Journal of Education and Educational Research
ISSN: 2957-9465 | Vol. 3, No. 2, 2023

Establishing a 'Dual-Teacher' Teaching Team as an Implementation Path for Cultivating High-Quality Technical and Skill Talent within the Visionary Talent Development Framework

Na Ren, Jingyu Zhao

Taizhou Vocational College of Science & Technology, Taizhou, Zhejiang, 318000, China

Abstract: In the construction of "Double High School", the integrated teacher-student development has been the internal requirements for establishing a team of high-level double-position teachers and cultivating talents with high-quality technical skills. In the study, a high-level structured teaching team is built with the individualized training of "one teacher, one case" as the starting point; the integrated teacher-student development is promoted by creating a "golden course", establishing a research interest, determining a social service direction, setting up an innovation team of students; “one teacher, one case” cultivation system and a "golden chain" of integrated teacher-student development are formed, which is characterized by "golden teachers, golden courses and golden students". It's hoped to provide references for higher vocational colleges to cultivate high-level double-position teachers and high-quality talents with technical skills, to provide valuable experience for the construction of high-level "double-position teacher" teams and the cultivation of high-quality technical and skilled talents in vocational colleges nationwide.

Keywords: "One Teacher, One Case"; Integrated Development of Teachers and Students; Training Mechanism; Implementation Path.

1. Analysis of the Connotations of High-quality Technical and Skilled Talent and High-level "Dual-Teacher" Teachers

The "Opinions on Implementing the Plan for the Construction of High-level Vocational Schools and Programs with Chinese Characteristics" (Jiao Zhi Cheng [2019] No. 5), commonly known as the "Dual High Plan," outlines ten major tasks for reform and development, namely "strengthening one, constructing four, and enhancing five." These tasks underscore the human-centered educational spirit and philosophy of vocational education, emphasizing the central importance and practical demands of establishing a high-level "dual-teacher" team.

1.1. Connotations of High-quality Technical and Skilled Talent

The "Dual High Plan" presents a scientific and comprehensive approach to cultivating high-quality technical and skilled talent. Firstly, it places great emphasis on the cultivation of virtuous individuals based on ethics and morality. By prioritizing moral education, students are encouraged to develop socialist core values, dedication, and a spirit of contribution. Cultivating virtuous individuals forms the fundamental basis for nurturing high-quality talent. Therefore, it is essential to establish a new comprehensive education framework that integrates ideological and political courses, combines in-class and extracurricular activities, and connects on-campus and off-campus learning experiences. Secondly, the plan advocates for the integration of theory and practice. Students are encouraged to engage in real-world projects within enterprises, enabling them to experience the practical demands of career development. This involvement aims to enhance students' cognitive abilities, collaboration skills, and innovation capabilities, ultimately promoting intellectual growth, moral development, physical fitness, and aesthetic appreciation. The integration of industry and education and collaboration between schools and enterprises serve as effective vehicles for theory-practice integration, fostering a seamless connection between educational institutions and society [1]. Thirdly, the plan highlights the importance of the spirit of craftsmanship. Students are guided to pursue excellence, respect their professions, and embrace continuous innovation. The "spirit of craftsmanship" embodies the specific requirements of professional attitudes and creative spirits. It represents the self-realization and intrinsic choice of technical and skilled talent, and it is a necessary spirit for China's transition from a manufacturing powerhouse to a manufacturing strong country by 2025. By guiding students to integrate their vocational aspirations with national needs, the "spirit of craftsmanship" becomes a tangible approach for vocational colleges to cultivate virtuous individuals. It facilitates students' understanding of technical skills and the internalization of personal professional ethics through the integration of practical education methods. The transmission of the "spirit of craftsmanship" requires the joint participation of teachers and students in practical activities, collective problem-solving discussions, technical exploration, and resolution [2]. It extends beyond the classroom to extracurricular activities and beyond the school campus to the wider community. Effective communication, exchange, and transmission between teachers and students are crucial. Fourthly, the plan advocates for the simultaneous implementation of education and training. It promotes the effective connection of "dual certificates" and offers training programs for the development of versatile talents. The pilot implementation of the "1+X" certificate system is encouraged,

providing additional certificate training opportunities for students. These efforts should be integrated with teacher, textbook, and teaching method reforms, as well as training programs for innovative teaching teams, to cultivate a pool of talented teachers. Lastly, optimizing the program structure is emphasized. The integration of industry and education, deep collaboration between schools and the local community, and bidirectional mobility of faculty require program offerings that align with regional social development needs while catering to students' individualized demands. Aligning program offerings with the restructuring of the regional industrial structure is essential to better serve local economic development.

1.2. The Connotation of High-level "Dual-qualified" Teachers

The concept of high-level "dual-qualified" teachers encompass two essential elements: "high-level" and "dual-qualified." According to the "Double High Plan," the definition of "high-level" consists of one standard, two elements, and four levels. The standard is defined as the "Four Abilities" standard. The two elements involve the integration of specialization and versatility, as well as a rational structure. The four levels include being authoritative in the industry, internationally influential as a leading professional, serving as backbone teachers capable of improving company processes and solving technical challenges, and possessing extraordinary skills and expertise as technical masters. These levels represent individuals with high moral character, excellent skills, and exceptional teaching abilities.

On the other hand, "dual-qualified" teachers refer to educators who possess both theoretical knowledge and practical teaching abilities. This provides a clear direction for the establishment of a high-level "dual-qualified" teaching workforce.

2. The Cultivation of High-quality Technical and Skilled Talents has Posed New Requirements for the Construction of a High-level "Dual-qualified" Teaching Faculty

2.1. The Development of a High-Level "Dual-Qualified" Teaching Faculty is Required for the Formulation of Scientifically and Reasonably Designed Talent Cultivation Programs

The development of a highly competent "dual-qualified" teaching faculty is of paramount importance in ensuring the scientific and well-structured formulation of professional talent cultivation programs. These programs serve as the comprehensive blueprint for talent development and are crucial for establishing standardized processes. They not only provide a significant guarantee for nurturing high-quality technical and skilled talent but also play a key role in elevating the overall educational standards of vocational colleges. in accordance with the guidance provided by the Ministry of Education, the formulation of professional talent cultivation programs necessitates the establishment of a professional development team comprising industry experts, teachers, and representatives of graduates. The collaborative efforts of a high-level "dual-qualified" teaching faculty are thus indispensable in ensuring the scientific and rational nature of talent cultivation program development.

2.2. The Key Task for Deepening the "Three-Dimensional Education" is the Construction of a High-level "Dual-Qualified" Teaching Faculty

The implementation of "Three-Dimensional Education" is an inherent requirement for enhancing the quality of talent cultivation. The key to deepening the comprehensive reform of "Three-Dimensional Education" lies in achieving comprehensive education for all individuals. To accomplish this goal, it is crucial to strengthen the construction of the teaching faculty, enhance awareness and responsibility in education, and emphasize the pivotal role of teachers as the main agents [3]. Vocational colleges should consciously undertake the task of nurturing comprehensive professional and technical talents for positions in areas such as socialist modern production, transportation, and services. The cultivation of ethics and character is a fundamental element in developing high-quality talent, and teachers play a central role in this regard. Therefore, the comprehensive deepening of the "Three-Dimensional Education" reform should be integrated with the construction of teachers' ethics and professional conduct. Teachers should internalize the principles of "Three-Dimensional Education" into talent cultivation, student management, social services, and other aspects of their work. They should consistently view education as an essential component of talent development, ensuring the comprehensive and effective advancement of "Three-Dimensional Education."

2.3. The Core Driving Force for Advancing the "Three-Education Reform" is the Construction of a High-Level "Dual-Teacher" Teaching Faculty

"Teachers," "teaching materials," and "teaching methods" play integral roles throughout the entire process of vocational education and talent development [4]. The implementation of the "Three-Education Reform" is crucial for ensuring the quality of talent development aligns with socioeconomic progress and serves as a key breakthrough in cultivating high-quality technical and skilled personnel. Teachers are at the forefront of educational reform and serve as the driving force behind the "Three-Education Reform" as the core element. to achieve the objectives of the reform, it is necessary to comprehensively enhance teachers' theoretical and practical teaching abilities, as well as their professional competence [5]. Active innovation of classroom teaching models, such as the use of multiple teachers in one class and personalized instruction, is an effective approach to improve the quality of talent development. Shifting the focus from what the teacher teaches to what the students learn and transitioning from passive learning to active learning for students are essential in this process. In order to successfully implement the "Three-Education Reform" and ensure the effectiveness of teaching, it is crucial to build a high-level "dual-teacher" teaching faculty. This entails cultivating teachers who possess the necessary expertise, skills, and capabilities to deliver quality education and promote the comprehensive development of students.

2.4. To Effectively Promote "Industry-Education Integration," It is Necessary to Strengthen the Construction of a High-Level "Dual-Teacher" Teaching Faculty

The deepening of industry-education integration and school-industry collaboration constitutes a crucial measure to enhance the quality of talent development and an effective approach to constructing a high-level "dual-teacher" teaching faculty. Industry-education integration and school-industry collaboration serve as a shared focus for nurturing high-quality technical and skilled talent and establishing a high-level dual-teacher team. They foster mutual support between vocational education and regional industries and economic development, enabling deep and reciprocal cooperation that benefits both parties [6]. This collaborative approach facilitates the integration of teachers, students, and industry professionals in teaching, research, and enterprise product development activities, fostering a mutually beneficial and deeply intertwined relationship. Consequently, a high-level "dual-teacher" teaching faculty becomes a robust guarantee for advancing industry-education integration.

3. The Implementation Path of the "Dual-teacher" Model in Cultivating High-quality Technical and Skilled Talents from the Perspective of Talent Development

Firstly, the school conducts thorough industry research to determine the development direction of its secondary colleges, aligning them with the vocational education requirements set by the central, provincial, and municipal governments. Secondly, the school introduces the "One Teacher, One Plan" action plan for teacher development (2019-2023), led by the Teacher Development Center. This plan formulates teacher development strategies, supervision mechanisms, and reward systems based on the needs and suggestions of teachers, teaching and research offices, and secondary colleges. The secondary colleges then formulate professional plans and faculty development goals in accordance with their own objectives, which undergo a review by the Personnel Department or the Academic Committee and subsequent approval at relevant school-level meetings. Program directors, acting as coordinators and facilitators, organize teachers within their respective majors to create personalized "One Teacher, One Plan" training programs for a five-year period. These programs consider teachers' professional knowledge, interests, specialties, and career plans. By adopting this implementation path, the construction of the "dual-teacher" team shifts from "unidirectional training" to "bidirectional collaborative training," establishing a sense of shared destiny among teachers' personal development, student talent cultivation, and professional growth.

The development of "dual-teacher" teachers primarily focuses on three aspects: teaching reform, social service, and applied research. Within the five-year training cycle, the proposal includes the "Four Ones" project, aiming to create a flagship course, identify a scientific research direction, determine a social service direction, and establish and guide a student innovation team. Specifically, it includes the following four aspects:

(1) Create a "flagship course".

The creation of a "flagship course" involves each teacher within the professional cluster developing a distinguished course based on the professional development plan and curriculum system construction requirements. This goal is expected to be achieved within the designated training period. The classroom serves as the primary arena for cultivating high-quality technical and skilled talents, representing the crucial "last mile" in talent development. Bridging this last mile is key to the construction of "flagship courses" in vocational colleges. To create a flagship course, we must have a "masterful teacher" who connects with the flagship course and, ultimately, with the excellent students, forming a "golden chain" for cultivating outstanding students. Developing a flagship course requires teachers to possess exceptional abilities in curriculum and resource development, instructional design, practical skills, modern information application, and the integration of new technologies, processes, and methods into teaching. It involves teachers internalizing their knowledge, skills, and qualities and engaging in deep-level processing of knowledge. Teachers need to shift their focus from "what I can teach" to "what students expect," creating a classroom culture that is democratic, equal, and flexible. This environment enables students to actively participate, engage in deep learning, ignite their minds through active reflection [7], and foster a sense of ownership in their learning process. This approach highlights the core function of classroom teaching. The rich connotation of a flagship course places higher demands on both teachers and students, urging teachers to enhance their self-development capabilities, improve their overall quality, and elevate the quality of classroom teaching. Therefore, the construction of flagship courses holds significant value and importance for both teachers and students, serving as an effective pathway toward building a high-level "dual-teacher" team.

(2) Specify a scientific research direction.

The integration of industry, academia, and research is an inherent requirement and an inevitable trend in the development of vocational education. It is crucial for deepening the integration of industry and education, fostering school-enterprise cooperation, and cultivating technical and skilled talents. In this context, scientific research plays a pivotal role as a breakthrough for industry and education integration and school-enterprise cooperation. Vocational colleges should proactively integrate themselves into regional economic development and actively engage in scientific research to address the technological challenges faced by small and medium-sized enterprises, such as technology research and product upgrades. By undertaking high-quality research projects, vocational colleges can lead the advanced development of enterprises, attract the participation of small and medium-sized enterprises in vocational education, and achieve a profound integration of education and industry. the active involvement of university students in teachers' scientific research projects contributes significantly to the cultivation of high-quality technical and skilled talents. Student participation in scientific research creates an intellectual synergy between teachers and students, fostering a process of knowledge exchange. Moreover, it serves as an effective measure to enhance the comprehensive qualities and capabilities of vocational teachers. This engagement plays a vital role in the development of high-level dual-teacher teams within vocational colleges.

(3) Identifying a social service direction.

Social service is an essential extension of a school's

educational and research activities, involving collaborative efforts between teachers and industry professionals to provide services such as technical development, product upgrading, and employee skill training for enterprises. Through social service, teachers are able to incorporate the core competencies of industry positions and the latest technical standards into professional talent development programs, thus serving as a highly effective approach to student cultivation. Moreover, social service plays a crucial role in promoting the integration of industry and education and deepening school-enterprise cooperation. The process of determining a social service direction entails teachers identifying a specific focus based on their professional expertise and industry development. This enables them to lead students in engaging in social service activities within enterprises. By doing so, students gain practical skills in a real-world business environment, bridging the gap between theory and practice while enhancing their professional spirit. Furthermore, determining a social service direction serves as a valuable source for teachers' scientific research topics. It fosters a closer and more effective collaboration between schools and enterprises, providing an invaluable platform to enhance teachers' professional capabilities and improve the quality of student talent development.

(4) Establishing and guiding a student innovation team.

Guiding a student innovation team is a crucial measure to strengthen and expand the high-level "dual-teacher" team and the chain of high-quality technical talent cultivation. It involves teachers providing guidance to a diverse team of students from different grades and majors who share common interests. These teams actively participate in projects related to scientific and technological innovation and entrepreneurship among university students. The aim of forming and guiding a student innovation team is to cultivate virtues, enhance teaching and learning, and foster innovation. By engaging in these projects, student teams are encouraged to develop practical skills in innovation and entrepreneurship, nurture their entrepreneurial spirit, and enhance their overall competence in these areas. Under the guidance of teachers, students transition from passive learners to active participants in their own learning and skill development. Through activities such as brainstorming and thematic presentations, students generate novel technologies, methods, and experiences, cultivating a habit of critical thinking. Furthermore, the interaction between teachers and students during the guidance of student innovation teams fosters intellectual exchanges, leading to mutual growth and advancement for both parties. This collaboration promotes the sustainable development of teachers and students alike.

4. The Achievements in the Construction of "Dual-teacher" Teams

After four years of development, significant achievements have been made in the construction of "dual-teacher" teams compared to 2018. These achievements can be observed in the areas of quality courses, social services, research capabilities, and awards in student vocational skill competitions. The progress has shifted from quantitative growth to qualitative improvement. for example, the number of granted invention patents has increased from 2 in 2018 to 13 in 2022, consistently ranking among the top 200 national vocational colleges in terms of granted invention patents over the past two years. The revenue from technical services has grown from 50,600 RMB in 2018 to 15 million RMB in 2022. Moreover, the number of published core papers has risen from 10 in 2018 to 49 in 2022.Landmark achievements have also been made, including one first prize in the National Teaching Achievement Awards, one first and second prize in the National Teaching Skills Competition, four second prizes in national-level student competitions, two textbooks included in the National Planning Textbooks for Vocational Education in the 14th Five-Year Plan, two research projects funded by the Chinese Higher Education Society in 2022, two provincial fund projects, and one integrated teaching innovation team for secondary and higher vocational education in Zhejiang Province. Furthermore, the "dual-teacher" teams have received numerous honors and accolades, including two special awards in the National Scholarship Program, one Zhejiang Craftsman, one municipal-level outstanding teaching teacher, one municipal high-end talent, four municipal technical experts, two talents in the municipal special support program, one high-level talent in the municipal education field, two high-level talents in the municipal social services field, one practical talent in high demand, one municipal-level craftsman, and six individuals recognized for outstanding achievements in the field of education. These accomplishments reflect remarkable progress and success in the development of "dual-teacher" teams and demonstrate the commitment and dedication of the vocational education institution in promoting quality education and talent cultivation.

References

[1] Zhu, C., & Liu, X. (2015). Dilemmas and Pathways in Cultivating Technical and Skillful Talents in Higher Vocational Education under the Background of Industry-Education Integration. Vocational and Technical Education, 2015(34), 41-45.

[2] Li, W., & Wu, W. (2020). Connotation, Generation, and Construction of Moral Education in Higher Vocational Colleges under the Context of Genre Education. Vocational and Education, 2020(9), 72-77.

[3] Cao, R. (2020). Key Issues and Implementation Mechanism of Deepening Comprehensive Reform of "Three-All Education" in Higher Education. Ideological and Theoretical Education, 2020(12), 96-101.

[4] Wang, Z. (2019). Deepening Reform, Exploring Innovation, and Cultivating Technical and Skilled Talents for Comprehensive Development in the New Era. Chinese Vocational and Technical Education, 2019(7), 108-110.

[5] Wang, C., & Long, Y. (2019). Deepening the "Three-Education" Reform to Improve the Quality of Talent Training in Vocational Colleges. Chinese Vocational and Technical Education, 2019(17), 26-29.

[6] Chen, N., Zhou, C., & Wu, Z. (2014). The Connotation and Implementation Approaches of Industry-Education Integration. Chinese University Science and Technology, 2014(8), 40-42.

[7] Lv, L. (2020). University "Golden Courses" in the Perspective of Deep Learning. Higher Education Management, 2020(1), 40-51.