

# *Research on Building City-Area Industry-Education Consortium*

Shanshan Zhou, Ling Li, Xiaocheng Gu\*

*Anhui Business & Technology College, Hefei, 230001, Anhui, China*

*\*Corresponding author*

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**Abstract:** Since 2022, municipal industry-education consortium has become an important practice to promote local industrial upgrading and vocational education development. It aims to explore how to build an education model that meets the needs of municipal industry development, meets the diversified growth needs of students, and realizes the integration of industry and education. Starting from the concept, characteristics and functions of the city-level industry-education consortium, this paper summarizes and discusses the problems involved in the construction of the city-level industry-education consortium, such as the collaborative development among multiple subjects, the updating and upgrading of education and teaching content, and the transformation and realization of training objectives. It analyzes the necessity of building the city-level industry-education consortium, as well as the pain points and obstacles in the construction process. The construction strategy and optimization scheme of the city-level industry-education consortium are put forward, so as to provide reference for promoting the construction of the city-level industry-education consortium and the reform of vocational education.

## **1. Introduction**

The integration of industry and education is the basic feature and the biggest advantage of modern vocational education, and it is also the difficulty and focus of reform. China In December 2022, put forward a series of major measures for the reform of vocational education in the new stage. Among them, the "one body and two wings" has attracted attention. The "one body" is to explore a new mode of the construction of the modern vocational education system at the provincial level, which is the foundation of the reform. The "two wings", namely the city-level industry-education consortium and the industry-education integration community, are the carriers of reform. Among them, to build a regional industry-education consortium is to support provincial people's governments to build an industry-education consortium with the function of talent training, innovation and entrepreneurship, and promoting high-quality development of industrial economy based on industrial parks. To set up a council with the participation of the government, enterprises, schools and scientific research institutions, implement materialized operation, and gather capital, technology, talents, policies and other elements. Effectively promote all kinds of subjects to deeply participate in vocational education[1]. We should combine vocational education with industrial

progress, industrial transformation and regional development, give full play to their respective advantages, innovate positive interaction mechanisms, and solve the problem of poor matching between the supply side and the demand side of personnel training.

## **2. City-level Industry-education Consortium and Its Characteristics**

Municipal industry-education consortium is a modern vocational education organization form based on industrial parks, which also has the functions of talent training, innovation and entrepreneurship, and promoting the high-quality development of industrial economy. It is composed of government, enterprises, schools, scientific research institutions and other units. The consortium aims to promote the deep integration of industry and education, and improve the level of local vocational education. It aims to promote the deep integration of industry and education and improve the level of local vocational education, so as to promote the development of industry and talent training. With the rapid development of China's economy and the continuous adjustment of industrial structure, the traditional integration of industry and education has been unable to meet the needs of enterprises for highly skilled talents, so a new model is urgently needed to promote the integration of industry and education and the optimal allocation of labor force. At present, 21 national pilot cities of integration of industry and education have been identified, and more than 4,600 enterprises of integration of industry and education have been cultivated in various regions. A large number of industry organizations and industry associations actively participate in the work of industry-education integration, and have initially formed a joint promotion mechanism with cities as nodes, industries as fulcrum and enterprises as the focus[2].

One of the main characteristics of city-level industry-education consortia is "diversified members". The members of the municipal industry-education consortium include the government, enterprises, schools, scientific research institutions and various social organizations, each of which is responsible for different fields and links. The core strength of the consortium is to establish a cooperative development mechanism among the government, enterprises, schools and scientific research institutions, and the core goal is to complete the transformation of the school-running pattern from the government to the government's overall management and the society's diversified participation. To encourage and support local governments and key industries to take the lead in the construction and reform of vocational education system by combining their own characteristics and advantages, making breakthroughs and demonstrating leadership.

The second main feature of city-level industry-education consortium is "in-depth participation". It implements differentiated support policies for local governments, enterprises, schools and scientific research institutions through government platform, diversified participation and market drive, integrates industry demand and market demand into the education category, and actively promotes cooperation between education and industry. The construction of a group of public practice centers, enterprise practice centers and school practice centers integrating practical teaching, social training, real production and technical service functions will help promote the development of local industries, improve the level of education, effectively improve students' employability and social adaptability, and promote the win-win situation of education and industry[3].

### **2.1. The Government**

The government is the promoter, coordinator and supervisor of city-level industry-education consortiums, formulating policies, promoting resource sharing, regulating the construction of city-level industry-education consortiums, and ensuring their sustainable development.

First of all, the government provides policy support. As the leading force in regional economic development, the government can promote the cooperation between enterprises and educational

institutions in city-level industry-education consortia by optimizing industrial layout, providing industrial policies and incentives, and supporting innovative enterprises, so as to help realize industrial upgrading and economic transformation[4]. At the same time, the government can also increase the support of policy and law, accelerate the process of intellectual property protection and technology transfer, improve the market competitiveness, create a good policy environment, and promote the cooperation and collaboration among the consortium members.

Secondly, the government should provide financial guarantee. The government can provide various preferential policies such as financial subsidies and tax policies for city-area industry-education alliances to provide necessary financial guarantee and reduce the financial risks of enterprises and schools[5].

Thirdly, a good environment should be created. The government can also provide a good environment and infrastructure for the city-area industry-education consortium, such as park construction, public service facilities, transportation and communication facilities, so as to provide a more comfortable environment and development space for enterprises and schools.

Finally, the government can provide planning guidance. The government can formulate and implement the municipal development plan, provide the framework and guidance for the development plan of the municipal industry-education consortium, ensure the consistency of its direction and overall goal, and improve the quality and long-term interests of the city-level industry-education consortium through scientific planning and supervision, and promote the unity and development of the consortium[6].

## 2.2. The Enterprise Aspect

Enterprises are the market-oriented players in the consortium. They provide a base for practical education, provide opportunities for students to practice, and also provide guidance to schools and teachers to guide the development and improvement of educational curricula.

First of all, promote industrial upgrading. Through industry-university-research cooperation, enterprises can obtain more technology and innovation resources, thus promoting industrial upgrading. Enterprises can make use of the technical support of scientific research institutions and schools to carry out timely technological innovation, product upgrading and production process improvement, improve product performance and quality level, and enhance product competitiveness, thus playing an important role in the overall upgrading of regional industries. Enterprises can lead product research and development and intellectual property protection in the consortium. By protecting high-quality patents and technologies and building brand awareness, enterprises can continuously improve their competitive position in the market, and effectively enhance their visibility and competitiveness[7].

Secondly, it can provide innovation-driven. Enterprises have a relatively dominant position in the market in the city-level industry-education consortium, and can use their innovation ability to promote market innovation, directional innovation of products and programs, and promote the transformation of new technologies through market-oriented operation[8].

Thirdly, customized talent training is required. In the municipal industry-education consortium, enterprises can not only obtain scientific and technological resources, but also participate in the talent training projects carried out by scientific research institutions and schools according to the market demand, so as to develop and cultivate professional and technical personnel in a customized manner, providing solid support for the future development of enterprises.

## 2.3. Schools

Schools are the cultivators of talents in the consortium, they can provide vocational skills

training courses and teaching resources, and cooperate with enterprises to carry out teaching practice activities, so as to cultivate highly skilled talents in line with the actual needs of enterprises.

First of all, they can provide a continuous stream of talents. As an important part of vocational education, the main task of vocational colleges is to cultivate professional and technical personnel for industrial development. In the city-area industry-education consortium, vocational colleges and enterprises cooperate to cultivate talents who meet the market demand, so as to provide strong support for the development of the industry[9].

Secondly, it is necessary to carry out skills training. Vocational colleges can undertake targeted skills training for enterprises and industries in city-level industry-education alliances to help skilled workers improve their vocational skills.

## 2.4. Scientific research institutions

Scientific research institutions are technological innovators in the consortium, providing scientific and technological support and services for the consortium, promoting technological innovation and industrial upgrading, cultivating innovative talents with enterprises and schools, optimizing the talent structure, and enhancing the competitiveness and development vitality of the city-level industry-education consortium.

First of all, technological innovation. Scientific research institutions have rich scientific and technological research strength and experience, and can provide advanced technical and theoretical support for the consortium, as well as important intellectual support for regional industrial development, transformation and upgrading.

Secondly, it should promote industrial transformation and upgrading. Scientific research institutions can deeply understand the trend of industrial development and the direction of technological innovation, and help enterprises transform and upgrade, improve product quality and reduce costs. They can provide technical training and guidance for enterprises, help enterprises improve their technical level and solve technical problems, so as to improve their work efficiency and competitiveness. At the same time, scientific research institutions can also provide industrial consulting services for the consortium to help enterprises formulate industrial development plans and strategies.

Finally, it can incubate innovative teams. Scientific research institutions can provide innovative enterprises with innovation team incubation and technology transfer services, promote the development and growth of emerging industries, and improve the overall competitiveness of regional economy.

Third, it is necessary to build a city-level industry-education consortium.

First, it should respond to the strategic requirements of national industrial transformation and upgrading. At present, national economic transformation and upgrading has become a global strategy, and industrial upgrading requires higher requirements for talents, technology, brands and resources. By building city-level industry-education consortium, a pragmatic cooperation mode combining industry, university and research can be formed, which can enhance the core competitiveness of local industries, achieve faster and more sustainable transformation and upgrading, and promote economic development.

Secondly, it can meet the needs of high-quality talent training. Modern economy has a more diversified and differentiated demand for talents, and universal education in schools can no longer meet the needs of social development. Through the combination of government, enterprises, schools, scientific research institutions and other social resources, we can more accurately cultivate high-quality talents required by the market, and enhance the effectiveness of talent training.

Thirdly, it is necessary to promote the deep integration of industry and education. The

integration of industry and education is an important way to promote the coordinated development of economy and education.

Thirdly, it is necessary to innovate the education model and talent training model. The establishment of municipal industry-education consortium can rely on various practical teaching bases, and at the same time, with the help of innovative resources of enterprises, carry out mechanism innovation on the content, teaching methods, evaluation and assessment of education training, so that talent training is constantly in line with the market demand, and provide more excellent talents for the society.

Finally, the sustainable development of economy and society should be promoted. The city-level industry-education consortium breaks the traditional barrier between education and enterprises, and closely integrates enterprises and education, thus realizing the sustainable development goal of economic and social development, and further promoting the common development of industry and talent field [10].

### **3. The Problems Existing in Building City-level Industry-education Consortium**

#### **3.1. The Demands of All Parties are Inconsistent, and the Depth of Cooperation is Not Enough**

The interest demands of enterprises, research institutes and vocational colleges are inconsistent. Affected by the epidemic and the economic situation at home and abroad, the demand for talents of enterprises has been reduced, and the requirements for practical skills of talents have been improved. However, vocational colleges pay more attention to the theoretical basis and quality education of talents, and the ability of highly advanced talents cultivated is not strong. The research direction of scientific research institutions is more inclined to research and theory, while the enterprises need to solve the specific production problems. The lack of understanding and grasp of the real problems of the enterprises leads to the difficulty of technology transfer and collaborative innovation.

#### **3.2. High Mobility of Personnel**

Because the municipal industry-education consortium involves multiple autonomous bodies, the composition of personnel is relatively complex, and there is a large mobility of organization members and personnel within the organization. It is relatively difficult to manage the whole consortium, and it lacks common goals and core ties. In particular, the change of members within the consortium has a great impact on the consortium, and the main risk of the instability of the consortium is the bankruptcy of the cooperative enterprises and other force majeure situations.

#### **3.3. Difficulty in Capital Source**

The consortium usually needs a huge amount of financial support. Due to the different affiliations of the parties, the funding channels are different, and most of the units are independent, there are problems such as uneven asset provision and unreasonable profit distribution. Moreover, the performance appraisal mechanism between the parties is not perfect, and the situation of profit and loss mismatch occurs. At the same time, it is difficult to directly measure the cooperation projects between scientific research institutions and enterprises, and it is difficult to obtain specific results in a short period of time, which brings limited profits and interests to all parties of the consortium.

### **3.4. The Establishment Mechanism is Imperfect**

At present, there is no perfect policy specification and management mechanism in the municipal industry-education consortium, and the consortium in some areas is still in different development stages and different development speeds, lacking mature case reference. The role and status of all parties in the municipal industry-education consortium are not clear, lack of overall planning and promotion mechanism, some members of the consortium only focus on the immediate interests, cannot deeply tap the potential of the consortium and long-term industrial development opportunities, the degree of government participation is sometimes not enough, and there are some problems in the efficiency and degree of cooperation in dealing with the affairs of the municipal industry-education consortium.

## **4. The Construction Path of City-level Industry-education Consortium**

The municipal industry-education consortium is an important measure of the recent education reform and development. The construction of the consortium involves the government, industrial parks, schools, scientific research institutions, enterprises and other stakeholders. In order to achieve the resonance of the industrial parks, schools, scientific research institutions, enterprises and other multi-subjects with the local government, it is necessary to improve the corresponding construction path. To solve the blocking points and difficulties in the construction of city-level industry-education consortium, we can start from the following aspects:

### **4.1. Clarifying the Main Objectives and Positioning**

First of all, the opinions of all parties should be integrated. Understand the interests and needs of different participants in the municipal industry-education consortium, listen to the opinions of all parties, and consider the capital and manpower input of all parties. Secondly, supporting skills training as required. According to the needs of the market, we will provide training and education programs that meet market needs. Finally, continuous improvement. With the change of market demand, the exploration of education path of municipal industry-education consortium will also face various challenges. The subjects participating in municipal industry-education consortium need to continue to communicate and cooperate with each other, and constantly improve and cooperate with their own positioning and main goals in the operation of the consortium, so as to promote the long-term development of municipal education and industry.

### **4.2. Establish an Industry-education Cooperation and Consultation Mechanism**

With the overall planning of provincial governments, the main responsibility of prefectural and municipal governments, and the participation of relevant departments, universities and enterprises, municipal industry-education alliances will be organically integrated with the construction of national innovative cities and industry-education integrated cities through government platform, diversified participation and market drive, so as to strengthen the overall planning of work and service coordination. In addition, a number of public practice centers, enterprise practice centers and school practice centers integrating practical teaching, social training, real production and technical service functions will be built to form a collaborative force supporting the development of the industry-education consortium.

### **4.3. Develop a Reasonable Performance Appraisal and Contribution Evaluation Index System**

We will formulate an industry-education integrated performance appraisal and contribution evaluation index system for local universities (undergraduate and higher vocational), implement differentiated support policies for local governments, enterprises and schools, promote collaborative innovation among vocational education, higher education and continuing education, and establish a long-term performance-and contribution-oriented mechanism to support local governments in promoting high-quality development of vocational education and higher education. To carry out the performance evaluation of local colleges and universities and the contribution evaluation of research institutions in serving the region, and establish and improve the multi-investment co-construction mechanism and the differentiated financial support mechanism. We will implement differentiated financial support policies, strengthen fund performance evaluation, supervision and assessment, and use financial means to connect all stakeholders of "city + university".

### **4.4. Strengthen Information Exchange and Interaction**

The municipal industry-education consortium should strengthen information exchange and interaction among its members, promote good experience, jointly build information resource database, provide information services and support for all members, and improve efficiency and efficiency. City-level industry-education consortia can cooperate with industry associations and other organizations to actively carry out technical exchanges, knowledge sharing and other activities to improve the quality of education. At the same time, it can also communicate and cooperate with other consortia to enhance the competitiveness of education itself through market competition and resource complementarity.

### **4.5. Innovate Educational Paths**

First of all, we should innovate teaching methods, pay attention to the combination of practice and theory, integrate information technology, online courses and other modern technological means, and fully participate in practical teaching exploration, industry-academia cooperation and research and development activities. Secondly, the quality of teachers should be improved. Teachers are the core of education, and improving the quality of teachers is an important plan to explore the educational path. Finally, we should pay attention to the construction of teachers, improve teachers' professional quality, education and teaching level, encourage teachers to participate in industry-study cooperation, and innovate teaching models and methods.

## **5. Conclusion**

Building a municipal industry-education consortium can realize the multi interaction of government, enterprises, schools, scientific research institutions, etc., make education closer to social needs and industry requirements, create a new education environment and education mode, is an important name card of reform and innovation, the consortium needs the coordinated development among all participants, and jointly promote the reform and practice of talent training mode. To promote industrial transformation and upgrading, strengthen the connection between vocational education and market demand, and improve the quality of vocational education. In the process of building the city-level industry-education consortium, some problems may be faced, such as the depth of cooperation between subjects in different fields, the lack of education and training funds, etc. In the process of building the city-level industry-education consortium, the positioning and objectives of each subject should be clarified, the industry-education joint consultation

mechanism should be established, policy guidance should be strengthened, and evaluation standards should be optimized. To help build a more healthy and sustainable city-level industry-education consortium.

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