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Research on the School-Based Training Model for "Dual-qualified" Teachers in Vocational Undergraduate Programs under the Background of the "Double High Plan"

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Abstract: The comprehensive implementation of the "Double High Plan" and the high-quality expansion of vocational undergraduate education have imposed higher demands on the professionalization, interdisciplinary competence, and innovative capabilities of faculty members in vocational institutions. "Dual-qualified" teachers, serving as the core pillar for the substantive development of vocational education, directly determine the quality of talent cultivation through their quantity, structural composition, and professional competence. School-based training, characterized by its targeted approach, practical applicability, and effective implementation, represents the most direct and sustainable pathway for vocational undergraduate institutions to build such faculty teams. Grounded in the requirements of the "Double High Plan" and the educational positioning of vocational undergraduate programs, this paper identifies current challenges in school-based training for dual-qualified teachers and proposes a new training model featuring precise objectives, modular content, diversified methodologies, project-based processes, comprehensive evaluations, and institutionalized safeguards. This framework provides theoretical foundations and practical solutions to enhance teachers' instructional skills, practical abilities, technical service capabilities, and innovative capacities, thereby enabling vocational undergraduate institutions to achieve high-level, distinctive development under the guidance of the "Double High Plan."

Keywords: Double High Plan; Vocational Undergraduate Education; "Dual-qualified" Teachers; School-based Training; Training Models

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1. Introduction

The "Double High Plan" aims to "lead reform, support development, embody China's characteristics, and reach world-class standards, " driving vocational colleges to focus on connotative development, improve educational quality, and enhance industrial service capabilities. As the highest level of the modern vocational education system, vocational undergraduate education bears the important mission of cultivating high-level technical and skilled talents. The requirements for "dual-qualified" teachers have been upgraded from "holding dual certifications" to higher standards, including strong teaching

abilities, refined practical skills, high-level research capabilities, and broad industrial service scope[1].

Currently, most vocational undergraduate institutions have evolved from upgraded vocational colleges with high-quality educational foundations. Their faculty teams face challenges including insufficient practical skills, limited industry experience, weak innovation capabilities, and fragmented training systems. Traditional school-based training programs exhibit shortcomings such as outdated content, monotonous formats, disconnection between industry and education, and superficial evaluation mechanisms, making them inadequate for meeting the requirements of the "Double High Plan" and vocational undergraduate development needs. Therefore, establishing a new training model that aligns with "Double High" standards, adapts to institutional realities, and focuses on dual-qualified teacher development has become a critical priority for vocational undergraduate institutions.

2. Core Concepts and Theoretical Foundations

2.1. Definition of Core Concepts

The Double High Plan, namely the China Characteristic High-Level Vocational Colleges and Programs Construction Plan, emphasizes the development of high-level professional clusters, high-level faculty teams, technical and skill innovation platforms, and the enhancement of social service capabilities. It is a national strategy to lead the high-quality development of vocational education. Vocational undergraduate education, at the undergraduate level, adheres to its type positioning, aiming to cultivate high-level technical and skilled talents with solid theoretical foundations, advanced skills, innovative capabilities, and strong management abilities. It emphasizes the unity of educational, academic, vocational, and innovative qualities[2].

"Dual-qualified" teachers possess both teaching credentials and industry-specific professional qualifications, combining educational expertise with practical professional skills. They are versatile educators capable of delivering theoretical instruction, providing hands-on training guidance, developing projects, and offering technical support. Under the vocational undergraduate standards, greater emphasis is placed on technological innovation, technology commercialization, and industrial service capabilities. The school-based training model is a teacher development system centered on schools, guided by job requirements, and focused on teacher growth. It features self-designed, self-implemented, self-evaluated, and self-optimized processes, characterized by localization, relevance, continuity, and practicality.

2.2. Theoretical Basis

Adult Learning Theory: Emphasizes problem-centered teacher training that utilizes practical applications as its foundation and application-oriented objectives, prioritizing experiential, participatory, and task-based learning approaches. Competency-Based Education (CBE) Theory: Uses dual-competency frameworks to derive training objectives, content, and evaluations, ensuring precise alignment between training programs and skill development. Learning Organization Theory: Facilitates the establishment of learning communities within schools to promote self-directed learning, collaborative teamwork, and continuous professional growth among educators. Collaborative Education Theory: Integrates school-enterprise resources to enable deep corporate involvement in school-based training programs, creating complementary synergies between institutional training and external practical experiences[3].

3. Core Requirements of the "Double High Plan" for Dual-qualified Teachers in Vocational Undergraduate Programs

Teacher ethics and professional conduct, coupled with educational competence, emphasize fostering virtue and nurturing talents, encompassing the ability to integrate ideological and political education into curricula, the skill of meticulous teaching, and the capacity to guide professional development. High-level professional teaching competence enables the development of advanced courses, modular textbooks, and digital resources, facilitating project-based, modular, and blended teaching approaches. Strong engineering practice capabilities are demonstrated through real-world project

experience in enterprises, allowing instructors to guide complex practical training, resolve intricate technical challenges, and implement process improvements. High-quality technological innovation capabilities involve participation in R&D initiatives, collaborative research projects, patent applications, and technology commercialization to support industrial upgrading. Advanced capabilities in professional cluster development include teamwork, program development, curriculum integration, teaching reform, and quality assessment[4].

4. Current Issues in School-Based Training for Dual-qualified Teachers in Vocational Undergraduate Programs

4.1. Ambiguous Training Objectives and Disconnection from the "Double High" Standards

The training objectives remain confined to academic credential enhancement and theoretical advancement, failing to align with the "Double High" standards or the high-level requirements of vocational bachelor's programs. It lacks systematic design for dual-qualified instructors' competencies, practical skills, and innovative capabilities. The outdated training content lacks relevance and practicality, primarily focusing on theoretical lectures and policy studies. These approaches are disconnected from professional cluster development, emerging industrial technologies, innovative teaching models, and real-world corporate projects, making it difficult to meet teachers' genuine professional growth needs[5].

4.2. Single Training Methods with Weak Practicality and Interactivity

The training program primarily relies on centralized lectures and report presentations, with a relatively low proportion of practical training methods such as case-based teaching, workshops, on-the-job training, project-based studies, and corporate internships. There is insufficient integration of industry and education, low enterprise participation, and school-based training predominantly conducted in closed campus environments. Corporate mentors, industrial projects, practical scenarios, and industry standards have not been effectively incorporated into the training system.

4.3. The Evaluation Mechanism is Insufficiently Defined, Lacking Closed-loop Management

The evaluation primarily focuses on sign-in records, reflections, and examinations, neglecting process performance, capability enhancement, practical outcomes, and job transfer, making it difficult to measure the actual effectiveness of training. The safeguard mechanisms are weak, with insufficient training continuity. Training systems, funding, faculty resources, platforms, and incentive mechanisms are inadequate, and school-based training lacks long-term planning and stable support.

5. Establishing a School-Based Training Model for Dual-qualified Teachers in Vocational Undergraduate Programs under the "Double High Plan"

This study constructs a new model of "six-in-one" school-based training: precise objectives, modularized content, diversified methods, project-based processes, multi-dimensional evaluation, and institutionalized safeguards, forming a closed-loop system of "demand—design—implementation—evaluation—optimization".

5.1. Target Precision: Alignment with Dual High Standards, Stratified Classification

Top-level objective: To establish a structured "dual-qualified" team that meets the requirements for vocational undergraduate education and the development of high-level professional clusters. Competency objectives: Simultaneous enhancement of teaching competence, practical skills, innovation capability, educational effectiveness, and service capacity. Tiered objectives: New faculty members: Strengthen teaching fundamentals and complete the introductory training for dual-qualified educators; Core faculty members: Enhance practical skills and improve teaching and technological innovation capabilities; Program leaders: Strengthen capabilities in professional cluster development, team

leadership, and industry-education integration.

5.2. Content Modularization: Position Alignment with Dual-Teacher Emphasis

Establish five core modules to ensure training content is systematic, practical, and cutting-edge: 1. Teacher Ethics and Education Module: Curriculum-based ideological education, craftsmanship spirit, teacher ethics and conduct, and education through craftsmanship; 2. Teaching Competency Module: Advanced course development, modular teaching materials, digital teaching, project-based instruction, and teaching skills competitions; 3. Practical Skills Module: Operation of training equipment, new processes and technologies, resolution of complex technical problems, and hands-on implementation of corporate projects; 4. Innovation and Research Module: Technology R&D, collaborative research projects, patent applications, technology commercialization, and social services; 5. Professional Cluster Development Module: Talent cultivation programs, industry-education integration, quality assessment, and team management.

5.3. Diversified Approaches: Integration of Learning and Practice, Industry-Education Collaboration

Innovate diversified blended training approaches to enhance engagement and effectiveness: School-based professional development through collective lesson planning, open classes, demonstration sessions, teaching seminars, and workshops; Dual-mentorship model combining school faculty with industry experts for mentorship partnerships; Corporate immersion programs where teachers engage in hands-on training at enterprises, workshops, and project sites; Project-driven initiatives utilizing teaching reform initiatives, technical service projects, and practical training programs; Blended learning platforms integrating online resources with national smart education systems and school-based resource libraries; Competency-driven training through organizing teaching skill competitions, vocational skill contests, and innovation challenges.

5.4. Process Projectization: Task-oriented and outcome-driven

Transform school-based training into implementable, verifiable, and applicable project tasks: Teaching Reform Projects: Delivering an advanced course, a set of modular teaching materials, and a suite of digital resources; Practice Enhancement Projects: Completing corporate internships, skill certification programs, and practical training project development; Innovation Service Projects: Undertaking cross-disciplinary research projects, patent applications, and enterprise technical services; Collaborative Team Building Projects: Participating in professional cluster development, teaching team building, and quality engineering initiatives.

5.5. Multi-dimensional Evaluation: Multivariate Assessment with Emphasis on Practical Outcomes

Establish a three-dimensional evaluation system encompassing “process + outcomes + transformation + feedback”: Process evaluation: attendance, classroom performance, task completion, and training notes; Outcomes evaluation: course projects, teaching materials, skill certifications, project reports, and competition awards; Transformation evaluation: teaching improvements, practical training effectiveness, student feedback, corporate evaluations, and performance enhancements; Diverse evaluation: combining internal school assessments, corporate evaluations, peer reviews, and student feedback.

5.6. Institutionalized Safeguards: Long-term Support for Sustainable Development

Institutional Safeguards: Establish school-based training management protocols, dual-qualified teacher development guidelines, and corporate internship systems. Organizational Support: Set up a Teacher Development Center, Dual-Qualified Teacher Training Task Force, and School-Enterprise Training Committee. Financial Support: Allocate dedicated training funds, corporate internship budgets, and incentive funds. Platform Infrastructure: Develop school-based practical training centers, faculty enterprise workstations, master studios, and industry-education integration bases. Incentive Mechanisms: Link training outcomes directly to professional title evaluations, performance assessments, excellence awards, promotions, and employment appointments.

6. Implementation Pathway for the School-Based Training Model

6.1. Demand Diagnosis: Conduct Precision Capability Assessment

Based on professional cluster development and job requirements, conduct dual-qualification competency assessments for teachers to establish individual growth portfolios and training needs inventories. Customized training solutions: Implement personalized development strategies by creating tailored school-based training programs for educators, specifying clear objectives, content, tasks, timelines, and deliverables to ensure precision-driven instruction. Industry-academia collaboration: Leverage premium corporate resources by engaging corporate mentors in teaching, practical guidance, and outcome evaluation, integrating enterprise projects, industry standards, and industrial culture throughout the training process.

Evaluation Tool Development: Collaborating with industry experts, vocational education researchers, and key faculty members, we have developed an assessment toolkit aligned with the "Dual-qualified" teacher competency standards for vocational undergraduate programs. The toolkit includes quantitative evaluation scales (e.g., professional knowledge tests, practical skill operation scorecards), qualitative assessment indicators (e.g., teaching case analyses, enterprise project experience interview outlines), and 360-degree evaluation questionnaires covering student feedback, peer evaluations, corporate mentor assessments, and self-assessment dimensions. This ensures comprehensive evaluation of theoretical teaching capabilities, practical guidance skills, technological R&D and application competencies, as well as industry trend awareness. Dynamic Tracking Mechanism: Building upon initial competency assessments, we establish dynamic teacher competency development profiles. Regular re-evaluations and comparative analyses of dual-qualified teacher capabilities are conducted periodically (per semester or academic year). By integrating training participation records from personal growth portfolios, teaching practice improvement logs, and enterprise project outcomes, we continuously update training demand lists to maintain diagnostic accuracy and precision. This data-driven approach provides essential support for dynamic adjustments to personalized training plans tailored to individual faculty members.

6.2. Process Control: Establish a closed-loop operation mechanism

Implement a full-cycle management system encompassing "planning-implementation-monitoring-evaluation-improvement" to ensure effective training outcomes. Outcome dissemination: Maximize training value by converting exemplary training results into teaching resources, practical training projects, and technical services, establishing a virtuous cycle of "training-capability-performance". Dynamic tracking: Utilize teachers 'professional development portfolios through regular seminars, mid-term reports, and field observations to monitor training progress, task completion quality, and competency enhancement in real-time, enabling timely identification and targeted adjustments of training issues. Quality assurance: Establish a monitoring team comprising school supervisors, industry experts, and educational administrators to oversee training program execution, curriculum implementation, and instructional methodologies, ensuring alignment with "dual-high" standards and job requirements. Feedback optimization: Develop multi-channel feedback mechanisms to collect teachers' suggestions on training content, faculty qualifications, and organizational management. Combine competency assessment results with teaching performance data to dynamically refine training programs, curriculum frameworks, and evaluation methods, creating a closed-loop improvement process of "issue identification-causality analysis-measure formulation-effect validation".

7. Expected Outcomes of the Model Implementation

The dual-qualified faculty structure has been significantly optimized: the proportions of "dual-qualified" teachers, highly skilled teachers, and teachers with enterprise experience have all increased substantially. Teachers 'overall capabilities have been comprehensively enhanced, with simultaneous improvements in teaching, practical skills, innovation, student development, and service capabilities. The development of professional clusters has advanced, yielding richer outcomes in curriculum design, textbook development, practical training, and teaching reforms. Industry-education integration has deepened, with more efficient mechanisms for collaborative teacher training, student cultivation,

and innovation between schools and enterprises. The quality of talent cultivation has markedly improved, evidenced by continuous enhancements in students' skill levels, competition performance, and employment outcomes.

8. Conclusion

Under the guidance of the "Double High Plan" and the high-quality development of vocational undergraduate education, school-based training serves as a foundational and strategic initiative for building a high-caliber "dual-qualified" faculty team. Vocational undergraduate institutions must ground their efforts in institutional realities, align with "Double High" standards, and focus on cultivating dual-qualified educators. They should establish innovative training models featuring precise objectives, practical content, diversified approaches, actionable processes, scientific evaluations, and robust support systems. Through systematic design, institutionalized implementation, industry-education collaboration, and sustained operations, these programs will facilitate teachers' transformation from theoretical experts to dual-qualified professionals, from skill specialists to innovators, and from mere instructors to holistic educators. This approach provides solid faculty support for building top-tier vocational universities and cultivating high-level technical talents, while contributing vocational education expertise to national strategies and regional economic development.

Disclosure statement

The author declares no conflict of interest.

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