

Research on the Construction of Credit Banks in Higher Vocational Education System under the Background of Deep Integration of Industry and Education

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Abstract: Due to the development of vocational education, the integration of industry and education has become an important trend in vocational education. It can not only effectively improve the quality of talent cultivation, but also enhance the social adaptability of talents. In this context, credit banks have received attention from people, providing new ideas and methods for diversified talent cultivation in higher vocational education. In this regard, this article deeply analyzes the significance and challenges of the construction of credit banks based on the deep integration of industry and education in the higher vocational education system, and proposes specific construction strategies, hoping to effectively promote the improvement of the higher vocational education system.

1. Introduction

Vocational education, as an important component of higher education in China, is the main battlefield for vocational talent cultivation and undertakes the important responsibility of cultivating high-quality, high-tech, and high skilled talents for society. With the continuous upgrading of industries and the rapid development of the social economy, traditional education models are no longer able to meet the talent needs of enterprises. The deep integration of industry and education has become an inevitable trend in the development of higher vocational education, and credit banks are an important strategy for the reform of higher vocational sports under this trend. They play an indispensable role in building a new higher vocational education system.

2. The significance of credit banks in the construction of higher vocational education system

2.1. Improve the adaptability of talent cultivation

Firstly, enterprise demand orientation. Through the deep integration of industry and education, enterprises can participate deeply in the formulation of talent training programs. Credit banks can adjust course offerings and credit recognition standards in a timely manner based on the talent and skill requirements proposed by enterprises at different times^[1]. Secondly, personalized talent cultivation. Each student has a different learning foundation and career plan. Credit banks allow students to choose personalized learning paths based on their interests and strengths, while meeting

the basic requirements for talent cultivation. Enterprises that integrate industry and education can provide students with practice oriented course selection and learning advice. Students can earn credits by participating in enterprise practice and corresponding course learning, making talent cultivation more in line with individual career development needs.

2.2. Promote the integration and sharing of educational resources

In the mode of integrating industry and education, technical experts and excellent workers from enterprises can serve as part-time teachers to further participate in vocational education and teaching. By utilizing credit banks, it is possible to scientifically and accurately evaluate the contributions of these part-time teachers in the teaching process, and grant them certain credit recognition rights according to corresponding needs, encouraging them to impart their practical experience and professional knowledge to students^[2]. At the same time, vocational college teachers can also obtain practical credits from enterprises through hanging out for training, thereby improving their practical teaching abilities and achieving effective integration of teaching resources. In addition, the construction of credit banks in the vocational education system can effectively promote the sharing of courses and facilities, as shown in Table 1. Credit banks can coordinate this sharing relationship, establish unified credit conversion rules, and ensure the interests and teaching effectiveness of both parties.

Table 1 Sharing of Courses and Facilities

Main body	Shared content
Enterprise	Transform internal training courses into school courses and provide students with learning resources that are tailored to their actual work content
School	Training facilities can also provide venues and equipment support for employee training in enterprises

2.3. Promoting the Construction of a Lifelong Learning Society

Firstly, updating labor skills. In the rapidly developing industrial environment, the workforce needs to constantly update their skills. Credit banks have broken the time and space limitations of traditional higher education, allowing learners to choose appropriate learning content and methods at different stages based on their work experience and needs, and obtain corresponding credits^[3]. Secondly, promote the connection between academic and non academic education. Credit banks can effectively connect academic and non academic education in the higher vocational education system. For working personnel, they can first obtain non degree education credits by participating in short-term training organized by the enterprise and university courses. When the credits accumulate to a certain degree, they can then be converted into degree education credits through certain assessment channels, and obtain college or undergraduate degrees. This helps to build a continuous and comprehensive lifelong learning system.

3. Challenges faced by credit banks in the construction of higher vocational education system

3.1. Significant industrial differences

Vocational education involves numerous industrial fields, and the technical, technological, and skill requirements of each industry vary greatly. There are also differences in job standards among different enterprises in the same industry, which makes it very complex to develop unified credit recognition and conversion standards.

3.2. Low enthusiasm of enterprises to participate in standard setting

Although the participation of enterprises in higher vocational education is an important manifestation of the deep integration of industry and education, in the construction of credit banks, enterprises may be unwilling to actively participate in the formulation of standards due to concerns about affecting their own interests or diluting talent training standards. Enterprises are more concerned about their short-term interests and trade secrets, and there may be differences with schools in the formulation of credit standards, which makes it difficult to unify the standards.

3.3. Difficulty in Data Security and Privacy Protection

Credit banks need to store a large amount of data related to student learning, credit acquisition, and conversion, which involves sensitive information such as personal privacy of students and technical secrets of enterprises. Establishing a secure and reliable information management system to prevent data leakage and malicious tampering is an important challenge. For example, the internal training technical materials and employee performance data provided by enterprises during the credit recognition process need to be strictly kept confidential.

3.4. High compatibility and integration requirements for the system

Each college, enterprise, and related industry organization in the vocational education system has its own information system. The information management system of the credit bank needs to be compatible with these systems to achieve data exchange and sharing. However, most of these systems currently use different technology platforms and data formats, making it difficult to achieve effective integration^[4].

3.5. Inadequate evaluation system

Firstly, in the mode of deep integration of industry and education, the learning and training environment for students is relatively complex, and the teaching subjects and methods are diverse. How to establish an effective education quality monitoring and evaluation system to ensure that the credits obtained by students through different channels have corresponding learning quality assurance is a key issue. Secondly, a quality assessment mechanism involving multiple parties. The construction of credit banks under the deep integration of industry and education involves multiple entities such as schools, enterprises, and governments. Establishing a quality evaluation mechanism that involves multiple parties, is scientifically reasonable, fair, and just requires coordinating the interests of all parties and forming an effective cooperation and communication mechanism. There are differences in the emphasis and standards of different entities in quality assessment, and how to integrate these differences to ensure the authority of the assessment results is a challenge.

4. Strategies for the Construction of Credit Banks in the Higher Vocational Education System

4.1. Construction based on professional competency standards

Vocational education should be guided by vocational abilities, and credit recognition and conversion standards should be based on the requirements of vocational abilities. The government, industry organizations, and schools can jointly develop a framework for vocational competency standards, and enterprises can refine it based on their own job requirements. For example, for horticultural planting majors, the professional competency framework of horticulturists should be

determined first, including major competency modules such as cultivation, pest control, and breeding of high-quality seeds. Enterprises can then refine the requirements for each module according to different job positions, providing a clear basis for credit recognition.

4.2. Establish a dynamic adjustment mechanism for credit standards

The industry is constantly developing, and the standards for credit recognition and conversion should also be dynamically adjusted accordingly. Establish a professional standard revision committee composed of experts from schools, enterprises, and industries to regularly evaluate and revise standards. Timely update the relevant rules for credit recognition and conversion based on the emergence of new technologies and processes in the industry. With the arrival of the aging era and the continuous improvement of the living environment requirements of the elderly, the credit standards for horticulture majors should timely increase the learning content and credit recognition requirements for horticulture techniques that are suitable for the living environment requirements of the elderly.

4.3. Strengthen data security technology

Vocational colleges should adopt advanced data encryption and access control technologies to ensure the security of credit bank data. Vocational colleges should establish a data security management platform to securely manage the entire lifecycle of data, from data collection, storage to transmission and use, with strict security measures in place. At the same time, regular data security audits and risk assessments are conducted to promptly identify and address security risks^[5].

4.4. Implementing System Integration and Interconnection

Relevant management departments play a leading role in formulating unified information technology standards and data interface specifications to promote the integration of related information systems such as schools and enterprises. The government should collaborate with schools and enterprises to build the infrastructure of the credit bank information management platform using technologies such as cloud computing and big data, in order to achieve interconnectivity between systems and real-time data sharing. For example, by establishing a regional vocational education informatization alliance, integrating the teaching management systems of schools within the region and the talent training management systems of enterprises, seamless information integration can be achieved.

4.5. Improve the education quality monitoring and evaluation system

Firstly, establish a multidimensional evaluation index system that includes learning outcomes, practical operational abilities, and professional ethics. When evaluating students' learning outcomes, it is not only important to consider whether they have mastered professional knowledge and skills, but also their actual performance, teamwork ability, innovation ability, and other professional qualities during internships in enterprises. Vocational colleges should adopt a combination of process evaluation and summative evaluation to comprehensively evaluate students' performance in different learning stages and scenarios^[6]. Secondly, it is necessary to strengthen the quality assessment of multi-party cooperation. Vocational colleges should establish a quality evaluation committee composed of third-party evaluation agencies from schools, enterprises, governments, and society, clarifying the responsibilities of each subject, as shown in Table 2.

Table 2 Responsibilities of each evaluation subject

Main body	Responsibility
School	Mainly responsible for quality monitoring of the teaching process
Enterprise	Emphasize the evaluation of students' performance in internships and production practices
Government	Macro guidance and supervision
Third party evaluation agency	Provide professional and objective independent evaluation services

4.6. Strengthen policy guidance and support

Firstly, formulate incentive policies. The government can introduce tax incentives to encourage enterprises to actively participate in the construction of credit banks. For example, a certain percentage of tax exemptions will be given to the expenses incurred by enterprises for cooperating with schools to carry out credit recognition and transfer training. At the same time, enterprises that have shown outstanding performance in the construction of credit banks will be awarded honorary titles and financial rewards. In terms of schools, corresponding teacher incentive policies can be formulated to encourage teachers to actively participate in the integration of industry and education teaching and talent cultivation work.

Secondly, improve legal and regulatory safeguards. The government should accelerate the formulation of relevant laws and regulations, clarify the rights and obligations of schools, enterprises, governments, etc. in the construction of credit banks. To safeguard the legal status of credit banks, standardize the operational procedures for credit recognition and conversion, and provide a solid legal foundation for the healthy development of credit banks in the higher vocational education system. For example, defining the basic responsibilities and obligations of enterprises in credit recognition to prevent them from arbitrarily changing credit standards or evading responsibility.

5. Conclusion

The construction of credit banks based on the deep integration of industry and education in the higher vocational education system is an important measure to promote the reform of higher vocational education, improve the quality of talent cultivation, and promote the construction of a lifelong learning society. Despite facing challenges in standard setting, information management systems, education quality monitoring and evaluation, and policies during the construction process, these difficulties can be effectively overcome through strategies such as building scientific standards, constructing efficient systems, improving evaluation systems, and strengthening policy support.

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