

Original Research Article

Research on the Matching Mechanism between Vocational Education and the Needs of Emerging Industries

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Abstract: Taking the matching mechanism between vocational education and the needs of emerging industries as the research object, this paper analyzes the development trend of vocational education, the characteristics of the needs of emerging industries, and the current status of their matching. Through in-depth research on the professional setting, talent cultivation, and collaborative innovation mechanisms in vocational education, this paper reveals the existing problems in the matching between vocational education and the needs of emerging industries, and proposes corresponding optimization countermeasures. This paper aims to provide theoretical support and practical guidance for the matching between vocational education and the needs of emerging industries in China.

Keywords: Vocational education; Emerging industries; Demand matching; Talent cultivation

1. Introduction

With the rapid development of China's economy and the continuous optimization of industrial structure, the needs of emerging industries for talents have presented new characteristics. As an important channel for talent cultivation, the degree of matching between vocational education and the needs of emerging industries directly affects the quality of talent cultivation and the momentum of industrial development. Currently, there is a certain degree of disconnect between the matching of vocational education and the needs of emerging industries, and improvements are urgently needed in areas such as professional setting, talent cultivation, and collaborative innovation mechanisms. This paper conducts in-depth research on the matching mechanism between vocational education and the needs of emerging industries, aiming to provide a reference for the reform of vocational education and talent cultivation in emerging industries in China.

2. Characteristics of the Matching between Vocational Education and the Needs of Emerging Industries

2.1. The Development Trend of Vocational Education and the Evolution of Emerging Industries

Vocational education, as an important component of China's education system, is closely related to the evolution of emerging industries. With the rapid economic development of China, emerging industries are constantly emerging, presenting new characteristics in talent demand^[1]. Vocational education should promptly adjust its professional settings and talent cultivation models to adapt to the development needs of emerging industries. The development trend of vocational education is characterized by the continuous expansion of its scale, with more and more universities and students choosing vocational education. The quality of vocational education is gradually improving, and the quality of talent cultivation is recognized by society. Vocational education reform is constantly deepening, with reforms being carried out in areas such as professional settings, curriculum systems, and teacher teams. The integration of vocational education and industry is continuously

improving, and models such as school-enterprise cooperation and industry-university-research collaboration are widely applied. Meanwhile, the evolution of emerging industries is also showing new characteristics, including rapid development speed, large demand for talents, high technological content, high requirements for professional quality and skills of talents, and fierce market competition, requiring high innovative ability of talents^[2].

2.2. Analysis of the Current Status of Matching between Vocational Education and the Needs of Emerging Industries

The current situation of matching between vocational education and the needs of emerging industries is not optimistic. There is a certain degree of disconnection between the professional settings of vocational education and the needs of emerging industries. Some vocational education professional settings are too traditional, lacking professional directions required for the development of emerging industries. The talent cultivation of vocational education does not match the talent needs of emerging industries. Emerging industries have high requirements for the professional quality, skills, and innovative ability of talents, while vocational education still needs to strengthen talent cultivation in these aspects. The collaborative innovation mechanism between vocational education and emerging industries is not sound. The cooperation between governments, enterprises, schools, and other parties in collaborative innovation is not close enough, and the degree of resource integration and sharing is not high. This leads to a low degree of matching between vocational education and the needs of emerging industries, affecting the ability of vocational education to serve emerging industries^[3].

2.3. The Importance of Matching between Vocational Education and the Needs of Emerging Industries

The importance of matching between vocational education and the needs of emerging industries is self-evident. The integration of vocational education and emerging industries is conducive to improving the quality of talent cultivation and meeting the talent needs of emerging industries. Matching between vocational education and the needs of emerging industries is conducive to promoting the optimization and upgrading of industrial structure and driving sustained and healthy economic development. Matching between vocational education and the needs of emerging industries is also conducive to improving the social status and influence of vocational education, promoting educational equity and social progress^[4].

3. Issues in Matching Vocational Education with the Needs of Emerging Industries

3.1. Mismatch between Vocational Education's Professional Settings and the Needs of Emerging Industries

In the current vocational education system, the mismatch between professional settings and the needs of emerging industries is becoming increasingly prominent. Some vocational education institutions adhere rigidly to traditional majors, failing to capture the development trends of emerging industries in time, resulting in outdated professional directions that cannot meet the employment needs of emerging industries. For example, in areas such as artificial intelligence, big data, and new energy, vocational education institutions lack corresponding professional settings, leading to a shortage of talent supply in these fields. The professional quality and skill requirements of emerging industries are constantly increasing, while the professional construction and curriculum design of vocational education institutions in these areas are relatively lagging, resulting in the inability of talent cultivation quality to meet the requirements of emerging industries.

3.2. Mismatch between Vocational Education's Talent Cultivation and the Needs of Emerging Industries

There is a significant gap between vocational education's talent cultivation and the needs of emerging industries. The talent cultivation model is too single, lacking diversified cultivation programs tailored to the characteristics of emerging industries, making it difficult for students to adapt to the working environment of emerging industries after graduation. The professional quality and teaching ability of the teaching staff need to be improved. Some teachers lack relevant knowledge and practical experience in emerging industries, resulting in teaching quality that cannot meet the requirements of emerging industries for talents. The practical teaching system is not perfect, lacking practical links closely integrated with emerging industries, and students' practical operation ability and innovative ability cannot be effectively cultivated.

3.3. Incomplete Collaborative Innovation Mechanism between Vocational Education and Emerging Industries

The collaborative innovation mechanism between vocational education and emerging industries is not yet perfect, restricting deep cooperation between the two parties. The cooperation between governments, enterprises, schools, and other parties in collaborative innovation is not close enough, lacking effective resource integration and sharing mechanisms, resulting in the failure to fully utilize vocational education resources. There is insufficient construction of collaborative innovation platforms, lacking research and innovation platforms and technology transfer platforms tailored to the characteristics of emerging industries, affecting the deep integration of vocational education and emerging industries. The cooperation mechanism between vocational education and emerging industries in talent cultivation, scientific research innovation, and achievement transformation is not perfect, making it difficult for the two parties to achieve substantial results in cooperation.

4. Optimized Countermeasures for Matching Vocational Education with the Needs of Emerging Industries

4.1. Adjust Vocational Education's Professional Settings to Meet the Needs of Emerging Industries

With the continuous advancement of technology and sustained economic development, emerging industries have rapidly emerged as an important force driving economic growth. Currently, there exists a certain mismatch between vocational education's professional settings and the needs of emerging industries, which not only constrains the development of emerging industries but also affects the employment quality of vocational education graduates. Adjusting vocational education's professional settings to adapt to the needs of emerging industries has become an important task in the current vocational education reform. Vocational education institutions should conduct in-depth research on the development trends and employment needs of emerging industries, understanding their industrial characteristics, technological trends, and talent requirements. Based on this, they should add professional directions required for the development of emerging industries, such as artificial intelligence, big data, new energy, biotechnology, and other fields. These emerging fields not only have broad employment prospects but are also important directions for future social development. A dynamic adjustment mechanism should be established to match professional settings with the needs of emerging industries. The pace of change and development of emerging industries is extremely rapid. Vocational education institutions need to maintain a keen sense of smell and adjust professional settings in time to meet the employment needs of

emerging industries. This dynamic adjustment mechanism requires the joint participation of the government, enterprises, schools, and other parties to form a combined force.

The government can guide vocational education institutions to adjust their professional settings by formulating relevant policies. Enterprises can cooperate with vocational education institutions to provide internship and practical training opportunities, helping students better understand the actual situation of emerging industries. Schools need to flexibly adjust their professional settings based on market demand and student interests. Strengthen school-enterprise cooperation to promote effective alignment between professional settings and industrial needs. School-enterprise cooperation is one of the important ways for the development of vocational education. Through school-enterprise cooperation, vocational education institutions can better understand industrial needs, and enterprises can provide internship and practical training opportunities for vocational education institutions, helping students better master vocational skills and professional qualities. Vocational education institutions should strengthen cooperation with enterprises, jointly formulate talent cultivation programs and teaching plans, and achieve effective alignment between professional settings and industrial needs. Vocational education institutions should also focus on cultivating students' comprehensive quality and innovative ability. The requirements for talents in emerging industries are not only to master certain vocational skills and knowledge, but also to possess comprehensive quality and innovative ability. Vocational education institutions should focus on cultivating students' comprehensive qualities such as team collaboration, communication, and innovation abilities, thereby improving their comprehensive quality and competitiveness.

4.2. Reform the Talent Training Model of Vocational Education to Improve Talent Quality

Faced with the rapid rise of emerging industries and an increasingly complex market environment, vocational education must reform its talent training model, with the core goal of cultivating composite talents with the abilities required for the development of emerging industries. This reform is not only related to students' employment prospects, but also to the sustainable development of the national economy and the smooth progress of industrial upgrading. Vocational education should clarify the specific requirements of emerging industries for talents, such as innovation ability, cross-border integration ability, and team collaboration ability. Based on these requirements, a diversified talent training model should be constructed. This includes optimizing the curriculum system to ensure that students not only master professional basic knowledge but also possess an interdisciplinary knowledge structure and abilities. The introduction of project-based and case-based teaching methods allows students to learn through practice and improve their problem-solving abilities. Strengthening the construction of the teaching staff is the key to improving the quality of talent training. Vocational education institutions should increase the training efforts for teachers and improve their professional quality and teaching abilities. By organizing teachers to participate in professional training, enterprise practice, international exchanges, and other activities, teachers can understand the development trends and employment needs of emerging industries, constantly update their knowledge structure and teaching methods, and establish incentive mechanisms to encourage teachers to actively participate in teaching reform and scientific research innovation, thereby improving their teaching and research capabilities.

Improving the practical teaching system is an important way to enhance talent quality. Vocational education institutions should cooperate with enterprises to jointly build practical teaching bases and provide more practical opportunities for students. Through practical teaching links such as internships, practical training, and graduation designs, students can apply their knowledge to practical work, improve their practical operation and innovation

abilities, and strengthen the integration of practical teaching and theoretical teaching, ensuring that students possess practical operation abilities while mastering professional basic knowledge. Vocational education institutions should also focus on cultivating students' comprehensive quality, including strengthening their ideological and moral education, mental health education, and career planning education, helping students establish correct values and life views, improve their psychological quality and professional literacy. Encourage students to participate in various academic competitions, innovation and entrepreneurship activities, social practices, etc., to improve their comprehensive quality and competitiveness.

4.3. Establish and Improve a Collaborative Innovation Mechanism between Vocational Education and Emerging Industries

With the rapid development of emerging industries, collaborative innovation between vocational education and emerging industries has become a key to promoting their mutual development. To promote deep integration and achieve win-win development, the government, enterprises, schools, and other parties should strengthen cooperation and jointly establish and improve a collaborative innovation mechanism between vocational education and emerging industries. The government should play a guiding and coordinating role, building a bridge for collaborative innovation between vocational education and emerging industries. The government can formulate relevant policies to clarify the goals and tasks of collaborative innovation between vocational education and emerging industries, providing policy support and guarantees for cooperation between the two sides. The government can also organize various exchange activities, such as industry-university-research symposiums and technology transfer conferences, to build a platform for communication and cooperation between vocational education and emerging industries. Enterprises should actively participate in collaborative innovation between vocational education and emerging industries. As an important force in the development of emerging industries, enterprises are also important partners in talent training for vocational education. Enterprises should strengthen cooperation with vocational education institutions, jointly formulate talent training programs and teaching plans, provide internship and practical training opportunities for students, and help students better understand the actual situation of emerging industries. Enterprises can also share their technological and resource advantages with vocational education institutions, promoting deep cooperation in scientific research innovation and achievement transformation between the two sides.

As the main front of vocational education, schools should also actively integrate into the collaborative innovation system of emerging industries. Schools should strengthen their connections with enterprises, understand the development trends and employment needs of emerging industries, and timely adjust their professional settings and curriculum systems to ensure effective alignment between talent training and industrial needs. Schools should also strengthen the construction of the teaching staff, improve teachers' professional quality and teaching abilities, and provide students with quality teaching resources and services. In the process of building the collaborative innovation mechanism, attention should also be paid to establishing and improving collaborative innovation platforms. These platforms can be physical, such as joint laboratories and technology transfer centers, or virtual, such as online course platforms and remote practical training systems. These platforms can provide resource support and technical guarantees for collaborative innovation between vocational education and emerging industries, promoting deep cooperation and common development between the two sides.

5. Summary

This article, through the research on the matching mechanism between vocational education and the needs of emerging industries, clarifies the development trends of vocational education and the evolving characteristics of emerging industries. It analyzes the current issues in the alignment between vocational education and the needs of emerging industries, and proposes targeted optimization countermeasures. The study found that the matching of vocational education and the needs of emerging industries not only relates to the quality of talent cultivation, but also affects the optimization of industrial structure and the healthy development of the economy. It is necessary to carry out reforms in areas such as professional settings, talent cultivation models, and collaborative innovation mechanisms to achieve close alignment between vocational education and the needs of emerging industries. In the future, with the further promotion of vocational education reform and the development of emerging industries, the matching between vocational education and the needs of emerging industries will become closer, providing strong talent support for China's economic and social development.

Fund projects

1. XGY2022B025 Xuzhou Vocational Institute of Industrial Technology Humanities and Social Sciences (General Project) "Research on Prevention Mechanisms for the Issue of Corruption among Younger Generations".

2. 22GSB-028 Jiangsu Provincial Federation of Social Sciences and University Social Sciences Federation Development Special Project (General Project) "Research on University Social Sciences Federations Promoting School Teachers' Ethics and Conduct Construction".

3. JJXH2024033 General research topic of the JiangSu Provincial Education Discipline Inspection and Supervision Association in 2024: "Research on the Connection Mechanism between Disciplinary Actions in Universities and Criminal Punishment".

References

- [1] Wei Wei, Xu Qianyi. Exploring the Internal Mechanism and Implementation Path of the High Matching Degree between Vocational Education Supply and Economic and Social Development Demand [J]. *Journal of Liaoning Agricultural Vocational and Technical College*, 2023, 25(5): 37-42.
- [2] Ma Hongbo, Sun Jie, Wu Yanfeng, et al. Analysis of the Matching between Industry Talent Demand and Professional Settings in Vocational Colleges: Taking the Cold Chain Logistics Industry as an Example [J]. *Chinese Vocational and Technical Education*, 2022(2): 78-84.
- [3] Yuan Chunxiang. Cultivation of Technical and Skilled Talents Aligned with the Needs of Strategic Emerging Industries in Jiangxi Province: Positioning, Issues, and Paths [J]. *Hebei Vocational Education*, 2023, 7(2): 39-42.
- [4] Ren Shugang, Jin Yan. Research on Improving the Quality of Invention Patents in Ningbo's Strategic Emerging Industries [J]. *China Market Regulation Research*, 2022(2): 74-77.