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Exploration on the Implementation Path of Industry-Education Integration in Vocational Education Under the New Development Pattern

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Abstract: ***The new development pattern, with domestic circulation as the main body and domestic and international dual circulations promoting each other, puts forward higher requirements for vocational education to cultivate high-quality technical and skilled talents, serve industrial upgrading, and promote regional development. As the core school-running model of vocational education, industry-education integration is the key link connecting the education chain, talent chain, industrial chain, and innovation chain, and also an important starting point for vocational education to serve the new development pattern. At present, the integration of industry and education in China's vocational education still faces practical difficulties such as the disconnection between talent training and industrial needs, insufficient collaboration in technological innovation, and weak social service capacity. Based on the core connotation and era requirements of the new development pattern, this paper constructs a three-dimensional implementation path system of industry-education integration from three levels: talent training, technological innovation, and social services, clarifies the implementation focus, mechanism innovation, and guarantee measures of each level, and provides theoretical support and practical reference for the in-depth integration of industry and education and high-quality development of vocational education, helping vocational education better serve industrial upgrading and high-quality regional economic development under the new development pattern.***

Keywords: New development pattern; Vocational education; Industry-education integration.

1. INTRODUCTION

1.1 Research Background

At present, China's economic development has entered a new stage. Constructing a new development pattern with domestic circulation as the main body and domestic and international dual circulations promoting each other is a major strategic deployment made by the Party Central Committee based on the domestic and international development situation. The core of the new development pattern is to realize the independent controllability and high-quality development of the industrial chain and supply chain, and high-quality technical and skilled talents are an important foundation for supporting industrial chain upgrading, promoting technological innovation, activating domestic circulation, and connecting international circulation. As the main position for cultivating technical and skilled talents, vocational education shoulders the important responsibility of "cultivating diverse talents, inheriting technical skills, and promoting employment and entrepreneurship", and its development quality is directly related to the effectiveness of building the new development pattern.

Industry-education integration is the essential feature of vocational education and the core path for in-depth connection between vocational education and industrial development. In recent years, the state has successively issued a series of policies such as the "Opinions on Promoting the High-Quality Development of Modern Vocational Education" and the revision of the "Vocational Education Law", clearly proposing to deepen industry-education integration and school-enterprise cooperation, and promote the synchronous development of vocational education and industrial development. However, in the practice process, the integration of industry and education in vocational education still has problems such as "enthusiasm from schools but coldness from enterprises", "cooperation without integration", and "integration without depth". The difficulties such as the disconnection between talent training and industrial needs, insufficient collaboration in technological innovation, and weak social service capacity have not been fundamentally solved, which is difficult to meet the needs of industrial upgrading and regional development under the new development pattern.

Under the new development pattern, the industrial structure is accelerating optimization and upgrading, emerging industries and strategic industries are developing rapidly, and the transformation and upgrading of traditional industries are accelerating, which puts forward new and higher requirements for the quantity, quality, and structure

of technical and skilled talents. Vocational education must actively adapt to the era requirements of the new development pattern, deepen the reform of industry-education integration, and build an implementation path system compatible with industrial development, coordinated with technological innovation, and matched with social needs, so as to give full play to its important role in talent training, technological innovation, and social services, and provide strong support for the construction of the new development pattern.

1.2 Research Significance

1.2.1 Theoretical Significance

Based on the core connotation of the new development pattern and combined with the existing research results on industry-education integration in vocational education, this paper constructs a three-dimensional implementation path system from the three levels of talent training, technological innovation, and social services, enriches the theoretical framework of industry-education integration in vocational education, makes up for the deficiency of multi-dimensional and systematic path exploration of industry-education integration in current research, provides a new perspective and idea for subsequent related research, and promotes the deepening and development of the theory of industry-education integration in vocational education.

1.2.2 Practical Significance

Combined with the current practical difficulties of industry-education integration in vocational education, this paper puts forward targeted and operable implementation paths, clarifies the specific measures and guarantee mechanisms of each level, and provides practical guidance for vocational colleges, enterprises, governments, and other relevant subjects to deepen industry-education integration, helping vocational education cultivate more high-quality technical and skilled talents who meet the needs of the new development pattern, and promoting industrial upgrading and high-quality regional economic development.

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1.3 Research Methods and Ideas

This paper adopts literature research method, case analysis method, induction and summary method and other research methods to carry out research on the implementation path of industry-education integration in vocational education under the new development pattern. Firstly, through literature research, it sorts out the core connotation of the new development pattern, relevant policies and research results of industry-education integration in vocational education, and clarifies the theoretical basis and realistic background of the research; secondly, it analyzes the era requirements of the new development pattern for industry-education integration in vocational education, and dissects the current practical difficulties of industry-education integration; thirdly, it constructs a three-dimensional implementation path system of industry-education integration from the three levels of talent training, technological innovation, and social services, and clarifies the implementation focus and mechanism innovation of each level; finally, it verifies the feasibility and effectiveness of the implementation path combined with typical practical cases, puts forward corresponding guarantee measures, and forms a complete research conclusion and suggestion.

2. CORE CONNOTATION AND ERA REQUIREMENTS OF INDUSTRY - EDUCATION INTEGRATION IN VOCATIONAL EDUCATION UNDER THE NEW DEVELOPMENT PATTERN

2.1 Core Connotation

Under the new development pattern, the core connotation of industry-education integration in vocational education is to break the barrier between education and industry, realize the in-depth integration of the "education chain, talent chain, industrial chain, and innovation chain", and build a development model of "school-enterprise collaboration, industry-education symbiosis, and two-way empowerment". Its core essence is reflected in three aspects: first, the precise connection between talent training and industrial needs, setting up majors around the industrial chain, designing courses around job needs, and cultivating technical and skilled talents with job adaptability and innovation ability; second, the coordinated efforts of technological innovation and industrial development, vocational colleges and enterprises jointly building innovation platforms, jointly carrying out technological research and development and achievement transformation, helping enterprises upgrade technology and develop high-quality industries; third, the in-depth integration of social services and regional development, vocational education actively docking with the needs of regional economic development, carrying out talent training, technical consultation and other services, and building a long-term mechanism for serving local industries.

Compared with the traditional industry-education integration, the industry-education integration under the new development pattern emphasizes "systematicness, coordination, and innovation" more. It is no longer limited to simple school-enterprise cooperation and internship training, but forms a closed-loop system of "talent training - technological innovation - social services", realizing the synchronous development of vocational education, industrial development, and regional development, and becoming an important force for promoting the construction of the new development pattern.

2.2 Era Requirements

2.2.1 Talent training should adapt to the needs of industrial upgrading

Under the new development pattern, the industrial structure is accelerating optimization, emerging industries (such as artificial intelligence, big data, new energy, high-end manufacturing, etc.) are rising rapidly, and traditional industries (such as manufacturing, construction, service industry, etc.) are accelerating transformation and upgrading, which puts forward higher requirements for the professional quality, innovation ability, and comprehensive ability of technical and skilled talents. The integration of industry and education in vocational education needs to adjust the professional structure around the direction of industrial upgrading, innovate the talent training model, and cultivate high-quality technical and skilled talents who can adapt to the upgrading needs of the industrial chain and supply chain, so as to solve the problem of disconnection between talent supply and industrial needs.

2.2.2 Technological innovation should support the independent controllability of the industrial chain

The core of the new development pattern is to realize the independent controllability of the industrial chain and supply chain, and technological innovation is the key support. The integration of industry and education in vocational education needs to strengthen the collaboration of school-enterprise technological innovation, promote vocational colleges and enterprises to jointly carry out core technological research and development and achievement transformation, break technical bottlenecks, improve the core competitiveness of the industrial chain, and help smooth the domestic circulation. At the same time, through the transformation and application of technological innovation achievements, promote industrial upgrading, connect the international circulation, and enhance the position of China's industry in the global industrial chain.

2.2.3 Social services should help regional economic development

The new development pattern emphasizes domestic circulation as the main body. As an important part of domestic circulation, the quality of regional economic development directly affects the effectiveness of building the new development pattern. The integration of industry and education in vocational education needs to be based on the needs of regional economic development, give play to its own advantages in talents and technology, carry out social services such as enterprise employee training, technical consultation, and community education, help regional industrial upgrading, employment increase, and social progress, build a long-term mechanism for industry-education integration to serve local industries, and promote high-quality regional economic development.

3. PRACTICAL DIFFICULTIES OF INDUSTRY-EDUCATION INTEGRATION IN VOCATIONAL EDUCATION UNDER THE NEW DEVELOPMENT PATTERN

In recent years, China's vocational education has made certain achievements in industry-education integration, with increasingly rich forms of school-enterprise cooperation, gradually improved quality of talent training, and enhanced capabilities in technological innovation and social services. However, under the background of the new development pattern, facing the new requirements of industrial upgrading, technological innovation, and regional development, the integration of industry and education in vocational education still has many practical difficulties, mainly reflected in the following three aspects:

3.1 Talent Training Level: Disconnection Between Supply and Demand, and Backward Training Model

First, the disconnection between major setting and industrial needs. The major setting of some vocational colleges lacks forward-looking, still uses the traditional professional system, and fails to timely connect with the development needs of emerging industries and strategic industries. The professional structure is not compatible with the industrial structure, leading to a "dislocation" between talent supply and industrial needs. Graduates of some majors have difficulty in employment, while some industrial fields are facing a shortage of technical and skilled talents. Although the state clearly requires giving priority to the development of emerging majors needed by advanced manufacturing, new energy and other industries, some colleges and universities still have problems such as lagging professional adjustment and serious homogenization.

Second, the rigid talent training model. Most vocational colleges still adopt the traditional model of "theoretical teaching + practical teaching". The practical teaching link is disconnected from the actual enterprise positions, lacking the integrated design of "industry orientation - job-course connection - practical education", resulting in insufficient practical ability and job adaptability of students. Although new talent training projects such as modern apprenticeship and order-based training have been promoted, there is still a problem of "emphasizing form over effect" in practice. Enterprises have low participation, and the school-enterprise collaborative education mechanism is not perfect, making it difficult to achieve precise connection between talent training and enterprise job needs.

Third, the disconnection between the curriculum system and job standards. The curriculum setting lacks the participation of enterprises, the curriculum content is not updated in a timely manner, fails to integrate new industrial technologies, processes, and norms, and is not closely connected with enterprise job standards and vocational skill level standards. As a result, the knowledge learned by students is inconsistent with the actual needs of enterprises, and they need long-term training after graduation to adapt to the job requirements, increasing the employment cost of enterprises.

3.2 Technological Innovation Level: Insufficient Collaboration and Poor Achievement Transformation

First, the imperfect collaborative mechanism of school-enterprise technological innovation. There is a lack of a stable technological innovation cooperation mechanism between vocational colleges and enterprises. The cooperation between the two parties is mostly superficial, lacking in-depth collaboration. Enterprises focus on short-term economic benefits, invest insufficiently in technological research and development, and are unwilling to share technical resources and R&D platforms with vocational colleges; vocational colleges lack market orientation, their R&D direction is disconnected from the actual needs of enterprises, and their scientific research achievements lack practicality, making it difficult to transform into enterprise productivity. Although some colleges and universities try to build school-enterprise R&D platforms, there are still problems such as lack of collaborative mechanisms and insufficient resource integration.

Second, the weak ability of technological R&D and achievement transformation. The scientific research strength of vocational colleges is relatively weak, lacking high-level scientific research teams and advanced R&D equipment, and their R&D ability is difficult to meet the technical needs of enterprises; at the same time, the mechanism for transforming scientific research achievements is not perfect, lacking professional achievement transformation platforms and talents, and scientific research achievements are disconnected from the actual production of enterprises, with low transformation efficiency. Most scientific research achievements can only stay in the laboratory stage and are difficult to achieve industrial application. For example, although some colleges and universities have many patents, they lack effective transformation channels and fail to truly serve the development of enterprises.

Third, the imperfect mechanism for patent sharing and benefit distribution. There are no clear provisions between vocational colleges and enterprises on patent sharing, technology transfer, benefit distribution, etc., leading to interest disputes between the two parties in the cooperation process. Enterprises are unwilling to participate in technological R&D cooperation, and the scientific research achievements of vocational colleges are difficult to be shared and transformed, which restricts the in-depth advancement of industry-education integration. Although some industry-led industry-education integration consortia have been established, there are still mechanism gaps in patent sharing and benefit distribution, which affects the enthusiasm for collaborative innovation.

3.3 Social Service Level: Weak Capacity and Lack of Long-Term Mechanism

First, the disconnection between social service capacity and regional needs. The social service positioning of vocational colleges is not clear, failing to fully combine the needs of regional economic development to carry out targeted services such as enterprise employee training, technical consultation, and community education. The service content is single and the form is rigid, which is difficult to meet the needs of enterprise transformation and upgrading, community development, and residents' skill improvement. Although some colleges and universities carry out social training, the training content is inconsistent with the actual needs of enterprises, and the training effect is not good.

Second, the imperfect collaborative service mechanism between schools and enterprises. There is a lack of a mechanism for vocational colleges and enterprises to carry out social services collaboratively. Enterprises fail to give full play to their own industrial advantages and participate in the social service activities of vocational colleges; vocational colleges lack effective connection with enterprises and communities, and their ability to integrate social service resources is insufficient, making it difficult to form a joint force of "school-enterprise collaboration and serving the local area". For example, in some regions, vocational colleges and enterprises lack collaboration in social training, leading to the waste of training resources and low service efficiency.

Third, the lack of a long-term mechanism for serving local industries. In the process of industry-education integration in vocational education serving local industries, there is a lack of a long-term and stable cooperation mechanism. The cooperation is mostly short-term behavior, making it difficult to form a long-term development model of "industry-education symbiosis and two-way empowerment". At the same time, the government's guidance and support are insufficient, and there is a lack of perfect policy guarantees, financial support, and incentive mechanisms, which restricts the improvement of the social service capacity of vocational colleges and makes it difficult to realize the in-depth integration of vocational education and regional economic development. Some industry-led industry-education integration consortia have the problem of "being established but not implemented" and fail to form a sustainable operation mechanism.

4. CONSTRUCTION OF A THREE-DIMENSIONAL IMPLEMENTATION PATH SYSTEM FOR INDUSTRY-EDUCATION INTEGRATION IN VOCATIONAL EDUCATION UNDER THE NEW DEVELOPMENT PATTERN

In view of the practical difficulties of industry-education integration in vocational education under the new development pattern, combined with the era requirements, this paper constructs a three-dimensional implementation path system of industry-education integration from three levels: talent training, technological innovation, and social services, clarifies the implementation focus, mechanism innovation, and specific measures of each level, and promotes the in-depth integration and high-quality development of industry and education.

4.1 Talent Training Level: Constructing an Integrated Model of "Industry Orientation - Job-Course Connection - Practical Education"

First, establish a dynamic monitoring mechanism for industrial needs, jointly with industry associations and enterprises, regularly carry out industrial demand research, analyze the demand for technical and skilled talents brought by the upgrading of the industrial chain and supply chain, and clarify the direction and focus of professional construction. Combined with the development needs of emerging industries and strategic industries under the new development pattern, give priority to the development of related majors such as artificial intelligence, big data, new energy, high-end manufacturing, and modern service industry, transform and upgrade traditional majors, and abolish majors with excess supply, low employment rate, and disappearing job positions, forming a mechanism of "industry demand orientation and dynamic professional adjustment" to ensure that the

professional structure is in sync with the industrial structure. Second, promote the construction of professional groups, focus on core industries and leading industries, build professional groups with key majors as the core and related majors as the support, realize resource sharing and complementary advantages, improve the comprehensive competitiveness of majors, and cultivate compound technical and skilled talents to adapt to the multi-job and multi-skill needs of the industrial chain.

4.1.2 Deepen the connection between jobs and courses, and innovate the curriculum system.

First, establish a school-enterprise co-construction curriculum mechanism, invite enterprise technical backbones and industry experts to participate in the whole process of curriculum design, curriculum development, and teaching implementation, integrate enterprise job standards and vocational skill level standards into the curriculum system, and ensure that the curriculum content is accurately connected with the actual needs of enterprises and job skill requirements. Second, update the curriculum content, timely integrate new industrial technologies, processes, and norms, eliminate outdated content, and add curriculum modules related to industrial upgrading, such as adding industrial robot and intelligent control courses in mechanical majors, and adding big data and artificial intelligence courses in computer majors, to improve students' professional quality and job adaptability. Third, promote the integration of "jobs, courses, competitions, and certificates", integrate the content of vocational skill competitions and vocational skill level certificate assessments into curriculum teaching, promote learning through competitions and practice through certificates, and improve students' practical ability and professional competitiveness.

4.1.3 Strengthen practical education and promote the in-depth implementation of modern apprenticeship.

First, construct a practical teaching system of "school-enterprise collaboration and full-process practice", integrate practical teaching into the whole process of talent training, increase the proportion of practical teaching hours, establish on-campus training bases and off-campus internship bases, and realize the integrated practical teaching of "on-campus training + enterprise internship". Second, further promote modern apprenticeship, clarify the responsibilities and obligations of both schools and enterprises, sign apprentice training agreements, implement the "double tutor system" (on-campus tutors are responsible for theoretical teaching and academic guidance, and enterprise tutors are responsible for practical teaching and job guidance), realize "enrollment is employment, admission is employment, and learning is work", and improve students' on-the-job practical ability and professional quality. Third, promote the order-based training and directional employment model, schools and enterprises jointly formulate talent training plans, cultivate talents according to the needs of enterprise positions, and students directly enter enterprises for employment after graduation, realizing the seamless connection between talent training and enterprise employment needs.

4.2 Technological Innovation Level: Constructing an Integrated Mechanism of "School-Enterprise Collaboration - Platform Support - Achievement Transformation"

Technological innovation is the core driving force for industrial upgrading under the new development pattern and an important support for industry-education integration in vocational education. The integration of industry and education at the technological innovation level needs to strengthen school-enterprise collaboration, build innovation platforms, improve the achievement transformation mechanism, promote technological R&D, patent sharing, and achievement transformation, and help the independent controllability and high-quality development of the industrial chain.

4.2.1 Strengthen school-enterprise collaboration and build a technological innovation community.

First, establish a long-term and stable technological innovation cooperation mechanism between schools and enterprises, sign strategic cooperation agreements, clarify the responsibilities and benefit distribution methods of both parties in technological R&D, talent training, resource sharing, etc., and form a collaborative innovation model of "risk sharing and benefit sharing". Second, set up a joint school-enterprise R&D team, composed of scientific research teachers from vocational colleges and technical backbones from enterprises, to carry out joint R&D around the technical problems in enterprise production and the core technologies in industrial upgrading, and improve the technological innovation ability. Third, strengthen the construction of industry-led industry-education integration consortia, led by industry associations, and jointly with vocational colleges, enterprises, and scientific research institutions, build an integrated closed loop covering the industrial chain, professional chain, innovation chain, and entrepreneurship chain, coordinate teaching and production resources, and promote the coordinated development of technological innovation.

4.2.2 Build innovation platforms and strengthen technological innovation support.

First, jointly build school-enterprise innovation platforms, vocational colleges and enterprises jointly build key laboratories, engineering technology research centers, technological innovation centers, training and R&D bases, etc., share R&D equipment, technical resources, and talent resources, and provide hardware support for technological R&D. Second, build a digital innovation platform, rely on big data, artificial intelligence and other technologies, build an online school-enterprise collaborative innovation digital platform, realize the onlineization of technological R&D, resource sharing, achievement display, and exchange and cooperation, and improve the efficiency of technological innovation. Third, promote the substantial operation of innovation platforms, set up special operation institutions, be responsible for the daily management, project docking, achievement transformation and other work of the platform, and ensure that the platform plays an effective role.

4.2.3 Improve the achievement transformation mechanism and promote patent sharing and industrial application.

First, establish a school-enterprise scientific research achievement transformation mechanism, clarify the ownership, transfer, benefit distribution and other provisions of scientific research achievements, encourage the transformation of scientific research achievements of vocational colleges to enterprises, and enterprises provide venues, funds, markets and other support for the transformation of scientific research achievements to improve the efficiency of achievement transformation. Second, promote patent sharing, establish a school-enterprise patent sharing platform, encourage vocational colleges and enterprises to share patent resources, carry out activities such as joint patent R&D, patent transfer, and patent licensing, improve the utilization rate of patents, and promote the industrial application of technological innovation achievements. Third, strengthen the training of achievement transformation talents, vocational colleges add courses related to achievement transformation, cultivate compound talents with both technical ability and market awareness; schools and enterprises jointly carry out achievement transformation training, improve the achievement transformation ability of scientific researchers and enterprise technical backbones, and promote scientific research achievements from the laboratory to the production line.

4.3 Social Service Level: Constructing an Integrated System of "Regional Orientation - School-Enterprise Collaboration - Long-Term Guarantee"

Social service is an important function of vocational education and an important embodiment of industry-education integration serving the new development pattern. The integration of industry and education at the social service level needs to be based on the needs of regional economic development, strengthen school-enterprise collaboration, carry out diversified social service activities, and build a long-term mechanism for serving local industries.

4.3.1 Based on regional needs, carry out diversified social services.

First, carry out enterprise employee training, formulate training plans jointly with enterprises according to the needs of enterprise transformation and upgrading and employee skill improvement, carry out pre-service training, on-the-job training, skill improvement training, etc., and improve the professional skills and comprehensive quality of enterprise employees. Second, carry out technical consultation services, vocational colleges give play to their own advantages in talents and technology, provide enterprises with technical guidance, process optimization, product R&D consultation and other services, help enterprises solve technical problems in production, and promote enterprise transformation and upgrading. Third, carry out community education services, based on the needs of community development, carry out activities such as vocational skill training, popular science publicity, and cultural services, improve the professional skills and cultural quality of community residents, and help community construction and rural revitalization. Support eligible secondary vocational schools to run community colleges according to the needs of local economic and social development, and expand the scope of social services.

4.3.2 Strengthen school-enterprise collaboration and improve social service capacity.

First, establish a school-enterprise collaborative social service mechanism, clarify the responsibilities and division of labor of both schools and enterprises in social services, enterprises provide industrial resources, practice venues, training needs and other support, and vocational colleges provide talents, technology, teaching resources and other support, forming a social service model of "school-enterprise collaboration and complementary advantages". Second, integrate social service resources, vocational colleges jointly with enterprises, industry associations, communities and other subjects, integrate training resources, technical resources, venue resources, etc., build a

social service sharing platform, and improve the coverage and effectiveness of social services. Third, innovate the form of social services, adopt the combination of "online + offline" to carry out online training, online consultation and other services, improve the convenience of social services; carry out customized and personalized social services combined with regional industrial characteristics to meet the needs of different groups.

4.3.3 Build a long-term mechanism to promote the sustainable development of social services.

First, establish a long-term cooperation mechanism led by the government, dominated by schools and enterprises, and participated by the society, clarify the responsibilities of the government, schools, enterprises, and the society, and form a social service pattern of "government guidance and support, school-enterprise joint efforts, and extensive social participation". The government issues relevant policies to guide vocational colleges to carry out cooperation with enterprises and communities, and provide policy guarantees and financial support for social services; schools and enterprises sign long-term cooperation agreements, clarify cooperation goals, cooperation content, benefit distribution, etc., and promote the in-depth development of cooperation. Second, improve the incentive mechanism, the government gives financial subsidies, honorary awards and other incentives to vocational colleges and enterprises with remarkable results in social services; vocational colleges include the effectiveness of social services into the important content of teacher assessment and professional title evaluation, encouraging teachers to participate in social service activities; enterprises take the participation in social services as an important reference for the selection of various model enterprises, improving the enthusiasm of enterprises to participate. Third, establish a social service evaluation mechanism, jointly with the government, industry associations, enterprises, communities and other subjects, establish a scientific social service evaluation system, evaluate the social service work of vocational colleges from the aspects of service quality, service effect, social satisfaction, etc., timely find problems and optimize services, and promote the continuous improvement and sustainable development of social service work.

5. GUARANTEE MEASURES FOR THE IMPLEMENTATION PATH OF INDUSTRY-EDUCATION INTEGRATION IN VOCATIONAL EDUCATION UNDER THE NEW DEVELOPMENT PATTERN

To ensure the smooth advancement of the three-dimensional implementation path of industry-education integration in vocational education, it is necessary to build a perfect guarantee system from four aspects: policy, funds, talents, and mechanisms, providing strong support for the in-depth development of industry-education integration.

5.1 Strengthen Policy Guarantee and Optimize the Development Environment of Industry-Education Integration

The government should further improve the relevant policies on industry-education integration in vocational education, issue targeted support policies, and optimize the development environment of industry-education integration. First, improve the legal and regulatory system, revise the supporting policies of the "Vocational Education Law", clarify the rights and obligations of both schools and enterprises in industry-education integration, standardize the behavior of school-enterprise cooperation, and ensure the orderly advancement of industry-education integration. Second, issue incentive policies, give tax reductions, financial subsidies, land guarantees and other support to enterprises participating in industry-education integration, encourage enterprises to increase investment in industry-education integration; give financial support, professional construction support and other support to vocational colleges with remarkable results in industry-education integration, and improve the enthusiasm of vocational colleges to promote industry-education integration. Provide a combined incentive of "finance + finance + land + credit" to industry-education integrated enterprises, and implement relevant tax policies in accordance with regulations. Third, strengthen policy guidance, the government overall plans the regional development of industry-education integration, clarifies the development goals, key tasks and implementation steps of industry-education integration, guides vocational colleges and enterprises to carry out industry-education integration cooperation around the needs of regional industrial development, and promotes the in-depth integration of industry-education integration and regional economic development. Promote the construction of a highland for the innovative development of vocational education co-constructed by the Ministry and provinces, continuously deepen the east-west cooperation in vocational education, and launch the pilot project of building a vocational education system for a skilled society.

5.2 Increase Capital Investment and Strengthen the Hardware Support for Industry-Education Integration

Establish a diversified capital investment mechanism, increase capital support for industry-education integration in vocational education, and strengthen hardware support. First, the government increases financial investment, sets up a special fund for industry-education integration, which is used for the construction of training bases in vocational colleges, school-enterprise cooperation projects, the construction of technological innovation platforms, etc., to ensure the smooth development of various work of industry-education integration. Second, guide enterprises to increase investment, encourage enterprises to invest funds to participate in the construction of training bases, talent training, technological R&D, etc., in vocational colleges, and improve the enthusiasm of enterprises to participate in industry-education integration; support enterprises and vocational colleges to jointly build R&D platforms and training bases, share resources and bear costs together. Third, broaden the channels for capital raising, encourage social capital to participate in industry-education integration in vocational education, provide capital support for industry-education integration through donations, investments, cooperation and other methods; vocational colleges raise funds through technical services, achievement transformation and other methods to enhance their own development capacity.

5.3 Strengthen Talent Team Construction and Improve the Core Ability of Industry-Education Integration

Strengthen the construction of the teaching staff in vocational colleges and the technical backbone team in enterprises, and improve the core ability of industry-education integration. First, strengthen the construction of the "double-qualified" teaching staff in vocational colleges, improve the training, introduction, and assessment mechanisms of "double-qualified" teachers, encourage teachers to practice in enterprises, and improve their practical teaching ability and technological R&D ability; invite enterprise technical backbones and industry experts to work as part-time teachers, enrich the teaching staff, and optimize the structure of the teaching staff. Second, strengthen the construction of the technical backbone team in enterprises, vocational colleges provide training, academic improvement and other services for enterprise technical backbones, improve their teaching ability and scientific research ability, so that they can better participate in talent training, technological R&D and other work. Third, cultivate compound talents for industry-education integration, vocational colleges add majors related to industry-education integration, and cultivate compound talents with educational and teaching ability, technological R&D ability, and achievement transformation ability, providing talent support for the advancement of industry-education integration.

5.4 Improve the Collaborative Mechanism and Promote the In-Depth Development of Industry-Education Integration

Improve the multi-party collaborative mechanism among the government, vocational colleges, enterprises, industry associations, etc., and promote the in-depth development of industry-education integration. First, establish a multi-party collaborative governance mechanism, set up an industry-education integration collaborative governance committee, composed of the government, vocational colleges, enterprises, industry associations and other subjects, to coordinate various work of industry-education integration and solve the problems existing in the process of industry-education integration. Second, improve the school-enterprise communication mechanism, establish regular communication, information sharing, project docking and other mechanisms, timely connect industrial needs, talent needs, and technical needs, and promote the continuous in-depth development of school-enterprise cooperation. Third, strengthen the bridge and link role of industry associations, which take the lead in carrying out industrial demand research, professional construction guidance, school-enterprise cooperation docking and other work, promote the precise connection between vocational colleges and enterprises, and improve the pertinence and effectiveness of industry-education integration.

6. CONCLUSION AND OUTLOOK

6.1 Research Conclusion

Under the new development pattern, the integration of industry and education in vocational education is the key link connecting the education chain, talent chain, industrial chain, and innovation chain, and also an important starting point for vocational education to serve industrial upgrading, regional development, and the construction of the new development pattern. At present, China's vocational education industry-education integration faces practical difficulties such as the disconnection between talent training and industrial needs, insufficient collaboration in technological innovation, and weak social service capacity. This paper constructs a

three-dimensional implementation path system of industry-education integration from three levels: talent training, technological innovation, and social services: at the talent training level, construct an integrated model of "industry orientation - job-course connection - practical education", optimize the professional structure, innovate the curriculum system, and promote the in-depth implementation of modern apprenticeship; at the technological innovation level, construct an integrated mechanism of "school-enterprise collaboration - platform support - achievement transformation", strengthen school-enterprise collaborative innovation, build innovation platforms, and improve the achievement transformation and patent sharing mechanism; at the social service level, construct an integrated system of "regional orientation - school-enterprise collaboration - long-term guarantee", carry out diversified social services based on regional needs, strengthen school-enterprise collaboration, and build a long-term mechanism. At the same time, put forward guarantee measures from four aspects: policy, funds, talents, and mechanisms, provide strong support for the smooth advancement of the implementation path of industry-education integration, promote the in-depth integration and high-quality development of industry and education in vocational education, and help build the new development pattern.

Constructing a three-in-one industry-education integration implementation path system of "talent training - technological innovation - social services" can effectively solve the difficulties of "cooperation without integration" and "integration without depth" in industry-education integration, realize the synchronous development of vocational education, industrial development, and regional development, and provide strong support for the training of technical and skilled talents, industrial upgrading, and high-quality regional economic development under the new development pattern.

6.2 Research Outlook

Under the new development pattern, the integration of industry and education in vocational education is facing new opportunities and challenges. With the continuous optimization of the industrial structure, the continuous advancement of technological innovation, and the continuous upgrading of regional development, the implementation path of industry-education integration also needs to be continuously optimized and improved. In the future, further in-depth research can be carried out in the following aspects: first, combined with the development needs of emerging industries and strategic industries, further optimize the implementation path of industry-education integration, and improve the pertinence and effectiveness of talent training, technological innovation, and social services; second, strengthen the research on the digital transformation of industry-education integration, rely on big data, artificial intelligence and other technologies, promote the digital and intelligent development of industry-education integration, and improve the efficiency of industry-education integration; third, strengthen the research on the coordinated development of industry-education integration between regions, promote the sharing of industry-education integration resources and complementary advantages between the east and the west, developed and underdeveloped regions, and help regional coordinated development; fourth, strengthen the research on international industry-education integration cooperation, learn from advanced international experience, promote the integration of China's vocational education industry-education integration with international standards, improve the international competitiveness of China's technical and skilled talents, and help the mutual promotion of domestic and international dual circulations.

In addition, with the continuous development of industry-led industry-education integration consortia, it is necessary to further study the substantive operation mechanism, benefit sharing mechanism, evaluation system, etc., of the consortia in the future, solve the problems such as "being established but not implemented" and "insufficient collaboration" in the construction of the consortia, promote the development of industry-education integration to a deeper level and a wider scope, and provide stronger talent support and technical guarantee for the construction of the new development pattern.

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REFERENCES

[1] Zhang Qiwu, Yao Yuan. Order Tension and Governance Adjustment in the Construction of Industry-Led Industry-Education Integration Consortia[J]. Education and Vocation, 2025(17): 61-68.
[2] Li Mengqing, Fu Mingru. Dynamic Mechanism and Practical Path of Digital Empowerment for Collaborative Governance of Industry-Led Industry-Education Integration Consortia[J]. Vocational Education Forum, 2026(1): 95-103.
[3] Liu Baihui, Ma Qingfei, Jia Chunsheng, et al. Construction Logic and Practical Path of Industry-Led Industry-Education Integration Consortia Under the Background of New Quality Productivity[J]. Heilongjiang Fisheries, 2026(1): 87-91.
[4] Zhang Wei, Lin Yongchun, Wang Liang, et al. Problem Prevention and Optimization Path of Industry-Led Industry-Education Integration Consortia Construction from the Perspective of Complex Adaptive Systems[J]. Research in Higher Education of Engineering, 2025(1): 117-121, 145.
[5] Yin Yuhui, Jin Jin, Zong Cheng. Current Situation, Difficulties and Promotion Strategies of Industry-Led Industry-Education Integration Consortia Construction[J]. Vocational Education Forum, 2025(1): 31-38.
[6] Wang Yangnan. Deepening Path of Industry-Education Integration in Vocational Education Under the New Development Pattern[J]. Chinese Vocational and Technical Education, 2021(30): 5-10.
[7] Li Mengqing, Ren Huan. Reform and Innovation of Vocational Education Talent Training Model from the Perspective of Industry-Education Integration[J]. Vocational and Technical Education, 2020(19): 30-35.
[8] Zhao Jingjing. Practical Difficulties and Solutions of Industry-Education Integration in Vocational Education Under the New Development Pattern[J]. Research in Educational Development, 2022(8): 73-79.