

Research on the Misalignment Problem Between Vocational Education and Industrial Demand and the Countermeasures of Collaborative Training

Pengyan Wu

Shaanxi Post and Telecommunication College, Xianyang, Shaanxi, China

Abstract: The causes of the mismatch between vocational education and industry demand and the construction and implementation of cooperative training countermeasures are discussed. The article points out that the internal factors of the education system, the external social and economic environment and the obstacles at the policy and institutional level are the main reasons for the dislocation problem. In order to solve this problem effectively, some countermeasures are put forward, such as innovating vocational education mode, strengthening cooperation mechanism between school and enterprise, and establishing and improving feedback mechanism of vocational education quality evaluation. These measures aim to promote the deep integration of vocational education and industrial development, optimize the allocation of resources, and improve the matching degree of talent training and industrial demand. Through the implementation of these countermeasures, the quality of vocational education will be steadily improved, high-quality skilled personnel will be cultivated in line with market demands, and strong human talent support will be provided for economic and social development.

Keywords: Vocational Education; Industrial Demand; Dislocation Problem; Collaborative Cultivation; Educational Quality Assessment; School-Enterprise Cooperation

1. Introduction

With the rapid development of global economic integration and science and technology, vocational education plays a vital role in promoting industrial upgrading and economic transformation. However, there is a

obvious dislocation between vocational education and industry demand, which not only restricts the development space of vocational education, but also affects the competitiveness of industry. Therefore, it has become an urgent need of education reform and industry development to dig deep into the root causes of the mismatch between vocational education and industry demand, and construct and implement effective cooperative training countermeasures. In order to promote the deep integration of vocational education and industry, train more high-caliber skilled talents adapted to market demands, and inject new vigor into economic and social development, the reasons for the disconnection between vocational education and industry demand are analyzed, and practical strategies for collaborative cultivation are put forward.

2. Analysis of the Current Situation of Mismatch Between Vocational Education and Industrial Demand

2.1 The Disconnection between the Vocational Education System and the Evolution of Industrial Structure

Analyzing the dislocation between vocational education and industry demand is an important problem in education reform and economic development. Among them, the disconnection between vocational education system and the evolution of industrial structure is particularly prominent and has become one of the key factors restricting the economic and social development of vocational education services. With the rapid development of science and technology and the continuous adjustment of global industrial structure, new industries such as information technology, artificial intelligence and green energy are rising rapidly, while traditional industries such as manufacturing and agriculture are facing the

pressure of transformation and upgrading. However, the current vocational education system is not adequate for this rapid change. On the one hand, the curriculum and teaching content of vocational education often lag behind the development of the industry and do not reflect the skill demands and trends of emerging industries in a timely manner^[1]. For example, some emerging professional positions, such as big data analysts, artificial intelligence engineers, etc., lack corresponding professional settings and curriculum support in vocational education, resulting in a serious shortage of talent supply in these fields. On the other hand, the old positions and outdated technologies in some traditional industries still occupy a lot of resources in vocational education, and these positions and technologies have gradually declined in the market demand, resulting in the waste of educational resources and the dislocation of talent training. The disconnection between vocational education and the evolution of industrial structure is also reflected in the rigidity of personnel training mode. Traditional vocational education often pays attention to the imparting of theoretical knowledge, but neglects the cultivation of practical operation ability. However, in the modern industry, enterprises pay more attention to the practical ability and innovation ability of employees, requiring employees to quickly adapt to the changing working environment and technical requirements. Therefore, vocational education needs to pay more attention to practical teaching and model innovation in cooperation with enterprises in order to improve the quality and adaptability of talent training. It is worth noting that vocational education is out of step with the evolution of industrial structure and is influenced by a number of factors, including the policy environment, market demand and allocation of educational resources. When formulating and implementing vocational education policies, the government should pay more attention to the trends and demands of industry development, strengthen policy guidance and support, and promote the deep integration of vocational education and industry. At the same time, vocational education institutions should pay close attention to the change of market demand and adjust professional setting and curriculum content flexibly to meet the needs of modern

industry development. In addition, it is also an important way to solve the mismatch between vocational education and industry demand to strengthen the application and popularization of school-enterprise cooperation and the integration of industry and education.

2.2 The Mismatch Between Enterprise Demand and Vocational Education Output

In addition to the disconnection between the vocational education system and the evolution of the industrial structure, the mismatch between the demands of enterprises and the output of vocational education is also a key problem to be solved. This kind of dislocation mainly manifests in the vocational education personnel training quality, skill structure and the enterprise actual demand, which has a big difference. With the rapid progress of science and technology and the continuous upgrading of industry, enterprises have an increasingly urgent need for high-skilled talents. However, vocational education has not fully kept up with this pace in terms of talent training. On the one hand, vocational education institutions tend to focus on traditional skills and basic knowledge in the curriculum, teaching content and practice, while the training of emerging technologies, advanced processes and innovative ability is insufficient^[2]. As a result, the cultivated talents are difficult to meet the actual needs of enterprises in terms of skill level, innovation ability and comprehensive quality. On the other hand, there is a certain gap between the professional setting of vocational education and the change of industrial structure. Some professions related to the decline or transformation of traditional industries still account for a certain proportion of vocational education, and some professions badly needed by new industries have not been established or developed in time. This kind of unreasonable professional setting makes vocational education talent training and the actual needs of enterprises have a big deviation. The mismatch between the demand of enterprises and the output of vocational education is also reflected in the lack of pertinence of personnel training^[3]. In the process of talent training, vocational education institutions often lack in-depth knowledge and analysis of the needs of enterprises, which leads to a gap between the skill structure, professional quality and work experience of

the trained talents and the expected standards of enterprises. This gap not only reduces the competitiveness of vocational education graduates in the job market, but also increases the cost of recruitment and training for enterprises. In order to solve this problem, vocational education institutions need to strengthen communication and cooperation with enterprises, understand the actual needs of enterprises, adjust professional settings and curriculum content according to industry development trend and market demands. At the same time, strengthen practical teaching and cooperation between school and enterprise, improve students' practical ability and professional quality, so that they can better adapt to the actual needs of enterprises. In addition, the government and education departments should give more support and guidance to vocational education, promote the deep integration of vocational education and industry development, and promote the precise connection between talent training and industry needs. Only in this way can the mismatch between the needs of enterprises and the output of vocational education be effectively solved, and a strong talent guarantee can be provided for economic and social development.

2.3 The Double Failure of Policy Guidance and Market Regulation

In addition to the disconnection between the vocational education system and the evolution of industrial structure, the mismatch between enterprise demand and the output of vocational education, the dual failure of policy guidance and market regulation are also important factors leading to the increase of the mismatch. We will give full play to the key role of Policy guidance in the development of vocational education by formulating scientific and rational educational policies, guiding the rational allocation of vocational education resources, and promoting the close integration talent training with industry needs. However, in reality, policy guidance often lags behind and lacks flexibility, and it is difficult to reflect new trends and needs of industry development in a timely and accurate manner. On the one hand, education policies are often formulated on the basis of existing industrial structures and job market conditions, while the development trend of future industries and the

demand for new occupations are not predicted sufficiently, leading to a certain blindness and lag in policy guidance^[4]. On the other hand, educational policies are often restricted by various factors in the implementation process, such as funds, teachers, facilities, etc., which greatly reduces the effect of policies and makes it difficult to achieve the expected talent training goals. At the same time, market regulation, as another important mechanism for the allocation of vocational education resources, also faces many challenges. In the vocational education market, due to the existence of information asymmetry, market monopoly and other factors, market regulation is often difficult to play a full role. On the one hand, the information asymmetry between vocational education institutions and enterprises makes it difficult for educational institutions to accurately understand the actual needs of enterprises, and thus lack pertinence and effectiveness in personnel training. On the other hand, vocational education market competition is not enough, some high-quality educational resources are monopolized by a few colleges and universities, restricting the role of market regulation in resource allocation. Therefore, the dual failure of policy guidance and market supervision makes vocational education face serious challenges in adapting to the needs of industry development. To solve this problem effectively, the government, enterprises, education and other parties need to work together to enhance the forward-looking and flexible policies, improve market mechanism, promote vocational education and industry demand for accurate docking, and provide strong talent support for economic and social development.

3. The root of the Dislocation Problem

3.1 Internal Factors of Education System

The root cause of the mismatch between vocational education and industrial demand needs to be deeply analyzed from within the education system. The internal factors of education system are one of the important reasons for the disconnection between vocational education and industrial development. In terms of educational concept, traditional vocational education often pays too much attention to the imparts of theoretical knowledge, but neglects the cultivation of

practical operation ability. This educational concept, which emphasizes theory over practice, causes students to lack sufficient practical exercise in school to master the skills needed in practical work. At the same time, the curriculum of vocational education often lags behind the development of the industry and does not reflect the changing needs of new technologies and occupations. This kind of curriculum setting lag makes it difficult for vocational education to cultivate talents to meet the actual needs of enterprises in terms of skill structure and professional quality. The shortage of vocational education teachers is also an important factor in the problem of dislocation [5]. On the one hand, vocational education institutions lack teachers with extensive practical experience and professional background, which makes it difficult to guarantee the quality of education. On the other hand, the existing teachers have some deficiencies in knowledge updating and skill upgrading, and it is difficult to adapt to the new requirements of industry development. The lack of teachers not only affects the quality of vocational education, but also restricts the ability of vocational education to meet the needs of the industry. The imperfection of vocational education evaluation system is also an important cause of dislocation problem. At present, the evaluation system of vocational education often pays too much attention to examination results and professional background and neglects to evaluate students' practical ability and professional quality. The imperfection of this evaluation system makes it difficult for vocational education to cultivate talents to meet the expectations of enterprises in terms of comprehensive quality and innovation ability. At the same time, it also restricts the flexibility and innovation of vocational education institutions in talent development.

3.2 External Social and Economic Environment

The root of the mismatch between vocational education and industrial demand lies not only in the internal education system, but also deeply influenced by the external social and economic environment. With the rapid development of globalization and information technology, the social and economic environment is undergoing unprecedented

changes, which brings new challenges to the docking of vocational education and industry.

The evolution and enhancement of the local economic framework have led to increased demands for vocational training. In the process of optimizing and upgrading the industrial structure, new industries continue to emerge, and traditional industries are constantly being transformed and upgraded. However, vocational education systems often struggle to adapt quickly to such changes, resulting in a significant time lag between talent training and market demand. In addition, the unbalanced development of regional economy has also intensified the dislocation of vocational education and industrial demand. Vocational education resources are notably limited in certain economically underdeveloped regions, making it challenging to satisfy local industrial growth needs, and in economically advanced areas, vocational training tends to focus excessively on popular majors, leading to an excess of skilled individuals. Alterations in the Labour market have significantly influenced the field of vocational education. As technology advances and industry evolves, there's a growing need for highly skilled workers in the job market, in contrast to a steady decline in the need for low-skilled labor. Nonetheless, the existing vocational training framework falls short in adequately equipping highly trained individuals to adapt to the evolving labor market. At the same time, the information asymmetry in the labor market also intensifies the dislocation between vocational education and industrial demand. It is often difficult for enterprises to accurately understand the talent training situation of vocational education institutions, and it is difficult for vocational education institutions to accurately grasp the actual needs of enterprises. The influence of social and cultural concepts on vocational education should not be ignored. Across various areas and social circles, the acknowledgment of vocational education remains minimal, labeling it as "second-class education." This notion restricts the expansion of vocational education areas and impacts the integration of vocational training with industrial demands.

3.3 Policy and Institutional Obstacles

The root cause of the mismatch between vocational education and industrial demand is

deeply rooted in the obstacles at the policy and institutional level. These obstacles not only limit the flexibility and adaptability of vocational education, but also hinder its close docking with the needs of industrial development. The lag in policy formulation and implementation is a significant problem. The government's formulation of education policies is often based on the existing industrial structure and employment market conditions, and lacks the foresight of the future industrial development trend. As a result, it is difficult for vocational education policies to reflect the skill needs and occupational changes of emerging industries in a timely manner, resulting in a time gap between the allocation of educational resources and the needs of industrial development. Concurrently, the unwieldy methods and inadequate oversight during policy execution also impact the policy's real impact, posing numerous challenges for vocational education institutions in adjusting to market needs. The collaborative framework linking vocational training and industrial sectors is imperfect. Despite the government's recent endorsement of various policy initiatives aimed at fostering collaboration between schools and enterprises, and merging industry with education, the practical application of these policies frequently presents challenges. From one perspective, the eagerness of companies to engage in vocational training is low, accompanied by a deficiency in the necessary incentive systems and policy backing. Conversely, vocational training facilities encounter challenges like uneven information distribution and the substantial expense of collaborating with businesses, resulting in subpar cooperative outcomes. One must not overlook the inherent obstacles present in the vocational education framework. As an illustration, the existing obstacles between vocational and general education persist, leading to numerous limitations for students in vocational education regarding their admission and job opportunities. Furthermore, the competitive dynamics within vocational training institutions influence the ideal distribution of resources and the caliber of talent education. Certain areas excessively focus on the quantity and magnitude of vocational training facilities, overlooking the implications of building and enhancing quality,

leading to a significant disparity between skill development and market needs.

4. Construction and Implementation of Collaborative Training Countermeasures

4.1 Innovate Vocational Education Models

In the face of the mismatch between vocational education and industrial demand, the innovation of vocational education model has become a key part of the construction and implementation of collaborative training countermeasures. The innovative vocational education model aims to break the shackles of the traditional education framework, adapt to the rapidly changing industrial demand and market demand, and cultivate high-quality talents with both solid theoretical knowledge and superb practical skills. Developing an educational framework that amalgamates production with learning is essential. Merging industry with education signifies a profound amalgamation of vocational training and industrial growth, with the ideal distribution of educational and industrial assets achieved via collaboration between schools and enterprises, coupled with alternating work and study. In this framework, vocational schools and businesses collaboratively create programs for talent development, incorporating their real requirements into educational materials and curricula. This approach allows students to engage with the actual work setting and tasks in school, facilitating early adaptation to professional roles and enhancing job competitiveness. Initiate instruction focused on projects. Project-based teaching involves using projects as a catalyst to enhance students' hands-on skills and creativity through the completion of particular projects. Vocational training involves integrating actual enterprise projects, enabling students to acquire practical problem-solving knowledge and skills, and to enhance their professional attributes like teamwork, communication, and coordination. Enhance the utilization of methods in teaching information. As information technology evolves swiftly, vocational training needs to fully utilize contemporary IT resources, including online classes, virtual simulations, and more, to enhance educational methods and resources. This approach enhances the impact of teaching and liberates students from time and space constraints, enabling them to access

high-quality education at any time and place.

4.2 Strengthen the School-Enterprise Cooperation Mechanism

Strengthening the cooperation between schools and enterprises is vital in the development and execution of joint training strategies. Collaboration between schools and enterprises plays a crucial role in merging vocational training with industrial growth and is essential for cultivating top-notch skills to meet market needs. Strengthening the collaboration between schools and enterprises requires the creation of a durable and enduring cooperative bond. It's imperative for the government to implement pertinent strategies to foster and assist vocational schools and businesses in building strong collaborative ties, via the execution of cooperation accords, building of training facilities, collective training, and other methods to realize resource distribution and synergistic benefits. Institutions of vocational education ought to proactively address corporate requirements, grasp the technological evolution and trends in talent demand among businesses, to promptly modify their curriculum and teaching materials, and guarantee that their talent training aligns well with market needs.

Advocate for comprehensive enhancement of collaboration between schools and businesses. As part of collaborative efforts, companies ought to engage proactively in the entire talent development process, encompassing the establishment of curricula, development of teaching plans, building of training bases, educating teachers, among others. By actively involving businesses, it's possible to align educational material and practical applications with the real demands of these enterprises, thereby enhancing students' hands-on skills and professional caliber. Concurrently, vocational training facilities ought to proactively offer technical assistance and staff training to businesses, aid in resolving technical and talent deficits, and foster a situation of mutual advantage and benefit. Develop and enhance the assessment and response system for collaboration between schools and businesses. To guarantee the effectiveness and caliber of collaboration between schools and enterprises, it's essential to set up a scientific assessment system for consistently monitoring the execution of

cooperative projects. By assessing, issues and shortcomings in collaboration can be identified over time, enabling the modification of cooperative tactics and actions accordingly. Concurrently, create a system for gathering feedback and advice from businesses and students promptly, aiming to supply valuable resources to enhance collaboration between schools and enterprises.

4.3 Establish and Improve the Quality Evaluation and Feedback Mechanism of Vocational Education

During the development and execution of joint training strategies, creating and enhancing a quality evaluation and feedback system for vocational education plays a crucial role in maintaining educational quality, optimizing resource distribution, and boosting the alignment between skill training and industrial needs. The creation of this system is designed to promptly mirror the instructional standards of vocational schools, student learning proficiency, and the extensive collaboration with businesses via scientific, thorough, and evolving assessments, thereby offering robust data backing and a solid foundation for policy modification, educational overhaul, and enhancing school-business partnership tactics. Developing the quality evaluation system must encompass various aspects, such as the promptness of the curriculum and educational material, the expertise and industry experience of the educators, the establishment and application of the training foundation, the impact of students' hands-on skills and professional caliber on training, and the outcomes of collaborative school-business endeavors. To guarantee the thoroughness and precision of the evaluation outcomes, it's essential to integrate the evaluation approach with both quantitative and qualitative assessments, incorporating objective measures derived from statistical data analysis and thorough evaluation based on subjective decisions like expert opinions and corporate feedback. The feedback system underscores the importance of promptly conveying and efficiently utilizing the outcomes of evaluations. It's imperative to set up a swift reaction system to guarantee that the issues and shortcomings identified in the assessment are promptly communicated to the appropriate departments, offering a period for correcting

and enhancing the issues. Conversely, establishing a platform for sharing information is crucial to enhance the clarity and openness of evaluation outcomes, thereby encouraging involvement from the government, businesses, educational bodies, and societal segments in oversight, creating a collaborative entity, and advancing the ongoing enhancement of vocational education quality.

It's essential for the quality evaluation and feedback system to focus on integrating regular assessments with ongoing enhancement. This is crucial not just for performing thorough quality reviews consistently, but also for introducing active oversight in everyday teaching. This ensures that vocational training remains aligned with industrial growth rates, continually fine-tunes talent training frameworks, and caters to the varied requirements of economic and social progress.

5. Conclusions

This research, delving deeply into the fundamental reasons behind the disparity between vocational training and industrial needs, uncovers the impact of various elements, including the education system's internal and external socio-economic conditions, along with policy and institutional influences. Consequently, this research proposes joint training strategies, including the development of new vocational education frameworks, bolstering the cooperation between schools and businesses, and the creation and enhancement of quality evaluation and feedback systems for vocational education, aiming to foster a thorough amalgamation of vocational education with industrial growth and elevate the caliber of talent training. Adopting these strategies aids in addressing the disparity between present vocational training and industrial needs, while also guiding the course

for future vocational education advancement. Through ongoing enhancement of the vocational education framework and bolstering the collaboration between educational institutions and businesses, we aim to develop a greater number of proficient and adept individuals who satisfy market needs, offering robust talent assurance and intellectual backing for economic and societal progress.

References

- [1] Zhou Fenghua, Du Yiping, Li Lei. Research on current situation and promotion strategy of coordinated innovation in vocational education, Higher Education and Continuing Education [J]. China Vocational and Technical Education, 2024(6):3-10.
- [2] Xu Yucheng, Wang Bo, Zhu Ping. The Times value, realistic dilemma and Countermeasures of talent training in vocational education with integration of science and education [J]. Educational Academic Monthly, 2023(9):58-66.
- [3] Tang Xiaojun, Li Sheng. Value implication, problem characterization and optimization Countermeasures of talent training for international students in Vocational education [J]. Education and Occupation, 2023(2):95-100.
- [4] An Jianliang, Zhai Weicong. Research on the mechanism of university-enterprise collaborative education for vocational undergraduate education [J]. Education and Career, 2024(17):55-60. (in Chinese)
- [5] Gong Guangjun. Problems and Countermeasures of integration of production and education for Preschool education majors in Higher vocational colleges [J]. Journal of Heilongjiang Teacher Development College, 2019, 43(3):100-103.