

## **Innovative Development Paths on Industry-education Integration and Collaborative Education for Applied Universities**

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**Abstract:** Economic development has entered a new state, the relationship between talent supply and demand has undergone profound changes, and in the face of profound adjustments in economic structure and accelerated industrial upgrading, especially the implementation of innovation-driven development strategies, and the structural contradictions in higher education have become more prominent, the state has proposed a Important decision-making arrangements to guide the transformation of ordinary undergraduate colleges and universities into application. The application of colleges and universities to deepen the industry-education integration and to educate people is of great significance for talent cultivation, higher education development and industrial structure optimization and upgrading. This paper deeply analyzes the problems existing in the industry-education integration in applied universities, and puts forward the innovative development path of application-oriented colleges and universities to integrate and educate people, to guide the transformation and development of applied universities, and to comprehensively improve and develop the economic and social development and innovation drive of school service areas.

### **1. Introduction**

Applied colleges and universities are an important part of China's education system, shouldering the multiple missions of cultivating high-level technical application talents, applying applied scientific research and technological innovation, serving employment and regional development, and promoting lifelong learning. Applied universities have three main characteristics: positioning in application-oriented talent training; focusing on applied research on scientific knowledge and technological achievements; and promoting employment and entrepreneurship and regional economic and social development. "Industry-education integration" is based on the cooperation between schools and enterprises. Through the school education and teaching process, it is connected with the production process of the enterprise. It is a combination the behavior or process of education and teaching, production and labor, quality cultivation, skill improvement, scientific research and development, management and social services. The essence is based on the development of docking industry as the forerunner, based on systematic training of technical skills, strengthening practical education, breaking the barrier division, and carrying out cooperation and education. The application of colleges and universities to deepen the industry-education integration and to educate people is of great significance to the cultivation of talents, the development of higher education and the optimization and upgrading of industrial structure. It is conducive to solving the problems of employment difficulties, homogenization and economic and social development in China's higher education.

### **2. School-enterprise Cooperation and Industry-education Integration**

"School-enterprise cooperation" is an educational strategy for schools to approach the enterprise in order to achieve the goal of talent training and to seek joint education with enterprises. The main performance is that the company establishes an internship training base, conducts student

internships and employment, or educates and trains employees. School-enterprise cooperation is generally a one-way process from school to business, with characteristics of temporaryity and volatility. The industry-education integration is a two-way interaction and integration process between schools and enterprises. School-enterprise exchanges are one-way spontaneous and two-way self-conscious, with high blending and stability characteristics, and are the advanced stage of school-enterprise cooperation.

(1) From a semantic point of view, "school-enterprise cooperation" is a single interaction between "school" and "enterprise", and "industry-education integration" is a combination of "industry" and "education" industries or systems. "Cooperation" is reflected in the same framework, the two sides jointly complete the content and tasks; "integration" reflects "I have you, you have me", mutual integration, close relationship between the two sides, and even one, the two Depth and breadth are different.

(2) From the perspective of subject participation, "school-enterprise cooperation" mainly reflects the interaction between "school" and "enterprise" in personnel training, technology services and social training. In this process, the school became the active initiator because of its own needs, and the enterprise was the partner to be pursued. The "industry-education integration" is a deep integration of school-enterprise cooperation. It integrates the concept, technology and resources of the industry into the school's training system, curriculum, and teacher construction. At the same time, it will train students, research and dual innovation. The results are brought to the industry, sharing and optimizing the allocation of resources for production and learning, assisting in the construction of industries, and cultivating high-quality innovative talents. Both schools and enterprises are the leaders of cooperation and form a community of development.

(3) From the perspective of the teaching process, the schools under the cooperation of schools and enterprises carry out order training, cooperative classes and orientation training. The docking is a certain enterprise, and the teaching standards are mostly limited to the requirements of enterprises. In the sense of industry-education integration, the school meets the requirements of uniform industry, teaching adopts industry and industry standards; training and internship are also part of the teaching plan in the real working environment. Therefore, learning and work are integrated, learning to be a person and learning to do things united.

### **3. Significances on Industry-education Integration and Collaborative Education**

We will promote the industry-education integration, and adhere to the school-enterprise cooperation and the combination of work and study. In order to promote the all-round integration of the supply side of the talent cultivation and the industrial demand side, and cultivate a large number of high-quality innovative talents and skilled personnel, it has far-reaching significance.

(1) The inevitable requirement for cultivating innovative and highly skilled personnel. Under the background of vigorously advocating the improvement of independent innovation capability and building an innovative country, more and faster training of innovative high-skilled talents is regarded as a strategic measure to enhance the country's core competitiveness. Higher education focuses on developing the development, compound and innovative technical skills talents needed for industrial transformation and upgrading and enterprise technology innovation. The industry-education integration emphasizes the distance between education and industry, improves the adaptability of education development and industrial development, strengthens the integration of talent cultivation and enterprise production, and cultivates innovative and highly skilled personnel, so that the theory of talents can be linked to reality. Scientific knowledge is transformed into real productivity, which directly serves the development of the industry.

(2) An effective way to promote the transformation and development of higher education. The structure of higher education has been able to meet the needs of economic and social development, and the existing higher education structure has been adjusted to promote the further development of personnel training, scientific research and social services. Therefore, the transformation of local general undergraduate colleges is an inevitable requirement of China's current economic and social development, and also a strategic plan for the development of national higher education. Integrate

the advantages of technology, research and development, information and laboratory support of colleges and universities with the production practice environment of local leading enterprises, and form a benign and mutually supportive organism, improve the quality of applied talents in universities, and realize education and regional economic society. Coordinate development and further promote the transformation of colleges and universities into applications.

(3) Promote the important driving force for the optimization and upgrading of industrial structure. On the one hand, the combination of production and education, the realization of scientific research and industrial development, with the help of new technologies to promote the upgrading of production and education; on the other hand, the cultivation of talents leading the development of the industry, to provide realistic conditions for industrial upgrading. With the expansion of the third industrial revolution and the burgeoning of the fourth industrial revolution, higher education and industry are increasingly connected, and it is necessary to seek close cooperation with enterprises, industries and industries in scientific research, personnel training and social services. At present, China's economic development is facing the challenges of slowing growth, crossing the "middle income trap", industrial structure and economic development mode, and it is necessary to promote the optimization and upgrading of industrial structure through the integration of industry and education.

#### **4. Existing Problems on Industry-education Integration for Applied Universities**

Although the current industry-education integration has been carried out on a large scale and has achieved certain results, it has effectively promoted the teaching reform of applied universities, but there are still many problems that restrict the further development of the industry-education integration.

(1) The interests of the school and enterprise cooperation are difficult to balance. As a for-profit organization, economic interests are the most important driving force for enterprises to participate in school-enterprise collaboration. Enterprises participating in school-enterprise collaborative education are to obtain stable human resources, research and development technology and social reputation for future production and operation activities. The school hopes to coordinate the education and training of students through the school and enterprise to educate people and build a practice base, and promote teacher training and professional construction. However, in the absence of incentive policies and regulatory constraints, the needs of both schools and enterprises cannot be met, and in the short term, enterprises may also incur costs or losses of profits.

(2) The government has not fully played its own role as a bridge of communication. School and enterprise are different in terms of system, structure, cooperation philosophy and purpose. It is difficult to achieve true integration in the initial stage of cooperation, and it requires the government's communication bridge. However, the policies promulgated by some local governments are mainly to promote the guidance of school-enterprise cooperation. They only stay at the policy level, they are not operational and targeted, and lack rigid restraint mechanisms. In terms of law, although it involves a lot of industry-education integration and school-enterprise cooperation, the laws that are really related to it are almost missing. The lack of a strong guarantee of the legal system, the coordination and implementation of school-enterprise cooperation is weak.

(3) The enthusiasm of enterprises to participate is not higher. The enthusiasm of enterprises and industries to participate in the industry-education integration, although a certain degree of improvement, but overall, still shows the "school fever, business cold" situation. The current industry-education integration is still dominated by schools, and the participation and participation of enterprises are relatively low. The reason is that on the one hand, the profitability of the enterprise conflicts with the public nature of education, and the school and the enterprise cannot find a balance of interests in the cooperation; on the other hand, the state lacks a policy incentive system to support the participation of enterprises, There is no preferential tax policy for running a school.

(4) Quality education resources are difficult to gather and share. The problems of weak teachers in the school, unreasonable professional curriculum, and a single form of collaborative education

are also the main reasons for the lack of cooperation and lack of attractiveness of the school. Some colleges still organize teaching according to the traditional teaching mode. Talent training is not targeted and practical. It has not yet established a practical teaching system that corresponds to the ability of the company. It lacks a double-teacher team, students' knowledge and skills and modern enterprise requirements. The difference is very far, which makes it difficult for school-enterprise quality education resources to gather and share, and the effect of industry-education integration is not satisfactory.

(5) Industry guidance professional ability is insufficient. The primary problem of the development of modern industry is the modernization of industry norms and industry standards. Industry norms and industry standards are the important basis for the construction of higher education and curriculum construction, and also the core basis for the industry to participate in cooperative education. On the one hand, affected by the level of industrial development and market changes, many industry organizations in the region exist in name only. On the other hand, because China's laws do not clearly stipulate the status and role of industry associations in the development of education, the industry's own level is limited, and the ability to guide education development is insufficient, and the role played by school-enterprise cooperation is weak.

## **5. Innovative Development Paths on Industry-education Integration and Collaborative Education for Applied Universities**

To deepen the integration of education and industry, we need to work together to solve the existing problems, and refer to the relevant literature. The innovative development path of the application-oriented integration of education, education, and education in applied universities is as follows:

(1) Professional settings and industrial needs are organically integrated. The professional structure of the high school is closely related to the industrial structure. In the process of realizing the industry-education integration in colleges and universities, on the one hand, the professional setting should be based on the industrial structure, accurately connect the regional economic development, improve the matching degree between the two, and implement the pertinence and effectiveness of the professional setting. According to the degree of industrial demand, the counterparts are set up in colleges and universities to realize the cooperation between schools and enterprises, and to transport a large number of specialized talents that match the needs of the industry, and to reflect the goal of educating people in the process of practice. On the other hand, the professional setting should focus on the level of industrial demand, focus on industrial demand, optimize the industrial structure, and carry out precise professional positioning according to the actual situation of industrial development, so that talents can be in a diversified environment of market economy. Find a development space that suits you.

(2) Through the integration of resources, the foundation of the fusion material is produced. Resource integration is a condition for the existence of a school-enterprise interest community, and one resource is shared and used by the other party. Material conditions are an important indicator of the comprehensive foundation and strength of school operations. The school establishes training rooms and other related resources, and must keep in line with the latest development direction of the industry and enterprises. The school resources construction will link the development direction of enterprises; enterprise investment will improve the level of education services, cooperate and build, co-manage teaching and research institutions, and practice training bases. Technical process and product development centers, as well as student innovation and entrepreneurship, employee training and skills appraisal, saving investment, complement each other, enabling students to gain multi-faceted practice and learning experience, and increase practical skills; corporate employees can obtain comprehensive and advanced continuing education resources .

(3) Strengthen the process management of enterprise practice teaching. Strengthening the management of students' practice in the enterprise is the key to the integration of production, education, and education to cultivate and apply talents. In the practice of the enterprise, the school-enterprise joint teaching committee jointly discusses and formulates relevant management

documents for students' internship practice in the enterprise, and strictly implements them. School tutors and corporate tutors take three assessment methods for student internships: first, daily evaluation, including work attitudes, labor discipline and behavioral norms of student internship practice; second, stage evaluation, after the rotation of internship, the enterprise The instructor fills in the evaluation opinions and appraisal forms according to the work responsibility, post adaptability, problem solving ability and hands-on operation ability in the student internship practice; thirdly, the overall evaluation of the internship, after the internship, the students are fully evaluated, focusing on It is the comprehensive performance situation, the combination of learning and learning, the internship effect and the internship quality level throughout the internship process.

(4) Establish a joint talent training mechanism. Through the industry-education integration, we will gradually build a three-in-one production, research and research cooperation base that integrates “High Education Park, Science and Technology Park, and Hatchery Park”, and gather open and shared platforms of “three resources of teaching resources, industry-university-research cooperation, and public service”. The government, enterprises and universities work closely together to establish a joint training mechanism for talents, and form a team of dual-teachers composed of political and business school personnel to further promote the school-enterprise collaborative education model, deepen the reform of “entering enterprises into education” and encourage enterprise technicians go to the school to implement practical education and support teachers to work in the enterprise. On the basis of previous order-based training, post-training and joint training bases, companies are encouraged to participate in school management and student development. Schools should actively try innovative teaching models to solve the dilemma of talent cultivation. Schools and enterprises jointly develop teaching plans, jointly set up teachers' teams, share teaching resources, and jointly establish a joint talent training mechanism to achieve in-depth gathering and integration of high-quality educational resources. The industry-university-research cooperation platform, which is the main, government-driven, industry-led, enterprise-involved, and common development, promotes the synergy between industry and education.

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