for the course "Circuit Analysis" using "Chaoxing Fanya" as the network platform. Students can learn through the platform, which has rich online learning resources, as well as various interactive functions such as online exercises, online exams, online discussions, and online questioning. At the same time, teachers can clearly see the overall or individual learning situation at the back.

The evaluation and assessment of the theoretical learning part is combined with the comprehensive evaluation of online learning platforms and classroom performance. The online platform will score students based on their self-directed learning during and after class, according to

the score ratio set by the teacher. The in class learning and discussion part can also introduce a student peer evaluation module, where group members score each other. The scoring process is also a learning process, which can stimulate students' competitiveness and make their knowledge mastery more solid.

For vocational college courses, there are more hours of practical learning. In order to effectively carry out the integration of specialization and innovation in the future, simple textbook experiments can no longer be used as the content of practical learning. More importantly, enterprise cases should be introduced for practical operation learning. Jiangyin Polytechnic College's Department of Electronic Information Engineering has introduced enterprise teachers. Enterprise teachers conduct on-site teaching on weekends or provide online explanations of relevant cases in the workshop through the internet. Due to the combination of actual production and equipment of the enterprise, the content is clear and engaging, and students have a strong interest in learning. Even after class, many students often communicate and exchange learning experiences with enterprise teachers. The performance of the practical part is mainly evaluated by the comprehensive evaluation of enterprise mentors, supplemented by the evaluation of on campus teachers.

The course fully utilizes simulation software and "mobile laboratories" to assist teaching and help students self-study. Each student is equipped with a "DIY experiment box", which contains essential instruments and tools such as multimeters, soldering irons, tweezers, wire strippers, as well as experimental materials such as breadboards and battery packs, so that experimental teaching no longer relies on dedicated laboratories. Students can not only engage in hands-on activities in the classroom, but also explore and practice anytime and anywhere outside of class to validate their ideas, truly achieving the goal of "doing while learning" in the classroom and "wanting to innovate, daring to innovate, and being able to innovate" anytime and anywhere after class.

By actively utilizing online learning platforms, educators can create relevant introduction videos of typical enterprise cases and student innovation and entrepreneurship works, and upload them to the online learning platform for other students to learn and reference, thereby inspiring students' enthusiasm for combining professionalism and innovation. The results of independent innovation will be used as additional points, or for selection in various skill competitions, innovation and entrepreneurship competitions at all levels.

At the same time, in the process of deep integration of theory and practice in teaching, school teachers must set requirements and rules for students in each classroom, and enterprise mentors will subtly explain the abilities and qualities that the "craftsman spirit" should possess, thereby promoting students to develop rigorous, down-to-earth, love learning, love thinking, love labor, and dare to innovate professional qualities, and guiding them to form a correct outlook on life and values.

## **5. Conclusion**

In recent years, the global economic development environment has been poor and the recovery is weak, while the domestic economy has also been affected to some extent, leading to transformation, optimization, and structural adjustment. Enterprises have also adjusted their demands for employees, no longer limited to only considering their professional abilities. Since the Ministry of Education proposed in 2018 that "vocational colleges need to implement the concept of integrating specialization and innovation in education", various universities have begun to comprehensively launch and promote it. At present, most universities focus on the construction of professional training objectives, curriculum systems, and other aspects, and have achieved many constructive results. However, there have been few studies or reforms on the evaluation mechanisms corresponding to these research practices, and traditional evaluation mechanisms are still being used. In response to the inability of traditional assessment mechanisms to adapt to the teaching reform model of school enterprise cooperation and innovation integration, this article proposes relevant reform suggestions for theoretical learning, practical learning, and independent innovation, and takes the course "Circuit Analysis" of the Electronic Information Engineering Department of Jiangyin Polytechnic College as an example for specific case implementation analysis and research.

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