

Analysis of the Path to Quality-oriented Development of Vocational Education in the Context of Industry-Academic Integration

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Abstract: At the moment when Industry-Academic Integration has become the key trend of vocational education reform, this article aims to explore the quality-oriented development path of vocational education in order to meet the urgent demand of industrial upgrading for high-quality skilled talents. Through the comprehensive use of literature research, current situation sorting and problem analysis, this article discusses the theoretical relationship between Industry-Academic Integration and quality-oriented development of vocational education. It is found that vocational education encounters difficulties in policy implementation and coordination among various departments in the development process; The training of talents in schools lags behind, and the specialty setting and curriculum content are out of line with the needs of the industry; Practical obstacles such as insufficient motivation for enterprises to participate and limited depth of cooperation. Based on this, the article proposes to improve the policy support system and strengthen the coordination mechanism; Optimize the training mode of school talents and accurately meet the needs of the industry; Enhance the enthusiasm of enterprises to participate and deepen the cooperation of Industry-Academic Integration. It is hoped that this study can provide a practical path for the quality-oriented development of vocational education and help industry and education achieve deep integration and coordinated development.

1. Introduction

Under the background of rapid social development, the pace of industrial upgrading and transformation is accelerating, and the demand for high-quality technical and technical talents is becoming more and more urgent [1]. Industry-Academic Integration, as a key measure to promote the close combination of vocational education and industrial development, has become an important direction of vocational education reform and development and plays a vital role in the quality-oriented development of vocational education [2].

From the international situation, all countries in the world are actively exploring the deep cooperation mode between vocational education and industry, in order to improve the quality of their own vocational education and enhance national competitiveness [3]. In China, with the promulgation of a series of policy documents, such as "National Vocational Education Reform Implementation Plan", Industry-Academic Integration has been raised to an unprecedented height and become the top priority of vocational education reform [4]. However, in the process of promoting the quality-oriented development of vocational education by Industry-Academic Integration, there are still many challenges and difficulties.

There are some obstacles to the implementation of the policy, and the coordination and cooperation mechanism between departments needs to be improved; In the process of talent training in HVC, the docking with the actual needs of the industry is not accurate enough, and the curriculum system and teaching content are not updated in time [5]. Furthermore, the motivation for enterprises to participate in Industry-Academic Integration is insufficient, the depth and breadth are limited, and an effective benefit sharing mechanism has not yet been formed. In view of the above, it is particularly needed to deeply explore the quality-oriented development path of vocational

education under the background of Industry-Academic Integration. This article aims to analyze the current predicament and explore the feasible development path.

2. Industry-Academic Integration and quality-oriented development of vocational education

Industry-Academic Integration means the deep integration of industry and education. It is not a simple superposition, but an organic combination of industrial demand and education supply in personnel training and technological innovation [6]. In terms of connotation, Industry-Academic Integration requires vocational colleges to set up majors and adjust courses according to the needs of industrial development, so that the education and teaching process is closely related to production practice. Its characteristics are the consistency of goals, and both industry and education focus on cultivating high-quality talents to meet the market demand; Process interaction, industry provides practical platform and real cases for education, and education transports professionals for industry and helps technology research and development; Resource sharing, the two sides share teachers, equipment and other resources, reducing costs and improving efficiency.

The quality-oriented development of vocational education means that the trained talents have stronger employment competitiveness and sustainable development ability, and can better meet the needs of social development [7]. It covers many key elements, and high-quality educational resources are the foundation, including advanced teaching facilities and high-level teachers. Scientific specialty setting and curriculum system are the core, which need to closely meet the needs of the industry and pay attention to practical teaching. In addition, good social recognition and employment quality are also important signs, reflecting the ability of vocational education to provide students with broad career development space.

Industry-Academic Integration provides a powerful impetus for the quality-oriented development of vocational education. Through the deep cooperation between industry and education, enterprises can participate in the formulation of talent training programs, which can enable vocational colleges to accurately grasp the market demand and optimize the majors and curriculum settings. Practice places and projects provided by enterprises allow students to exercise their skills and improve their practical ability in real scenes [8]. Furthermore, the technical backbone of the enterprise participates in teaching, bringing the cutting-edge technology and experience of the industry and enriching the teaching staff. This all-round integration can improve the quality of vocational education personnel training and promote the quality-oriented development of vocational education.

3. Difficulties faced by the quality-oriented development of vocational education under the background of Industry-Academic Integration

3.1. Policy level: Policy implementation and coordination

Although the state has issued a series of policies to encourage the integration of industry-education, there are many obstacles in the actual implementation process. Some policies lack clear implementation rules and supervision mechanism, which leads to local governments and relevant departments being at a loss when implementing them [9]. Furthermore, the policy coordination between different departments is insufficient, for example, the education department pays attention to the quality of talent training, while the industrial department pays more attention to the economic benefits of enterprises. The difference in policy orientation makes it difficult to form a joint force in the process of promoting Industry-Academic Integration.

3.2. School level: Personnel training is out of line with industrial demand

Vocational colleges are out of touch with the actual needs of the industry in terms of talent training. On the one hand, the adjustment of specialty setting is relatively lagging behind, and it can't keep up with the rapid changes of industrial structure in time. For example, there is a strong demand for talents in emerging fields such as artificial intelligence and big data, but some colleges have failed to open related majors or upgrade existing majors in time. On the other hand, the curriculum system and teaching content are outdated, and the practical teaching links are weak.

Many colleges still focus on traditional theoretical teaching, lacking cases and projects closely combined with actual production, which leads to the knowledge and skills that students have learned can not meet the post requirements of enterprises. Specific performance can refer to Table 1:

Table 1: Comparison of the Disconnection between Talent Cultivation in Vocational Colleges and Industrial Demands

Comparison Dimension	Current Situation in Vocational Colleges	Actual Industrial Demands
Specialty Setup	High proportion of traditional specialties, insufficient establishment or delayed upgrading of emerging specialties	The industrial structure is changing rapidly, and the demand for talents in emerging industries is strong
Curriculum System	Theoretical courses dominate, lack of cases and projects closely integrated with actual production	Emphasis on practical abilities and innovative capabilities, requiring students to master the latest technological trends
Practical Teaching	Weak practical teaching links, insufficient training equipment and venues, low proportion of practical courses	Enterprises need employees with strong practical operation abilities and problem-solving capabilities
Skill Level	There is a gap between the skills students learn and the latest industry standards and technologies	Industry technologies are rapidly updated, requiring employees to continuously learn and master the latest skills
Employability	Students' employability is insufficient, making it difficult to meet enterprise job requirements	Enterprises are more inclined to hire employees with practical experience and innovative capabilities

Table 1 clearly shows the current situation that vocational colleges are out of touch with industrial demand in the process of talent training. This disconnect has seriously affected the quality of vocational education personnel training and students' employment competitiveness.

3.3. Enterprise level: lack of motivation and depth of participation

The motivation for enterprises to participate in Industry-Academic Integration is generally insufficient. From the perspective of cost-effectiveness, enterprises need to invest a lot of manpower, material resources and financial resources to participate in Industry-Academic Integration, such as providing internship sites and arranging masters to guide students, but it is difficult to obtain direct economic benefits in the short term. In addition, enterprises are worried that participating in Industry-Academic Integration will affect the normal production order and reveal trade secrets. In the depth of participation, most enterprises only stay in shallow cooperation such as accepting students' internships and providing a small number of part-time teachers, and rarely participate in the core links such as the formulation of talent training programs and curriculum development in vocational colleges. This kind of shallow cooperation can't give full play to the advantages of Industry-Academic Integration, and it is difficult to meet the demand of quality-oriented development of vocational education for deep participation of enterprises.

4. Explore the path of quality-oriented development of vocational education under the background of 4Industry-Academic Integration

4.1. Improve the policy support system and strengthen the synergy mechanism of Industry-Academic Integration

The government needs to build a more complete policy support system. On the one hand, it refines the relevant policies of Industry-Academic Integration, clarifies the rights and obligations of all participants, and formulates quantifiable assessment indicators and incentive measures. For example, enterprises that actively participate in Industry-Academic Integration are given substantial rewards such as tax incentives and financial subsidies. On the other hand, we should strengthen

cooperation among departments, set up an Industry-Academic Integration coordination group composed of education, development and reform, industry and information, and hold regular meetings to break down policy barriers and form a joint policy force. Specific policy support content can refer to Table 2:

Table 2: Overview of Policy Support for Industry-Academic Integration

Policy Support Dimension	Specific Content	Implementation Method	Expected Effects
Policy Refinement	Clarify the rights and obligations of all participating entities in Industry-Academic Integration	Formulate detailed policy documents to define the responsibilities of the government, enterprises, schools, and other parties	Enhance policy operability and reduce ambiguity in implementation
Assessment Indicators and Incentive Measures	Develop quantifiable assessment indicators, such as enterprise participation rate, student internship and employment rate, and establish incentive measures	Establish an assessment and evaluation system to provide tax incentives, financial subsidies, and other rewards to outstanding enterprises	Stimulate enterprises' enthusiasm for participating in Industry-Academic Integration and improve the quality of vocational education
Interdepartmental Collaboration	Establish an Industry-Academic Integration coordination group comprising members from multiple departments such as education, development and reform, and industry and information technology	Hold regular meetings to jointly study and resolve major issues in Industry-Academic Integration	Break down policy barriers, form policy synergy, and promote optimal resource allocation
Information Sharing and Service Platform	Build an Industry-Academic Integration information sharing platform to release industrial demands, educational resources, and other information	Utilize Internet technology to achieve real-time updates and sharing of information	Improve information transparency and facilitate effective matching between supply and demand
Legal and Regulatory Guarantees	Improve relevant laws and regulations for Industry-Academic Integration, clarify legal responsibilities and penalty measures	Strengthen legislative work to ensure that Industry-Academic Integration activities have legal basis and follow regulations	Provide a solid legal guarantee for Industry-Academic Integration and safeguard the legitimate rights and interests of all parties

Table 2 shows the specific content of improving the policy support system. By refining policies, formulating assessment indicators and incentive measures, and strengthening departmental cooperation, the collaborative mechanism of Industry-Academic Integration can be effectively strengthened and the quality-oriented development of vocational education can be promoted.

4.2. Optimize the school personnel training mode to meet the needs of the industry

Vocational colleges should actively adapt to the needs of the industry and optimize the talent training mode. First of all, establish a dynamic adjustment mechanism for majors, and adjust and add new majors in time according to the industrial development trend and market demand. For example, according to the development of intelligent manufacturing industry, specialties such as industrial internet and intelligent control technology are added. Secondly, reconstruct the

curriculum system, increase the proportion of practical teaching, and introduce real projects and cases of enterprises. Furthermore, strengthen the construction of teaching staff, encourage teachers to work in enterprises to improve their practical teaching ability. Vocational colleges can better meet the needs of the industry and improve the quality of personnel training through targeted professional and curriculum adjustment.

4.3. Enhance the enthusiasm of enterprises to participate and deepen the cooperation of Industry-Academic Integration

In order to enhance the enthusiasm of enterprises to participate, it is needed to establish a reasonable benefit sharing mechanism. Enterprises participating in Industry-Academic Integration can not only get talent bonus, but also cooperate with universities in technology research and development and product innovation to achieve mutual benefit and win-win results. Furthermore, strengthen the protection of intellectual property rights of enterprises and dispel the concerns of enterprises' participation. Promote enterprises to participate in the whole process of talent training, and comprehensively deepen the cooperation of Industry-Academic Integration from formulating talent training programs to curriculum development and internship guidance.

5. Conclusions

In this article, the problems related to the quality-oriented development of vocational education under the background of Industry-Academic Integration are deeply discussed. Through the theoretical analysis of the connotation of Industry-Academic Integration, the factors of quality-oriented development of vocational education and their relationship, the key role of Industry-Academic Integration in quality-oriented development of vocational education is clarified. Furthermore, the current difficulties are analyzed in detail, covering policy, school and enterprise levels. In policy, there are obstacles to implementation and coordination; School personnel training is out of line with industrial demand; Lack of motivation and depth for enterprises to participate in Industry-Academic Integration. In view of these difficulties, the article puts forward a series of targeted development paths. In terms of policies, improve the support system, strengthen the coordination mechanism, and guide all parties to actively participate with policies. Schools should optimize the talent training mode, dynamically adjust majors, reconstruct the curriculum system, strengthen the construction of teachers, and accurately meet the needs of the industry. Enterprises need to enhance their participation enthusiasm and deepen the cooperation of Industry-Academic Integration by establishing a benefit sharing mechanism.

Promoting the quality-oriented development of vocational education is a long-term and complex systematic project, and the deepening implementation of Industry-Academic Integration needs the continuous efforts of all parties. In the future, we should pay more attention to the effect of policy implementation, constantly optimize the talent training mode, and explore more effective enterprise participation mechanism, so as to adapt to the changing industrial demand, cultivate more high-quality technical and skilled talents for economic and social development, and realize the benign interaction and common prosperity between vocational education and industrial development.

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