

Optimization Paths for Teaching Staff Construction in Vocational Colleges from the Perspective of Industry-Education Integration

Wei Jiang^{1,a}

¹Guangzhou Vocational College of Technology & Business, Guangzhou, China

^a390612017@qq.com

Keywords: Industry-education integration; Vocational colleges; Teaching staff construction

Abstract: As a core strategy for the reform and development of vocational education in the new era, industry-education integration is crucial for improving educational quality and cultivating high-quality technical and skilled talents. The construction of teaching staff is the core element and key link of vocational education reform, which directly determines the quality of talent cultivation, and is also important for matching industrial development demands and promoting the connotative development of vocational education. Based on the perspective of industry-education integration, this study takes teaching staff construction in vocational colleges as the research object, and adopts the methods of literature analysis and policy analysis. It systematically sorts out the era background and policy orientation of teaching staff construction, and deeply analyzes the prominent problems in terms of structural composition, professional competence, and incentive mechanisms. On this basis, this paper proposes a targeted and systematic optimization path from the aspects of structural optimization, professional ability improvement, and incentive mechanism perfection. The research conclusions can provide theoretical reference and practical enlightenment for promoting the high-quality development of vocational college teaching staff and the deep integration of industry and education.

1. Introduction

Currently, China's economy is transitioning from high-speed growth to high-quality development. Strategic emerging industries are flourishing, and digital and intelligent transformation is accelerating the upgrading of the manufacturing industry towards high-end, intelligent, and green development. During this transformation, the demand for high-quality technical and skilled talents has become increasingly urgent. Such talents are required not only to possess solid professional skills but also innovative capabilities, practical operational skills, and cross-border integration abilities. As the primary platform for cultivating skilled talents, vocational education must align its talent training directly with industrial development. The degree to which the professional competence and practical experience of vocational college teachers match industrial development directly affects the accuracy and effectiveness of talent cultivation^[1]. Therefore, against the backdrop of industrial transformation towards high-quality development, building a teaching staff

that understands the industry, excels in teaching, and is capable of innovation, from industry-education integration, has become an inevitable choice for vocational education to adapt to the needs of the times.

In recent years, China has attached great importance to the development of vocational education and has explored a reform path characterized by industry-education integration and school-enterprise cooperation. *Decision of the State Council on Accelerating the Development of Modern Vocational Education* clearly proposes to "improve the school-enterprise cooperative education mechanism and innovate the training mode for technical and skilled talents," emphasizing the need to "strengthen the construction of the 'dual-qualified' teaching staff." *Opinions on Promoting the High-Quality Development of Modern Vocational Education* places "deepening industry-education integration and school-enterprise cooperation" in a key position, advocating to "promote all-round and in-depth cooperation between schools and enterprises" and "build a high-level 'dual-qualified' teaching staff." *Opinions on Promoting the High-Quality Development of Modern Vocational Education* further emphasizes "deepening industry-education integration and school-enterprise collaborative education" and proposes to "improve the training, certification, employment, and incentive mechanisms for 'dual-qualified' teachers." In 2022, *Vocational Education Law* has elevated industry-education integration and school-enterprise cooperation to national legislative level, clarifying the responsibilities and obligations of the government, vocational colleges, and enterprises in teaching staff construction. The introduction of this series of policies has provided clear policy guidance and institutional guarantees for building the teaching staff in vocational colleges from the perspective of industry-education integration, highlighting the importance and urgency of this endeavor^[2].

Presently, although China has made certain achievements in constructing the teaching staff for vocational colleges, there remain many shortcomings in adapting to the development of the economy and industrial sectors, as well as meeting the connotative construction requirements of industry-education integration. For instance, some teachers lack practical enterprise experience, leading to a disconnect between teaching content and industrial reality. The proportion of "dual-qualified" teachers is insufficient, the certification system is imperfect, and the structure is unreasonable. These problems not only cause confusion for teachers' own professional development but also hinder the in-depth advancement of industry-education integration and the improvement of talent cultivation quality in vocational education. Therefore, exploring the pathways for teaching staff construction in vocational colleges and resolving these development dilemmas have become key issues in promoting the high-quality development of vocational education from the perspective of industry-education integration.

This study belongs to policy and practical research on vocational education. It adopts the methods of literature research, policy analysis and problem-oriented analysis, focusing on the practical difficulties of teaching staff construction under industry-education integration, and puts forward targeted optimization paths.

2. Current Situation and Existing Problems

In recent years, driven by relevant policies, vocational colleges in China have placed great importance on teaching staff construction, with the number of teachers growing steadily. Colleges have supplemented their professional teaching force through open recruitment and talent introduction, which has largely met the demand brought by the expansion of vocational education. Secondly, the construction of the "dual-qualified" teaching staff has achieved initial results. Vocational colleges have improved teachers' practical teaching abilities through school-enterprise cooperation, training, and further education, and have promoted the certification of "dual-qualified"

teachers. Meanwhile, teacher incentive mechanisms have been continuously optimized. Vocational colleges have gradually established incentive mechanisms linked to teaching performance and practical achievements, encouraging teachers to participate more in school-enterprise cooperation, technological research, and development activities.

However, from the perspective of industry-education integration, there remain many deep-seated problems in the teaching staff construction of vocational colleges, which severely restrict the in-depth advancement of industry-education integration and the improvement of the quality and efficiency of vocational education.

2.1. Unreasonable Structure of Teaching Staff

First, the professional structure is imbalanced. A gap exists between the professional structure of the teaching staff in vocational colleges and the demands of regional industrial development. There is a surplus of teachers in traditional majors but a severe shortage in majors related to emerging industries (such as artificial intelligence, health big data, and new energy vehicles). Vocational colleges establish emerging majors to adapt to industrial development needs but often lack teachers with relevant professional backgrounds in the early stages. Consequently, they must rely on teachers from traditional majors to switch to teaching these new areas, resulting in an inability to guarantee teaching quality. Second, the age structure is unreasonable. There is a phenomenon of coexisting "aging" and "youthification," coupled with a shortage of middle-aged backbone teachers. Senior teachers possess rich teaching experience but update their knowledge slowly and have a weak acceptance of emerging industrial technologies. Young teachers have high academic qualifications and strong learning abilities but lack practical teaching experience and front-line industrial work experience, leading to a disconnect between teaching and industrial reality. Third, the structure of "dual-qualified" teachers is unreasonable. Existing evaluation criteria for "dual-qualified" teachers mostly focus on professional titles and vocational qualification certificates, lacking sufficient consideration of practical enterprise experience. This does not meet the connotative requirements of "practical" and "skilled" for "dual-qualified" teachers^[3].

2.2. Insufficient Professional Competence of Teachers

First, theoretical teaching is disconnected from production practice. Teachers lack an understanding of industry development trends, and teaching content remains at the level of traditional textbooks. There is a shortage of teaching methods such as case studies, project-based learning, and situational teaching. New industrial technologies, processes, and standards fail to be integrated into teaching in a timely manner. Second, practical teaching ability is weak. Due to a lack of front-line enterprise work experience, vocational college teachers fail to update their practical skills promptly. They have a limited understanding of enterprise production processes, technical standards, and job requirements, which makes them unable to meet the needs of practical teaching, and are unable to conduct effective practical instruction. Third, innovation capacity is insufficient. Faced with the new demands of emerging industrial technologies and the new situation of vocational education reform, some teachers lack a forward-looking vision in curriculum development, teaching mode reform, and talent training program design^[4]. They find it difficult to break through traditional thinking patterns and cannot adapt to the demand for cultivating high-quality technical and skilled talents under the background of industry-education integration.

2.3. Imperfect Incentive and Guarantee Mechanisms

First, the incentive mechanism is incomplete. Currently, the assessment and incentive

mechanisms for teachers in vocational colleges mainly take teaching and scientific research achievements as core indicators. There is insufficient incentive for work related to industry-education integration, such as participating in school-enterprise cooperation, enterprise practice, technological research and development, and curriculum development. Second, the professional title evaluation mechanism is unreasonable. It largely follows the evaluation standards of undergraduate institutions, overemphasizing indicators such as academic qualifications, published papers, and research projects, while assigning insufficient weight to the core competencies of vocational education, such as practical teaching ability, enterprise service ability, and skill competition guidance ability. Third, career development space is restricted^[5]. Vocational college teachers have a single career development path and a narrow professional and technical development trajectory. There is a lack of a classified promotion mechanism for work with different focuses, such as practical teaching versus theoretical research. In particular, there is no corresponding career development channels for teachers who have made contributions in practical teaching and industrial services.

3. Optimization Paths and Strategies

3.1. Optimizing the Structure of Teaching Staff

3.1.1. Introducing High-Quality Talents Targeted to Industrial Needs

Based on regional economic and industrial needs, vocational colleges should establish a targeted teacher introduction mechanism. They should strengthen cooperation among government, schools, industries, and enterprises. By researching regional industrial development, they can clarify the demand for majors in vocational colleges and formulate precise teacher introduction plans. They should broaden recruitment channels, break traditional restrictions on academic qualifications and professional titles, and adopt flexible approaches such as flexible introduction, special appointments, and part-time engagement of enterprise experts. It is beneficial to introduce technical backbones and industry experts with rich front-line practical experience from enterprises to serve as part-time teachers. This not only leverages the practical operational experience of enterprise personnel but also integrates front-line production and practical experience into vocational colleges, promoting the formation of a new teaching staff structure with full-time teachers as the main force and part-time teachers as a supplement. To optimize talent introduction policies, vocational colleges can jointly launch preferential policies with local governments based on regional industrial needs, including improved salaries and benefits, research start-up funds, settlement allowances, and housing security, so as to enhance the attractiveness of vocational colleges to outstanding industrial talents.

3.1.2. Building a Rational Echelon of Teaching Staff

Strengthen the training of young teachers. Vocational colleges should establish a mentor system for young teachers, arranging for experienced backbone teachers and enterprise technical experts to provide one-on-one guidance to help young teachers improve their teaching and practical abilities. They should encourage young teachers to participate in school-enterprise cooperation projects and enterprise technological research and development to enhance their professional innovation capabilities. They should also encourage backbone teachers and young teachers to form teaching and research teams, improving professional competence through academic exchanges and project research and development to help young teachers grow rapidly. Vocational colleges should optimize the professional title evaluation system by formulating standards that align with the

characteristics of vocational education. They should appropriately raise the proportion of senior professional title holders in majors that match regional industrial needs, which helps build high-quality and high-level teaching teams. At the same time, they should break identity barriers in professional title evaluation, allowing part-time enterprise teachers and highly skilled talents to participate in the school's internal professional title assessment, so as to stimulate the vitality of both full-time and part-time teaching staff.

3.1.3. Improving the Quality of “Dual-Qualified” Teachers

Improve and implement certification standards for dual-qualified teachers. Vocational colleges should abandon the certification approach that “values certificates over practice” and establish a dual-core standard focusing on both practical ability and teaching ability. They should integrate enterprise practice indicators—including front-line practice experience and achievements, technical skill levels, and enterprise service evaluations—into the dual-qualified teacher certification system. This will guide teachers to actively master core industrial production skills, new technologies, and processes. Vocational colleges should establish a long-term training mechanism for dual-qualified teachers. They should jointly build teacher training bases with enterprises, provide targeted training based on professional development, and organize teachers to conduct on-the-job practice and rotation in enterprises, involving them in production, operation, and technological research and development. In addition, vocational colleges should encourage teachers to participate in vocational skill competitions and technical contests to promote learning and practice through competition. They can enhance teachers' professional skills by aligning training with industrial development policies and competition design, thus alleviating the shortage of dual-qualified teachers in majors that meet regional industrial needs.

3.2. Enhancing Teachers' Professional and Practical Competence

3.2.1. Updating the Concept of Talent Cultivation

Update the concept of talent cultivation. Vocational colleges should regularly invite vocational education experts and enterprise technical personnel to deliver special lectures, helping teachers establish a student-centered, competency-based, and practice-oriented teaching philosophy. They should encourage teachers to closely integrate theoretical teaching with production practice, bringing production into the classroom and applying theory in industry to promote teaching model reform. They should also establish a school-enterprise collaborative curriculum development mechanism, enabling teachers and enterprises to jointly develop curriculum systems and teaching resources. This effectively integrates production practice into classroom teaching, transforms teachers' traditional theoretical teaching mindset, and enhances their awareness of the importance of practical education.

3.2.2. Strengthening Practical Teaching and Enterprise Practice

Establish a mandatory enterprise practice system. Vocational colleges should formulate management measures for teachers' enterprise practice, clarifying requirements for duration, content, and assessment. They should strictly require teachers to complete enterprise practice and link practice experience with evaluation mechanisms such as professional title assessment, performance appraisal, and outstanding teacher selection to ensure effective implementation. They should also innovate the enterprise practice mode. Teachers' enterprise practice should be substantive rather than superficial. Vocational colleges should break away from simplistic traditional forms such as observation, theoretical learning, and research. Instead, they should deeply

integrate teachers' theoretical knowledge with front-line production practice, enabling them to genuinely participate in enterprise technological transformation, product development, and problem-solving projects. This allows teachers to master new industrial technologies, processes, and standards through hands-on experience. Vocational colleges should establish two-way workstations—enterprise workstations in colleges and teacher workstations in enterprises—to strengthen in-depth cooperation between teaching and production, forming a dynamic and complementary mechanism where teaching supports production and practice feeds back into teaching.

3.2.3. Promoting Innovation Ability and Enterprise Service Capacity

Vocational colleges can jointly establish platforms such as technological research and development centers and collaborative innovation centers with enterprises. They should organize teachers and enterprise technical personnel to conduct technological research, development, and problem-solving projects. They should encourage the implementation of teachers' scientific research projects to provide technical solutions and support enterprise production. They should stimulate teachers' innovation vitality and enhance their ability to identify, summarize, and refine practical innovation points through training and lectures, helping them better recognize innovation opportunities in theoretical and practical teaching. Vocational colleges should also offer incentives for enterprise service innovation, and incorporate innovative achievements from enterprise services, theoretical teaching, and practical teaching into the performance assessment and evaluation system with special recognition or rewards.

3.3. Improving Incentive Mechanisms and Career Development

3.3.1. Establishing a Diversified Incentive System

Establish a performance assessment system suited to industry-education integration. Vocational colleges should include school-enterprise cooperation, enterprise practice, technological research and development, curriculum development, and skill competition guidance in their assessment indicators. They should adopt a diversified and scientific evaluation method that integrates theoretical teaching and production practice, and optimize the salary system to be consistent with the assessment mechanism. The results of industry-education integration performance assessment should be directly linked to performance-based pay to give full play to the guiding role of performance incentives. Vocational colleges should also enrich spiritual incentives, such as establishing awards for “Model Dual-Qualified Teachers” and “Advanced Individuals in School-Enterprise Cooperation”, and enhance teachers' professional honor and sense of belonging through the recognition and promotion of outstanding teachers.

3.3.2. Broadening the Career Development Space for Teachers

Construct diversified career development paths for teachers. Traditionally, teachers have had only a single promotion path through professional titles or administrative positions. Vocational colleges should integrate professional and technical development, project research and development, and other channels into teachers' career pathways, forming a diversified development system that offers more options aligned with their personal strengths and career goals. Vocational colleges should provide effective guidance for teachers' career planning. They can identify teachers' development needs through training and research, and formulate personalized career development plans accordingly. In addition, vocational colleges should improve the teacher mobility mechanism. They should establish a rotation system for teachers across departments and between administrative

and teaching positions. Encouraging teachers to move between different majors and departments will help improve their comprehensive capabilities and broaden their professional horizons.

4. Conclusion

From the perspective of industry-education integration, the construction of teaching staff in vocational colleges is the core support for the high-quality development of vocational education and the fundamental guarantee for cultivating high-quality technical and skilled talents. At present, although China has made phased achievements in the construction of vocational college teaching staff, there are still prominent problems such as unreasonable structure, insufficient professional competence, and imperfect incentive mechanisms, which restrict the in-depth advancement of industry-education integration.

Through the multi-subject coordination of government, schools, industries and enterprises, and by taking precise connection with industrial demand as the orientation, practical teaching as the core, and diversified incentive as the guarantee, vocational colleges can build a teaching staff team with reasonable structure, strong professional ability and rich practical experience. This study enriches the theoretical research on teaching staff construction under the background of industry-education integration, and provides practical paths for vocational colleges to strengthen team building and improve the quality of talent cultivation.

However, this research mainly focuses on theoretical analysis and policy interpretation, without empirical investigation and quantitative verification. In the future, empirical research such as questionnaire surveys and in-depth interviews can be carried out to further explore the actual dilemmas and influencing factors of teaching staff construction, so as to enhance the persuasiveness and applicability of the research conclusions.

References

- [1] Huang Y. *Theory and Practice of the Construction of Vocational Education Teaching Staff*[M]. Beijing: Higher Education Press, 2020.
- [2] Jiang D Y. *New Researches on Vocational Education Pedagogy*[M]. Beijing: Educational Science Press, 2017.
- [3] Wang J P. *Research on the construction of "dual-qualified" teaching staff in vocational colleges under the background of industry-education integration*[J]. *Chinese Vocational and Technical Education*, 2020(12):5-10.
- [4] Li J G. *On the path of optimizing the structure of the teaching staff in vocational colleges*[J]. *Vocational and Technical Education*, 2021(15):45-49.
- [5] Zhang L. *Research on the promotion strategies of vocational college teachers' practical teaching ability from the perspective of industry-education integration*[J]. *Education and Vocation*, 2022(8):78-83.