Research on the Development Strategy of Industry Education Integration in Colleges and Universities under the Background of "Double Cycle"

Fangping Ma
Nanjing Normal University Taizhou College, Taizhou Jiangsu, 225300, China

Abstract
The new development pattern of "double cycle" is an important strategy for China's economic and social development during the 14th Five Year Plan period. The integration of industry and education is not only a favorable measure for colleges and universities to integrate into the big cycle and double cycle of social development, but also an effective way to promote the transformation and upgrading of enterprises, but also a key move to effectively connect the education chain, talent chain, industrial chain and innovation chain. Therefore, under the background of "double circulation", the integrated development of industry and education in Colleges and universities should seize the new opportunities of "integrated development", "High-quality development" and "open cooperation", and face the challenges brought by the reorganization of supply chain, industrial chain and the reconstruction of innovation chain and education chain, take measures to unblock talent supply and demand channels, build a new bridge for Win-win cooperation, build a High-quality talent think tank, open up a new space for international cooperation and other countermeasures. Constantly optimize the integration mode of industry and education to meet the needs of the new development pattern, and serve the national economic and social development with the High-quality development of industry and education integration.

Keywords
"Double Cycle"; New Development Pattern; Integration of Industry and Education; Development Strategy.

1. Introduction
Based on objective judgement of China's economy, general secretary Jinping Xi proposed the "double cycle" development strategy at the seventh meeting of the central finance committee, emphasizing the "building a new development pattern with the domestic big cycle as the main body and the domestic and international double circulation promoting each other" [1], "double cycle" development strategy has been incorporated into China's "14th Five-Year" career development plan. It has become an important guide for China to achieve High-quality economic transformation and sustainable development. The "double cycle" development strategy effectively promotes the High-quality transformation of China's economy and the fundamental transformation of development mode, and realizes the goal of sustainable development of China's economy. It is a strategic transformation from "large-scale entry, large-scale exit and export-oriented development" to "focusing on internal and external training". It needs the effective support of a large number of new excellent applied talents. As the main position of talent training, colleges and universities, We should match talent training with major national needs, actively integrate into the new development pattern, give play to our own advantages and serve the "double cycle". The integration of industry and education is a powerful measure for colleges and universities to integrate into the new development pattern.
In recent years, the state has successively issued a series of policy documents to provide policy support for effectively promoting the development of industry and education integration. After the introduction of several opinions of the general office of the state Council on deepening industry and education integration in 2017, industry and education integration has gradually developed into one of the main directions of China’s higher education reform, It has far-reaching significance for changing the mode of talent training.

Scholars have conducted a lot of beneficial research and Exploration on the development strategy of industry education integration of higher education in China, and believe that the core of industry education integration is mutual benefit and Win-win [2]. It is suggested to open up the education chain and industrial chain, technology chain and service chain, ability chain and post chain, so as to form a stable industry education integration community [3]; We have made breakthroughs in five key points: property rights protection, risk sharing, Point-to-Plane cooperation, problem orientation and mutual benefit organization [4], sought the interest coincidence point between schools and enterprises, improved the management and security system and established a diversified fund investment mechanism[5], and achieved the goal of interest integration, risk sharing and common development between universities and enterprises, which is also China’s current "double cycle" Provide talent and intellectual resources support for High-quality industrial transformation under the development pattern. After literature search, it can be found that there are a large number of documents on the integration of industry and education in Chinese academic circles, which have made a lot of research results and put forward a lot of useful suggestions for the integration of industry and education in China. However, it needs to be further clarified that the integration strategy of industry and education has strong dynamic characteristics, and the industrial structure changes dynamically with the change of time, external environment and internal environment, Different requirements are also put forward for the quantity and quality of talents. Therefore, under the new development pattern of "double cycle", we should systematically sort out the environment for the integrated development of industry and education, study its opportunities, determine its challenges, and put forward targeted strategies for the integrated development of industry and education, which is undoubtedly of great significance to implement the reform of higher education and promote the High-quality transformation of China’s industry.

2. Opportunities and Challenges Faced by the Integration of Industry and Education in Colleges and Universities under the Background of "Double Cycle"

The change of industrial structure will inevitably put forward corresponding requirements for the talent demand structure. The training of High-quality applied talents has gradually penetrated into all links of talent training. The integration of industry and education has become one of the main directions of the development of higher education. Chinese universities have explored new objectives, new paths and new methods of the integration of industry and education, from the traditional "title class", "order class" and "practice training base" The establishment of "industry (industry) college" has achieved certain educational results [6], laying a solid foundation for the deep integration of industry and education under the new development pattern of "double cycle". The new development pattern clearly requires high skilled and compound applied talents, puts forward new requirements for the education mode, development mechanism and school running quality of higher education, and the integrated development of industry and education faces new opportunities and challenges.
2.1. New Opportunities for the Integration of Industry and Education

2.1.1. "Integrated Development" Brings New Opportunities

General secretary Jinping Xi, on the Boao forum for Asia in 2018, clearly pointed out that we should speed up the integration and development. Since the eighteen Party’s Congress, the Central Committee’s strategy, principles and policies formulated in all fields, all aspects and levels have been permeated with the important thought of integration and development. The goal of "the fate of human beings' community is to" build China's wisdom in the new world order with the integration of development ". Under the new development pattern of "double circulation", the new situation of integrated development has brought new development opportunities for the integration of industry and education. First, under the guidance of the idea of "integrated development" and relevant national policies, the government, industries, enterprises and universities are highly unified in understanding, coordinate with each other in action, and jointly promote the integrated development of industry and education, so as to comply with the national economic structure adjustment and the transformation of economic mode, deeply integrate into local leading industries and actively serve local social and economic development. Second, under the new development pattern, higher education highlights interdisciplinary cross integration, pays attention to the cross and integration of liberal arts, science, engineering and other fields, so as to realize diversified cooperation, mutual benefit and Win-win, and promote interdisciplinary, inter school, cross field and Cross International Cross integration, which provides a new direction for expanding the breadth and depth of industry education integration. "Integrated development" is the innovation of Marxist development concept in the new era, which will effectively guide all work of domestic development and domestic and foreign integrated development. Colleges and universities should also seize the opportunity of "integrated development", explore and innovate, take advantage of the situation, promote the integration of industry and education into a new stage, give full play to their own advantages and serve the "double cycle".

2.1.2. "High Quality Development" Brings New Opportunities

During the 14th Five Year Plan period, China’s economic and social development changed from high-speed growth to High-quality development, which will inevitably have a far-reaching impact on all fields of China’s economy and society. Under this background, higher requirements are put forward for the cultivation of higher talents. Higher education must also keep up with the pace of High-quality development and actively adapt to the new trends, new characteristics and new needs of educational development in the new period, establish a new outlook on development and build a High-quality education system. On the one hand, as the booster of the High-quality development of higher education, the integration of industry and education should seize the opportunity of "High-quality development", seek breakthroughs in adjusting structure, promoting upgrading, creating mechanism and breaking barriers, truly improve the quality of talent training in Colleges and universities, and help the interweaving and blending of new engineering, new medicine, new agriculture and new liberal arts. On the other hand, colleges and universities should constantly improve their independent innovation ability in promoting High-quality development. Innovation is the first driving force leading High-quality development, and school enterprise cooperation is an important means of scientific and technological innovation and industrial innovation. Strengthening school enterprise integration is the key to open the industry university research channel and accumulate development potential energy through innovation. Therefore, in the stage of High-quality economic and social development, the integration of industry and education will also usher in unprecedented new opportunities.
2.1.3. "Open Cooperation" Brings New Opportunities

To build a new development pattern, we should not only expand domestic demand, but also expand opening to the outside world, that is, taking the domestic cycle as the main body and the domestic and international double cycles promote each other. Therefore, the "open cooperation" has ushered in a new development stage. General secretary Jinping Xi has emphasized repeatedly that education should be expanded to the outside world, and that exchanges and mutual learning with other countries should be strengthened. This will provide a direction for China's further expansion of education and opening to the outside world. On the one hand, facing the new development stage, education should not only actively serve the overall situation of the great rejuvenation of the Chinese nation, but also actively adapt to the great changes in the world that have not been seen in a century. Colleges and universities should seize the opportunity of "open cooperation", aim at major national strategies and the forefront of world science and technology, focus on solving the "neck" problem and cultivating urgently needed innovative talents, carry out high-level cooperation with world-class resources, and devote themselves to the internationalization of China's higher education. On the other hand, facing the new stage of "open cooperation", the state has also put forward new requirements for international cooperation in the integration of industry and education. In 2017, several opinions of the general office of the State Council on deepening the integration of industry and education made clear requirements that we should "strengthen international exchanges and cooperation, encourage colleges and universities to introduce overseas high-level talents and High-quality educational resources, and develop a school enterprise cooperative talent training and collaborative innovation model in line with national conditions and international openness." It provides a direction for colleges and universities to further deepen the international cooperation between industry and education. Therefore, when implementing the integration of production and education, universities should not only focus on local innovation, but also fully absorb the international experience of the integration development of universities and regions, and put forward the "China plan" for the transformation of world higher education. Under the new development pattern, "open cooperation" has entered a new stage, which has brought new opportunities for deepening the international project cooperation of industry education integration and forming the ecosystem of industry education international cooperation.

2.2. Challenges Faced by the Integration of Industry and Education

2.2.1. Challenges Brought by Supply Chain and Industrial Chain Reorganization

Under the background of "double circulation", the integration of industry and education is facing the challenges brought by the reorganization of supply chain and industrial chain. From the perspective of external circulation, some countries have implemented government intervention in the supply chain, resulting in the decoupling of Industrial Science and technology. Coupled with the adverse factors of intensified trade friction, most enterprises, especially small and medium-sized enterprises, are facing crises such as shrinking orders, tightening cash flow, shortage of personnel, vacant production lines and business stagnation. There are still huge risks in the industrial chain. From the perspective of internal circulation, China will reshape the industrial division system and form a complete supply chain and industrial chain as soon as possible. The enterprise development strategy, development priorities and development expectations will be adjusted accordingly, and the resource elements will be reconfigured. The above external adverse effects and internal development needs will make the integration of industry and education face more uncertainty, such as squeezing the cooperation space, affecting the cooperation channels, interrupting the cooperation process, improving the uncertainty of cooperation, etc. the mode and mode of
industry and education integration need to be dynamically adjusted with the changes of internal and external circulation development [3].

### 2.2.2. Challenges Brought by the Reconstruction of Innovation Chain and Education Chain

Under the background of "double circulation", the integration of industry and education is facing the challenges brought by the reconstruction of innovation chain and education chain. From the perspective of external circulation, with the evolution and transformation of the global economic competition pattern, global industrial chain coordination and innovative resource allocation show a new development trend. The original innovation capability has increasingly become the key to the scientific and technological competition among countries. It has become a general trend to drive the upstream and downstream collaborative innovation of the industrial chain and supply chain with integrated innovation. The complexity, difficulty and investment of scientific and technological innovation are increasing. Therefore, international scientific and technological cooperation and collaborative innovation have become a general trend [7]. From the perspective of internal circulation, China still has deficiencies in basic discipline research and technology integration capacity. In the process of implementing innovation driven industrial upgrading, China is faced with many "neck" technical problems. Some industries cannot develop effectively due to the limitations of "neck" technology. Theoretically, China should lay out the innovation chain around the industrial chain, guide the development of talent chain and education chain through the development of innovation chain, to promote the development of the new pattern of higher education. The external competitive pressure and internal development needs put forward new requirements for talent training in Colleges and universities. Cultivating "High-quality and top-notch" talents, improving scientific and technological innovation ability, meeting social needs and serving the national strategy will become not only the new requirements faced by the integration of industry and education in Colleges and universities, but also the new challenges faced by the integration of industry and education in higher education.

### 3. Countermeasures for the Integration of Production and Education in Colleges and Universities under the Background of "Double Circulation"

Under the new development pattern of "double circulation", colleges and universities should actively serve the national strategy, adopt the ideas of unblocking the channels of talent supply and demand, building a new bridge of Win-win cooperation, building a high-tech talent think tank and opening up a new space for international cooperation, improve the power and vitality of integrating industry and education with High-quality development, and cultivate talent advantages for High-quality development, Continuously optimize the industry education integration mode to meet the needs of the new development pattern, and serve the national economic and social development with the High-quality development of industry education integration.

#### 3.1. Unblock Talent Supply and Demand Channels and Promote the Coordinated Development of "Four Chains"

Talent is the key to promoting industrial upgrading and supporting made in China. It is also an important foundation related to the smooth domestic circulation. As the main position of talent training, colleges and universities should establish the development concept of serving the local, pay attention to the talent training in the new era according to the development of economic and social situation, combine the training objectives of higher education with the actual needs of enterprises, strengthen the target training mode, and integrate the education chain, talent chain, industrial chain The innovation chain will become an effective link for the common
development of enterprises and colleges, provide High-quality talent support for enterprises, provide a clear direction for the development of colleges and universities, and finally provide effective support in industry, talent and intelligence for China's "double cycle" development goal.

Pay close attention to the construction of new disciplines. Innovate the education system and mechanism, strengthen the cross integration of liberal arts, science, engineering and other fields, promote the construction of interdisciplinary majors, adjust and optimize the discipline structure, establish a professional system closely related to the development of local industries, boost scientific and technological innovation, and create a number of application-oriented majors with prominent advantages and distinctive characteristics urgently needed by local (industry). At the same time, pay attention to emerging industrial fields such as artificial intelligence, virtual reality and advanced materials, cultivate future oriented and demand-oriented talents, timely develop courses to meet local industrial needs, and promote the seamless connection between course content and professional needs, specialty setting and industrial needs.

Build an internship and training base. Innovate the school enterprise cooperation mode, build a practical teaching and training environment according to the needs of enterprise development and innovation, build a number of inter school and inter school linkage, open and shared practical teaching platforms, open the training base at the same time, carry out experimental research, explore the joint training of school enterprise double teachers who "move products to the classroom" and "set the classroom in the workshop", through situational teaching Diversified teaching methods such as case teaching expand the docking scope between schools and enterprises, and march towards the direction of joint leadership and management between schools and enterprises.

Promote the effective transformation of scientific research achievements. Large cycle and double cycle need a steady stream of innovative achievements to provide cycle kinetic energy, build a new development pattern, and make new exploration on the transformation mode of scientific and technological achievements. By introducing colleges and universities to build a platform for scientific and technological R & D and achievement transformation, application-oriented researchers are encouraged to write their papers in the "factory workshop", so that scientific and technological innovation achievements continue to emerge in the way of industrialization, and the new momentum of High-quality development continues to grow. Take the collaborative education of professional degree postgraduates as an important driving force for the integration of industry and education and "innovation driven development", build a number of postgraduate training projects for the integration of industry and education, and deeply integrate the subject research with the practical problems urgently to be solved in the development of local industries.

Cultivate innovative talents. Whether the majority of young people have the spirit of innovation determines whether the country has the potential for innovation, and whether there is a steady stream of new forces in the big cycle and double cycle. Colleges and universities should be guided by the needs of economic and social development, grasp the new requirements of the new development pattern for talent training, deepen the structural reform on the supply side of human resources, cultivate innovative talents that meet the needs of enterprises through the integration of industry and education and joint education of talents, broaden the Avenue from "school gate" to "factory gate", and open up a new channel for the growth of professional talents, This is not only the starting point of talent training in Colleges and universities, but also the destination of the integration of industry and education.
3.2. Build a New Bridge for Win-win Cooperation and Realize a New Leap Forward in Integrated Development

In the context of "double cycle" development, the goal of the new development pattern needs to be able to provide innovation momentum for innovation achievements, and the integration of industry and education is the internal requirement of innovation driven High-quality development. It is necessary to seize the opportunity of "integrated development", realize effective complementarity and build a new bridge of Win-win cooperation on the basis of combing government resources, enterprise resources and university resources, build a system and mechanism with the participation of the three parties to promote the integrated development of industry and education and achieve a new leap forward.

The government. The integration of industry and education puts forward higher requirements for government participation. The government should actively serve the process of industry and education integration between universities and enterprises. However, it should be noted that the government only participates in the service, not dominates the process of industry and education integration, that is, the government should play the role of a bridge and link to form a market-oriented mechanism in which the government guides and universities and enterprises participate. The technological innovation system and industrial integration system of enterprises and universities as the main body of cooperation promote the dynamic integration of enterprises and universities, and constantly release the vitality and creativity of "school enterprise cooperation". Under this goal, the government, under the background of objectively studying and judging the regional economic development level, industrial structure and economic development strategy, issued relevant policies to encourage and support the in-depth interaction between enterprises and universities, rather than "two skins". The government set up a platform to create more High-quality "maker space", continue to go out and introduce, and realize the optimization and reorganization of resources, Effective resource allocation by the market to promote the integration of industry and education with high quality, high level and sustainable development.

Colleges and universities. As the main body of the integration of industry and education, on the one hand, colleges and universities should highlight the school running characteristics, constantly optimize the school’s hardware facilities, improve the school's teaching and training conditions, innovate the school running mode, pay attention to their own characteristics and misplaced development, strive to create advantages and brands serving the development of local industries, and cultivate "marketable" practical talents. Take multiple measures to improve the proportion of local employment of students and provide a steady stream of talents for local enterprises. On the other hand, we should strengthen the construction of school enterprise joint scientific and technological innovation team, explore and establish a school enterprise integrated scientific and technological innovation system according to the needs of local industrial development, improve the ability and level of serving the economy and society, and improve the innovation ability of school enterprise cooperation and Industry education integration.

Enterprises. As the main participant in the integration of industry and education, on the one hand, enterprises should emancipate their minds, take the initiative, increase investment and connect colleges and universities conducive to promoting enterprise development. They should not only provide funds, but also deeply participate in various links of talent training such as school professional planning, textbook compilation, teaching design and practical training according to the needs of industrial development, to realize the connection of professional setting with industrial needs The course content relates to professional standards, and the teaching process is connected with the production process. On the other hand, we should actively integrate into colleges and universities, participate in scientific research and
technology R & D in Colleges and universities, provide subject source and element support for scientific research and innovation for colleges and universities, cooperate with colleges and universities for collaborative innovation and transformation of scientific and technological achievements, carry out school enterprise collaborative innovation research around key industrial technologies, core processes and common problems, and accelerate the transformation of basic research achievements into industrial technology, Share scientific research teams, jointly build experimental bases and jointly cultivate cutting-edge projects to achieve long-term Win-win results.

3.3. Build a Think Tank for High-quality Talents, Innovate and Enable High-quality Development

In the new development stage, all kinds of High-quality innovative talents are needed in all links of opening the domestic cycle and building a domestic and international double cycle. At this time, the most important work of the integration of industry and education should focus on the national strategic needs, seize the opportunity of "High-quality development", gather high-end talents from various parties, build a high-precision talent think tank, improve the ability of independent technological innovation, and enable the High-quality development of the integration of industry and education.

Teachers take the initiative to enter the enterprise. College teachers have the mission of teaching and educating people and serving the society. In particular, college teachers should undertake the important task of High-quality development of social economy and culture. They should actively go out instead of "making cars behind closed doors" to solve real socio-economic and technical problems. Therefore, the government, colleges and enterprises should cooperate closely and issue relevant policies, Encourage college teachers to go deep into the process of production and operation, cooperate with enterprises to solve the "neck sticking" problem in the process of enterprise operation and management, or take the enterprise as a "Teaching Workshop" and adopt the method of "project team", led by teachers and technicians to guide students to jointly solve the front-line problems of production, so as to truly realize the goal of teachers, students, enterprises The government's goal of winning more.

Enterprise experts walk into the classroom. The cultivation of applied and innovative talents needs effective soil and good cultivation mechanism. Effective measures should be taken to introduce entrepreneurs and technicians into the classroom, guide students to conduct research according to practical problems, cultivate talents through the "double subject" mode of schools and enterprises, invite enterprise experts into the classroom to teach professional practice courses, and give full play to the resource advantages of enterprise experts, Make up for the lack of professional knowledge structure of college teachers and closely combine the education of colleges and universities with the needs of enterprises. At the same time, colleges and universities can also introduce high-level engineers and highly skilled talents into the innovative talent system of colleges and universities by hiring industry professors and innovation and entrepreneurship tutors, jointly participate in the formulation of talent training programs and scientific research, and introduce external intelligence for the cultivation of innovative talents and the improvement of scientific research and innovation ability of colleges and universities.

Gather many high-end talents. Deepen the integration of industry and education, gather high-end talents from various parties, and improve the ability of independent innovation. On the one hand, actively introduce first-class talent teams, strengthen talent management service system and mechanism, talent platform carrier construction, talent system innovation and talent development environment optimization, accelerate the gathering of high-end talents and stimulate talent innovation and creativity. On the other hand, focusing on the demand for high-level talents from key enterprises and major projects, we can vigorously promote the mode of
"school enterprise combination and integration of industry, University and research" through school enterprise academic forums and building expert teams, gather talents, deepen exchanges and incubate projects, overcome cutting-edge technologies and realize scientific and technological innovation, introduce "external brains" and establish "think tanks", Let the development of enterprises have core technology and intellectual support.

3.4. Open up a New Space for International Cooperation and Form a New Pattern of Open Cooperation

It should be emphasized that the new development pattern of "double cycle" is not to strengthen the domestic cycle and weaken the international cycle, but an open, inclusive and parallel domestic and international double cycle. This concept provides a fundamental basis for the opening-up of higher education. The ultimate goal of the integration of industry and education is to integrate into the new development pattern of "double cycle", To improve the stability and control of regional industrial chain and supply chain, we should pay close attention to global industrial development, seize the opportunities of "open cooperation" and international and domestic industrial upgrading, actively open up new space for international cooperation, and form a new pattern of integrated development of industry and education with open cooperation.

Expand the vision of international cooperation. From the historical development process, the development and dissemination of cultural technology is open. Although China has developed rapidly for more than forty years, there is still a big gap between the developed countries and the basic disciplines, key technologies and management. In early 2020, COVID-19 has already proved the above conclusion. Some industries in China have encountered the problem of reducing the development speed due to the lack of a large number of key technologies. Therefore, the current development of higher education must be established in the perspective of internationalization and actively go out. Universities and enterprises should cooperate closely to build laboratories and major national infrastructure with the actual needs of China's industry through the integration of industry and education and school enterprise cooperation, to solve the constraints of key technologies and management in the process of China's economic development.

Build an international cooperation ecosystem. Colleges and universities should give full play to the potential of domestic demand, build a High-quality education system and accelerate the formation of new advantages in international cooperation and competition. The integration of industry and education is a favorable way for colleges and universities to open a new situation of international exchange and cooperation in education. Explore the construction of an international ecosystem integrating industry and education, strengthen cooperation with international well-known organizations, industry associations and multinational leading enterprises, try to build an open cooperation highland, develop advantageous industrial clusters, build an International Youth Innovation and entrepreneurship competition platform, high-end joint scientific research platform, school enterprise science and technology industry platform, enrich cooperation modes and expand cooperation platforms, Give full play to the advantages of international school enterprise research resources of the project to better serve regional economic and industrial development.

4. Epilogue

Continuously deepening the integration of industry and education is an important measure to implement the national supply side structural reform and the national innovation driven development strategy, and is the main line of the connotation development of colleges and universities. Under the background of the new development pattern of "double cycle", both opportunities and challenges are obvious in the development process of China's higher
education. The two will also be accompanied by the dynamic process of the integration of industry and education. The integration of industry and education should seize opportunities, explore and innovate, effectively avoid risks, actively meet challenges, give full play to the development of service industry, help scientific and technological innovation, The advantages of jointly cultivating excellent talents, constantly creating economic and social values, and promoting industrial economic upgrading and social development under the new development pattern. Colleges and universities should take the initiative to assume the social responsibility of serving regional economic development, continue to go deep into the front line of economic development and industrial reform, constantly deepen the integration of industry and education, further broaden the cooperation platform and accelerate the transformation of achievements, Effectively promote the construction of a community of common destiny for the integration of industry and education, realize the sharing and interaction of human resources, innovative technologies and high-tech projects, and promote the High-quality development of the integration of industry and education.

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