

Research on the Improvement of Professional Competence of "Double-Qualified" Teachers from the Perspective of Industry-Education Integration

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Abstract: Against the background of high-quality development of vocational education, industry-education integration has become a core guideline for vocational education reform, and building "double-qualified" teachers is critical to improving vocational education quality. Based on literature review and case analysis, this paper finds that such teachers' professional competence covers four dimensions: teaching implementation, industry practice, industry-education coordination, and teaching-research innovation. Yet it faces four dilemmas: cognitive bias, incomplete training, inadequate incentives, and shallow industry-education integration. This paper proposes targeted improvement paths and provides references for related practice and theoretical research.

Keywords: Industry-Education Integration; Double-Qualified Teachers; Professional Competence; Improvement Paths

1. Introduction

With the national strategy of high-quality vocational education development, industry-education integration has evolved from a supplementary talent training measure to a core principle running through vocational education reform. As the main force of talent training and the bridge of industry-education integration, "double-qualified" teachers' professional competence directly determines vocational education quality and talent cultivation effectiveness. Although national supporting policies have been issued successively, many "double-qualified" teachers still fail to meet the demands of in-depth industry-education integration, with prominent problems such as disconnection between theory and industrial practice and lack of systematic training

mechanisms.

Against this background, exploring the professional competence structure of "double-qualified" teachers from the industry-education integration perspective is theoretically and practically significant. Theoretically, it enriches interdisciplinary research on industry-education integration and teacher professional development; practically, it guides vocational colleges to optimize teacher training models and promote in-depth industry-education integration. Existing domestic and foreign studies have achieved certain results in "double-qualified" teacher construction, but most lack a systematic analysis of competence structure from the industry-education integration perspective. This study uses literature research and case analysis to explore core competence dimensions and lay a foundation for exploring improvement paths.

2. Core Composition of Professional Competence of "Double-Qualified" Teachers

2.1 Teaching Implementation Ability

Teaching implementation ability stands as the most basic professional quality for double-qualified teachers. Its core goal is to integrate real industrial needs into daily teaching activities. Compared with conventional teaching capacity, it places more stress on targeted design, practical operation and continuous innovation, with the final aim of helping students grasp professional skills that meet the real demand of industrial development. This ability covers three key parts. The first is curriculum design, which requires teachers to combine industrial norms and post demands in the development of courses, so that course content can keep pace with the renewal of industrial technology.

2.2 Industry Practice Ability

Industry practice ability is the most prominent

characteristic that sets double-qualified teachers apart from other teachers, and it is also the key factor that promotes the real integration of industry and education. This ability includes three aspects. First, teachers need to keep abreast of advanced technology in the industry and maintain continuous renewal of their own knowledge system. Second, teachers need to have skilled operation capacity adapted to actual enterprise posts. Third, teachers need to provide effective technical services for enterprises. Teachers should always pay attention to the development trend of the industry, learn new technology in a timely manner, and take part in on-the-job practice in enterprises to accumulate first-hand experience. This experience can then be applied to classroom teaching.

2.3 Industry-Education Coordination Ability

Industry-education coordination ability is the core quality that helps teachers promote in-depth cooperation between schools and enterprises, and it also shows the important connecting role of teachers between education and industry. This ability mainly includes three aspects. The first is the ability to carry out school-enterprise cooperation, which requires teachers to build long-term and stable cooperative relations with enterprises, connect the talent training goal of the school with the actual demand of enterprises, and promote the smooth implementation of cooperative projects. The second is the ability to develop courses and teaching materials, which means teachers need to work with technical staff from enterprises to build practical courses and compile teaching materials that integrate real enterprise cases and industrial technical norms. The third is the ability to build and manage training bases, which requires teachers to participate in the construction and daily management of training bases built by schools and enterprises, so that these bases can fully play their role in talent training.

2.4 Teaching-Research Innovation Ability

Teaching-research innovation ability is the lasting power that supports the professional growth of double-qualified teachers. The second is technological innovation ability, which requires teachers to cooperate with enterprises in technical research and development, so as to help enterprises realize technological upgrading. The third is teaching method innovation ability, which means teachers need to actively try new

teaching modes such as mixed teaching, and use modern information technology to enrich teaching forms, enhance classroom attraction and improve teaching efficiency.

In summary, the four dimensions are interconnected and mutually reinforcing: teaching implementation ability is the foundation, industry practice ability is the core, industry-education coordination ability is the key, and teaching-research innovation ability is the driving force. Only by comprehensively improving these four abilities can teachers adapt to industry-education integration and support high-quality vocational education development.

3. Practical Dilemmas in Competence Improvement

3.1 Cognitive Bias and Vague Positioning

Wrong cognition and unclear positioning form the most fundamental barrier to competence growth. Many vocational colleges hold a simplistic understanding of double-qualified teachers. They directly regard double-qualified teachers as those who hold both academic certificates and professional skill certificates, and take such certificates as the main basis for identification. This narrow understanding neglects the essential requirement of integrating teaching capacity with industrial practice capacity. It also overlooks the key value of coordination capacity and innovation capacity in advancing industry-education integration.

As a result, the development of double-qualified teachers tends to become formal and certificate-centered. Colleges lay excessive stress on obtaining various certificates in training and assessment, but ignore the real improvement of practical operational capacity, industry connection capacity and resource integration capacity. Some teachers still follow traditional teaching thinking. They pay more attention to the transmission of theoretical knowledge and care little about the cultivation of practical skills and the connection with industrial development. Their consciousness of independent professional progress is weak.

3.2 Imperfect Training System and Insufficient Pertinence

The training system lacks scientificity and pertinence, mainly reflected in three aspects. Pre-service training overemphasizes educational theory and lacks industrial practice content, with

weak school-enterprise cooperation, resulting in new teachers' "emphasis on theory over practice". In-service training adopts a "one-size-fits-all" model with unified content and single methods, divorced from frontline teaching and industrial development, failing to target individual differences.

The school-enterprise collaborative training mechanism is superficial. Enterprises do not fully participate in training plan design, and teachers' enterprise practice is formalized due to insufficient time and funding guarantees, making it hard to accumulate practical experience and master cutting-edge technologies.

3.3 Inadequate Incentive and Guarantee Mechanisms

Incentive and guarantee systems fail to stimulate teachers' initiative. The evaluation system still focuses on teaching hours, papers, and research projects, with low weight for industry practice, technical services, and school-enterprise cooperation, guiding teachers to pursue theoretical achievements rather than practical abilities.

Incentive measures are single and weak, lacking special funds and proportional returns for teachers' practice and innovation input, dampening enthusiasm. Guarantee conditions are insufficient: heavy teaching tasks leave no time for practice and training; funding investment is inadequate; and the two-way "revolving door" for school-enterprise personnel is blocked by institutional barriers.

3.4 Shallow Industry-Education Integration and Insufficient Support

Shallow industry-education integration is an external bottleneck. Most school-enterprise cooperation stays at providing practice bases and hiring part-time teachers, lacking in-depth cooperation in teacher training, curriculum development, and technological research. Enterprises lack participation enthusiasm due to imperfect benefit-sharing mechanisms.

Industry-education integration consortia and training bases are formalized, with poor equipment and weak operation capacity, unable to support teachers' skill improvement. The industry demand investigation mechanism is missing, leading to outdated training content disconnected from industrial updates. Government guidance and policy support are insufficient, with unclear division of

responsibilities among government, schools, and enterprises.

4. Paths to Improve Professional Competence

4.1 Establish Industry-Education Integration Orientation and Clarify Competence Positioning

Vocational colleges should break the "double-certified" misunderstanding and establish a scientific concept centering on the four core abilities. They should formulate clear competence standards combined with regional industrial and professional characteristics, specifying requirements for each dimension. Schools should strengthen concept publicity and training to help teachers correct cognition.

Teachers should update educational concepts, abandon "emphasis on theory over practice", establish industry-demand-oriented teaching ideas, and make personalized improvement plans to actively participate in practice and research.

4.2 Build School-Enterprise Collaborative Training System and Enhance Training Pertinence

For pre-service training, colleges should cooperate with leading enterprises to design training programs integrating post skills and industrial technologies, arrange on-the-job practice, and establish enterprise-led assessment mechanisms. For in-service training, implement "menu-based" precise training targeting different ability weaknesses, innovate mixed training methods, and invite enterprise experts to guide.

Improve the collaborative training mechanism, clarify school-enterprise rights and obligations, and enterprises should provide practice positions and technical support. Establish a "double tutor" system to offer all-round guidance for teachers' development.

4.3 Improve Incentive and Guarantee Mechanisms and Stimulate Endogenous Motivation

Reform the evaluation system by increasing the weight of industry practice, technical services, practical teaching, and innovation achievements, and reducing overemphasis on papers and teaching hours. Enrich incentive forms and set special funds to reward outstanding teachers in practice and cooperation, with subsidies for enterprise practice and priority in promotion.

Strengthen time, funding, and policy guarantees:

arrange flexible working hours for teachers, increase training funding, and smooth the school-enterprise personnel flow mechanism. The government should provide tax incentives and financial subsidies for enterprises participating in teacher training.

4.4 Deepen Industry-Education Integration and Strengthen Support

Promote the construction of industry-education integration consortia to integrate government, school, enterprise, and industry resources, establish benefit-sharing mechanisms, and stimulate enterprise participation. Strengthen school-enterprise training base construction with advanced equipment and enterprise technicians to simulate real working environments.

Establish an industry demand investigation mechanism to update training content synchronously with industrial development. The government should strengthen guidance and supervision, clarify responsibilities, and increase financial investment for consortia and base construction.

5. Conclusion

Under the background of vocational education's high-quality development, industry-education integration is an inevitable trend, and "double-qualified" teacher construction is the key link. This study draws three conclusions: first, the professional competence of "double-qualified" teachers includes four core dimensions that form a complete system; second, competence improvement faces four core dilemmas restricting industry-education integration; third, targeted improvement paths should be taken to solve practical problems.

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