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Talent Cultivation Challenges and Solutions in Secondary-to-Higher Vocational Education under Supply-side Reform

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Abstract: As China's vocational education reform continues to deepen, the through-training model has emerged as a crucial component in building a modern vocational education system. This model can significantly reduce the duration of academic programs while enhancing students' skill levels. Nevertheless, during its current implementation, this model still encounters numerous challenges. In light of this, this paper aims to thoroughly examine the existing issues in the development of vocational education. Additionally, it will explore the benefits of vocational education through talent training within the context of advancing the supply-side structural reform of vocational education, proposing potential pathways for talent cultivation.

Keywords: Supply-side structure of vocational education; Vocational education; Integrated talents

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1. Introduction

In the context of the new era, as China adjusts its economic structure and accelerates industrial upgrading, vocational education—a critical domain closely tied to social and economic development—is encountering unparalleled opportunities and challenges. By advancing the supply-side structural reform in vocational education, it is possible not only to align effectively with the national innovation-driven development strategy and foster high-quality economic growth but also to achieve ongoing optimization in the allocation of educational resources, addressing the pressing demand for quality vocational education among the population. As a key component of the vocational education system, both secondary and higher vocational education focus on establishing a seamless link between vocational and general education, as well as academic and vocational training, through integrating educational resources and refining talent cultivation pathways. This effort aims to deliver more highly skilled and competent individuals to society.

2. Problems existing in the development of vocational education

2.1. Vocational education in the social level of recognition is not high

As a crucial component of the education system, vocational education plays a significant role in nurturing technical and skilled talents for society. Despite its indispensable contribution to driving economic and social development, as well as supporting employment and entrepreneurship, vocational education often lacks adequate recognition at the societal level. This low regard has emerged as a primary obstacle to the sustainable and healthy growth of vocational education.

The low level of social recognition for vocational education manifests in several ways: First, under the impact of traditional ideas like "academic success leads to officialdom," many students and parents tend to favor general academic education. They view vocational education as a "substandard option" primarily chosen by students with lower academic performance. This perception results in vocational education holding a relatively inferior position in society, making it challenging to attract a larger pool of high-quality students [1].

Moreover, the limited interaction between vocational education and general education also serves as a significant factor contributing to the low level of social acknowledgment. Currently, there is still a lack of efficient communication systems and integration pathways between China's vocational and general education sectors. This situation creates substantial challenges for students attempting to transition between these two educational domains.

2.2. The management system of vocational education is not perfect

The vocational education management system lacks overall unity and coordination. The insufficient cooperation among different departments has created numerous challenges in both policy development and execution. This situation arises because the vocational education management system has predominantly operated under government control for an extended period. Such a relatively isolated educational framework makes it difficult for businesses, the market, and society to engage in the decision-making and administration of vocational education. Consequently, it becomes challenging for the government to precisely identify the actual needs of the market, society, and enterprises when overseeing the broader context [2].

The flaws in the vocational education management system are also evident in the insufficient emphasis placed on vocational education. Despite growing recognition of vocational education in recent years, the primary focus remains on general education. This imbalance results in numerous challenges for vocational education, including resource allocation, student recruitment, financial investment, and societal acknowledgment.

The inadequacies within the vocational education management system are also evident in the subpar overall quality of vocational education. For instance, various aspects such as the facilities for vocational education, the teaching staff, and the caliber of students tend to lag. Collectively, these factors result in the overall quality of vocational education being less remarkable, making it challenging to fulfill the current society's demand for high-caliber skilled professionals [3].

2.3. The compatibility between vocational education and industrial development is not high

Currently, the specialized programs, course frameworks, and practical training offered by certain vocational colleges in China do not align well with the real requirements of modern industrial growth. As science and technology advance rapidly in our country, a modern industrial framework has begun to emerge, and the industrial structure has become increasingly refined. Nevertheless, some vocational colleges have not promptly updated their program offerings based on regional industrial positioning, structural characteristics, and industry

traits. This ultimately results in challenges in cultivating skilled professionals who can fulfill the practical demands of industrial progress [4].

The talent development model and outcomes of vocational education training often significantly differ from the current demands of enterprises regarding the professional qualities of relevant talents. When establishing medical technology programs, certain vocational education institutions might focus excessively on trendy or ostensibly promising fields, such as advanced medical equipment operation technologies, without adequately considering regional economic conditions and actual market needs. Furthermore, under the backdrop of globalization, the nursing sector is progressively shifting towards internationalization. Nevertheless, the curricula and teaching materials in nursing programs at some vocational education institutions lack a global perspective, thereby diminishing the competitiveness of graduates in the international employment arena [5].

3. The advantages of talent training in middle and higher vocational education institutions

3.1. Academic system and efficiency advantages

In the context of the academic system, the approach of linking secondary and higher vocational schools effectively prevents the repetition of learning and reduces resource wastage that frequently occurs in traditional educational models. Typically, secondary vocational education emphasizes the teaching of fundamental skills and occupational knowledge, whereas higher vocational education places greater emphasis on the development of professional theories and advanced skills. Nevertheless, during the actual process of higher education, students often re-encounter basic knowledge, which not only extends the overall duration of the academic system but also diminishes students' learning efficiency. Conversely, through comprehensive planning of the teaching program and curriculum, the model connecting secondary and higher vocational education achieves a seamless integration of the two educational stages. This approach eliminates redundant course content and allows students to gain more extensive knowledge and skills within a shorter timeframe.

Regarding learning efficiency, this approach allows students to engage in uninterrupted learning throughout their time in school, eliminating the break and adjustment phase that typically occurs upon graduation. This enables them to concentrate more on the study and practice of professional skills. Furthermore, with an early-defined employment path, students can begin career planning sooner while still in school. They can also make targeted choices regarding courses and learning materials, thereby enhancing the relevance and effectiveness [6] of their studies.

3.2. Integration and optimization of educational resources

In the model that connects secondary and higher vocational schools, the educational resources of secondary vocational schools and higher vocational colleges can be efficiently combined. This includes merging faculty, sharing teaching equipment, and refining curriculum resources. Through this integration, schools can fully utilize existing educational resources while preventing redundant construction and resource wastage. Additionally, it fosters interaction and collaboration among teachers, thereby enhancing teaching proficiency and the professional competence of educators.

The connection model between secondary and higher vocational schools places greater emphasis on the integration and continuity of the curriculum. By planning the teaching program and course content holistically, the school ensures that students receive a structured and all-rounded education during both the secondary and

higher vocational phases. Additionally, the institution focuses on refreshing and broadening the curriculum to align with industrial advancements and market requirements. Such enhancements not only boost students' learning outcomes but also strengthen their employability and competitive edge in the job market [7].

3.3. Combining practical teaching with academic research

Practical instruction plays a crucial role in vocational education. By replicating real-world work scenarios or collaborating with companies on hands-on training initiatives, students can engage with and acquire the essential skills of their field of study. This type of teaching not only enhances students' practical capabilities but also assists them in converting their theoretical understanding into applicable skills, thus providing a strong base for their future professional paths.

Simultaneously, scholarly inquiry plays a crucial role in the development of talent within secondary and higher vocational schools. Through involvement in research projects, authoring academic articles, and other related activities, students can achieve a deeper comprehension of the theoretical advancements and evolving trends in their field of study while cultivating critical thinking and problem-solving capabilities. Engaging in academic research not only expands students' knowledge base but also encourages their innovative mindset and curiosity for exploration.

The integration of practical instruction with academic research serves as a key feature in the talent development approach within secondary and higher vocational schools. Through this integrated method, students can enhance their comprehension of specialized knowledge, utilize theoretical concepts for solving real-world problems, and simultaneously acquire practical abilities. This holistic educational framework contributes to nurturing interdisciplinary professionals who possess both a robust theoretical background and exceptional practical expertise [8].

4. Deepen the innovation of talent training paths in middle and higher vocational education

4.1. Optimize the system structure by integrating production and education

The combination of industry and education represents an educational framework that merges industrial and educational development, with the goal of enhancing talent cultivation quality by organically linking education and industry. In the context of middle and advanced vocational talent training, the fusion of industry and education can facilitate the ongoing refinement of system structures, as well as strengthen the alignment between the educational pathway, talent development, industrial growth, and innovation processes.

Through the integration of industry and education, schools can better define the objectives of talent cultivation for secondary and higher vocational colleges. By collaborating with enterprises, schools can gain a more precise understanding of industrial development trends and market demands within relevant sectors. This insight enables them to develop a talent training framework that aligns more closely with practical requirements. A talent development approach guided by market needs ensures that students possess the skills and competencies necessary to meet corporate expectations upon graduation [9].

By combining industry with education, middle and higher vocational colleges can significantly enhance the innovation of their talent development programs. As industries continue to evolve and advance, businesses' requirements for specialized talents also change. In the context of integrating industry with education, schools can promptly grasp shifts in industry demands and, based on this understanding, make appropriate adjustments

to their curricula. This ensures that students acquire up-to-date knowledge and skills, thereby strengthening both their practical expertise and creative capabilities.

The combination of industry and education offers a valuable hands-on platform for cultivating talent in secondary and higher vocational schools. Serving as a crucial vehicle for industrial progress, companies possess extensive practical resources and expertise. Through collaboration with businesses, educational institutions can offer increased practical experiences for students, enabling them to continually develop and advance their abilities in real-world settings. This application-focused instructional approach assists students in more effectively acquiring specialized skills and enhancing their employability [10].

4.2. Improving the quality of education through school-enterprise cooperation

Teachers form the cornerstone of educational work. Within school-enterprise collaborations, institutions can bring in additional educators from external sources who possess extensive practical experience and industry backgrounds. Alternatively, current faculty members can be organized to engage in enterprise-related practices, skill development programs, and academic exchange initiatives. This ensures that teachers gain a more profound comprehension of the evolving trends and market requirements within relevant industries. Through recruitment, external introductions, and ongoing training, the overall composition of the teaching staff can be progressively enhanced. This approach fosters a well-balanced structure, characterized by proficient expertise and an adequate number of instructors.

Teaching evaluation serves as a crucial component of educational activities. Consequently, educational institutions should develop a rational and comprehensive assessment framework. To enhance this system, it is essential to incorporate diverse and all-encompassing evaluation criteria. Assessment should not solely emphasize students' academic outcomes but also encompass various dimensions, including practical skills, professional competence, collaborative abilities, and innovative thinking. This multifaceted approach to evaluation can provide a more thorough insight into students' overall capabilities and offer valuable guidance for effective talent development. Additionally, when assessing teachers' instructional quality, multiple factors such as lesson planning, pedagogical strategies, and teaching outcomes should be taken into account to ensure the evaluation remains both extensive and impartial [11].

To enhance the evaluation system, it is essential to reinforce the communication and utilization of evaluation outcomes. These outcomes should be promptly shared with both teachers and students, enabling them to recognize their respective advantages and areas for development, thereby facilitating focused enhancements. Additionally, the evaluation outcomes should function as a critical reference for educational reform, offering substantial data support for refining curricula, advancing teaching methodologies, and elevating instructional quality. By emphasizing the communication and application of these results, a positive cycle can be established, leading to sustained improvement in the quality of talent cultivation within secondary and higher vocational colleges [12].

In the context of school-enterprise collaboration, educational institutions should enhance interaction and cooperation with businesses to facilitate the merging and sharing of educational resources. Internally, schools can organize regular teaching workshops and curriculum coordination sessions, enabling instructors from various disciplines and departments to exchange teaching methodologies and curriculum design concepts. This approach contributes to the collective improvement of talent development programs. Such internal dialogue and teamwork can help dismantle information silos and ensure the effective utilization of educational assets. Additionally, partnerships with external companies can bring in cutting-edge technology, equipment, and industry benchmarks, offering students a more realistic work environment and internship prospects, thereby strengthening their hands-

on skills and employability [13].

4.3. Promoting a sound mechanism through industrial colleges

Industrial colleges represent a novel approach and platform for fostering the deep integration of industry and education, as well as enhancing collaboration between schools and enterprises. Positioned at the cutting edge of industrial development, these colleges are established jointly by universities and industrial companies. Their objective is to fulfill the roles of specialized teaching, technological research and development, enterprise support, and fostering innovation and entrepreneurship. This is achieved by promoting comprehensive co-construction and sharing of resources such as materials, information, knowledge, talent, and technology among schools, financial institutions, and enterprises. Such hybrid educational entities offer an innovative mechanism and model [14] for the combination of industry and education, as well as collaborative student training.

Vocational colleges serve as a crucial platform for school-enterprise collaboration and the fusion of industry with education. By engaging in close partnerships with businesses, these institutions can co-create curriculum materials, establish training facilities, and conduct hands-on teaching activities, thereby achieving a seamless blend of educational and production components. This level of integration not only boosts students' practical skills and occupational competence but also strengthens their competitiveness in the job market.

The School of Industry emphasizes the development of students' innovative mindset and entrepreneurial skills. Through the provision of courses related to innovation and entrepreneurship, as well as the organization of relevant competitions, the school encourages students to enhance their creative thinking and passion for starting businesses. Additionally, the school can further enhance collaboration with companies to offer students real-world experiences and platforms that support innovation and entrepreneurship, assisting them in achieving their entrepreneurial aspirations [15].

5. Conclusion

In conclusion, despite numerous challenges in the development of vocational education, the integrated training model connecting secondary and higher vocational education offers significant support for building a modern vocational education system. In the context of deepening supply-side structural reform in vocational education, innovations through multidimensional pathways—such as integrating industry with education to optimize the system structure, fostering school-enterprise collaboration to enhance training quality, and refining the promotion mechanisms of industrial colleges—can further improve and refine the talent cultivation model for secondary-higher vocational education. These efforts not only boost societal recognition of vocational education but also optimize its management system, strengthen alignment between vocational education and industrial development, and lay a solid foundation for nurturing high-quality, highly skilled applied talents. As vocational education reform continues to deepen, the talent cultivation model for secondary and higher vocational education will continue to exhibit new vitality, contributing more top-tier technical and skilled talents to China's economic and social development while supporting the realization of the dreams of educational empowerment and industrial rejuvenation.

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