

Building a Hierarchical and Classified “Two-Way” Training System and Cultivating a Dual-Teacher Innovative Teaching Team Through School-Enterprise Cooperation

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Abstract: Teachers are the first resources for the development of schools and actively exploring the construction of double professional teams in vocational education in the new era. It is a decisive factor for the reform and development of higher vocational education to further carry out the fundamental task of moral cultivation and forge the party, so that the people are satisfied with high-quality professional double-teacher innovative teachers and serve the “double high” construction better. Given the difficulty in recruiting and training full-time and part-time teachers, the information database of full-time and part-time teachers is constructed and the double-qualified teacher team is cultivated jointly by schools and enterprises. According to the different abilities of teachers and the needs of individual development, the hierarchical and classified “two-way” training mechanism is implemented to improve the education and serviceability of the double-teacher team. Given the tedious work of the school, the double teacher training platform is built and the key work characteristic is paid close attention, to improve professional serviceability. It has built a team of high-quality double-qualified teachers with noble ethics, exquisite professional skills, reasonable structure and vigour, which provides solid support for the high-quality development of high-level professional groups in the school.

Keywords: University-enterprise co-education; “Double high” construction; “Two-way” training mechanism of hierarchical classification

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1. Implementation background

Notice of the General Office of the Ministry of Education on Further Strengthening the Construction of National Vocational College Teachers’ Teaching Innovation Team (Letter of Teachers’ Office (2022) No. 21) claims that innovation team building is a strong starting point and an important measure to accelerate the high-quality development of vocational education and “double-qualified” teachers ^[1]. It should follow the principles of “combining government overall planning with hierarchical creation, combining school independent

construction with interschool cooperative development, combining personal growth with team development and combining team building with teaching innovation”. Focusing on demonstration and guidance, building excellence and strengthening, collaborative innovation and promoting reform, taking into account local economic and social development, industrial characteristics and backbone major of the school, making overall planning and construction layout of provincial and university-level innovation teams according to local conditions, coordinating development and networking integration with national innovation teams and striving to build several innovation teams that are both virtuous and technical, innovative and collaborative and reasonably structured. With this, a “double professional” team construction paradigm can be formed and can provide strong teacher support for comprehensively improving the training quality of composite technical and skill talents ^[1].

The Ministry of Education and other four departments on the “Measures for the Management of part-time teachers in Vocational schools” (Teacher (2023) No. 9) stated that vocational schools should adhere to the principle of full-time teachers as the main, part-time teachers as the supplement, hiring part-time teachers should closely align with the trend of industrial upgrading and technological change, to meet the needs of professional development and technical skills personnel training of the school ^[2]. The proportion of part-time teachers in the total number of full-time and part-time teachers in vocational schools generally does not exceed 30% ^[3]. In addition, the Ministry of Education on the “National Vocational Education Reform Implementation Plan” (Guofa [2019] No. 4) also stated that vocational colleges from the industry and enterprise frontline part-time teachers accounted for a certain proportion with substantive professional teaching tasks and their professional teaching tasks generally not less than 20% of the total hours of professional courses ^[4]. It is not difficult to see from the national policy documents that the Ministry of Education has put forward clear requirements for the composition and teaching situation of teachers in vocational colleges ^[5].

Under the background of “double-high” construction, the construction of vocational education teachers’ teaching innovation team plays an important and decisive role in the quality project construction of the Ministry of Education, improving the teaching quality and strengthening the construction of key majors. It is the driving force to strengthen the professional quality of teachers, promote teaching cooperation, innovate the construction of key majors and improve the quality of students’ training. As a large state-owned enterprise running a school, the school has the natural advantages and conditions of school-enterprise cooperation and there is no problem in the proportion of full-time and part-time teachers. However, whether we can give full play to the role of full-time and part-time teachers and build a harmonious and resonant structured teacher team is a major problem plaguing the development of vocational college teachers ^[6]. At present, our school has many teachers from enterprises, but there are also a large number of new graduates, they lack enterprise work experience and engineering application experience and do not understand the needs and standards of the enterprise site. Although the enterprise and teacher have rich on-site work experience and operational skills, the lack of systematic teaching experience and teaching methods cannot be a good knowledge transfer and transformation. At the same time, because of the difference in enterprise and teacher work focus, time and other problems, it will also lead to poor teaching effects ^[7]. In addition, due to the different abilities of full-time teachers, for example, how to conduct personalized training and appointments, these are the practical problems faced by most vocational colleges in the management and teaching of full-time and part-time teachers.

2. Specific measures

2.1. Digital empowerment builds a database of professional and part-time teachers and cultivates a double-qualified teacher team

The school is organized by Chongqing Communications Development and Investment Group Co., Ltd., a large

state-owned key enterprise and has the natural advantage of school-enterprise cooperation in running schools. The Group has four municipal state-owned backbone enterprises, namely Bus Group, Rail Group, Hub Group and Railway Group, as well as more than 80 wholly-owned, holding and equity enterprises such as vocational college and pass card companies, with more than 50,000 employees. Based on the Group's talent information database, the Group has established a university-enterprise integrated professional and part-time teacher talent database given the difficulties in recruiting and training full-time and part-time teachers. To update the information on full-time and part-time teachers in real-time, the school selects and recruits professional teachers based on the database and carries out targeted training of "co-education, co-management and sharing" according to the specific situation of full-time and part-time teachers. In the past three years, 10 people have been selected to participate in the "double thousand double teachers" talent exchange in Chongqing, more than 60 people have been trained by enterprises and have carried out research and training for more than 30 times. Through digital empowerment and precise cultivation, a normal exchange mechanism of "two-way exchange and cross-employment" has been realized for school-enterprise talents.

2.2. Build a stratified and classified "two-way" training system to improve the education and service capabilities of the double-master team

According to the different teacher abilities and individual development needs, together with the structural training needs and centering on the job responsibilities and development, professional leaders, backbone teachers, young teachers and part-time teachers are trained in different layers from four dimensions. According to different teachers' individual abilities and individual development needs, a classified training mechanism is implemented^[8]. It includes the following:

- (1) The training of teaching-type teachers with teaching ability competition.
- (2) Research teacher training with teaching and research projects.
- (3) The training of skilled teachers with technical reform and training room construction.
- (4) The training of competition-type teachers with skill competition.

Each type of teacher not only works independently but also collaborates and can convert into other types according to their own development needs or to improve the comprehensive ability of teachers^[9]. At the same time, the system can establish a "double-qualified" teacher training mechanism oriented by "teaching and research ability level and engineering practical skills", to improve the career development channels and mutual recognition mechanism of rank certificates for highly skilled and professional technical talents in the field of engineering technology. It can also provide a platform and support for the career development of "double professional" teachers in the two paths of "Teacher series titles" and "Engineering and Technical series titles (professional qualifications)."

2.3. Build a double teacher training platform, pay close attention to key and characteristic work and enhance professional serviceability

Because of the tedious work of school and special construction, we take the teaching master studio, skill master studio and demonstrate teacher enterprise practice mobile station as the basic platform for teacher development and strive to build a composite teacher team with excellent teaching ability, post skill level and technical research and development ability around the type characteristics of higher vocational colleges^[10]. By paying close attention to key and characteristic work such as teaching ability competition, skill competition, innovation and entrepreneurship competition, school-enterprise joint skill competition, etc., teachers' service professional construction ability is improved. In addition, combined with the actual situation of the profession, the platform docking the needs of industry enterprises and actively carries out electrical skills training, identification, school

railway 2+1 training, promoted driver training, school-enterprise cooperation technical reform and other service projects, to enhance the social influence and service of the professional teaching team.

2.4. Build a school-enterprise cooperation community to promote the integration of production and education

The community built can deepen the integration of production and education and optimize the external governance structure of the team. From the perspective of organizational relationship, the current relationship between schools and enterprises is a kind of inter-organizational market relationship, which is restricted by limited rationality and uncertainty. The complexity of the market relationship is in a state of loose connection ^[11]. In terms of the depth of school-enterprise cooperation, measures can be taken to promote the school-enterprise relationship, bring back the close relationship within the organization and build a school-enterprise community with a shared future, so that the teaching innovation team of teachers can fully absorb the complexity of enterprise organizations. Besides, the team will also keep pace with the changes in the field of work by carrying out school-enterprise education with mixed ownership, supporting enterprises integrating industry and education, and building industrial colleges and teaching factories. In terms of the breadth of school-enterprise cooperation, a multilateral vocational education group (alliance) with the participation of government, bank, enterprise and school can be set up to enable members to share resources, exchange information, cooperate, establish a solid connection with each other and reduce the uncertainty of the external environment of the team to a certain extent ^[12]. Moreover, the alliance itself is a community. The standards, systems and models of the member units will form an “institutional market” at the level of the community so that the member units can absorb and influence each other and finally obtain collective correction and common improvement.

To build a school-enterprise cooperation community, the system promotes the integration and complementarity of full-time teachers and finally achieves substantive results in dual education. As there are sufficient part-time teachers in the team, the presence and participation of full-time teachers can promote team identity and task interdependence, focusing on the integration, transfer and innovation of knowledge ^[13]. Full-time teachers should build a learning community, jointly formulate talent training plans, develop curriculum resources, implement classroom teaching processes, project applications, etc. The teachers can complete the task jointly through task sharing and role complementation, so that a mutually dependent relationship among full-time teachers can be created.

As a teacher teaching innovation team, first of all, they should establish a common vision, gather the value consensus of “student-centered” and establish a common goal of pursuing excellence. Secondly, to realize the self-transcendence of the members, teachers must cultivate the consciousness of continuous learning and continuous reflection if they want to continuously improve their teaching ability ^[14]. The team should continue to provide support for members to improve their teaching ability by organizing and carrying out regular learning, skill training, post-training, academic activities, etc.. Finally, to carry out collective learning, the team should give full play to the role of teaching and research activities, so that members can build consensus and achieve common progress in regular exchanges and discussions and joint learning ^[15].

3. The main results

With the goal of building a national teacher teaching innovation team that meets the needs of vocational education, we have built a hierarchical and classified “two-way” teacher training system based on the school-enterprise cooperation platform and built a high-level teacher team with a reasonable structure and a combination of professional and professional skills ^[16]. Following the implementation of the two-way flow

mechanism of school and enterprise personnel, the team encourages teachers to invite experts such as national model workers, national technical experts and locomotive medal winners into the classroom, to practice spiritual inheritance and lead teachers to grow up. The skill level of teachers has been continuously improved, the reform of the three education sectors has been deepened and the quality of personnel training has been comprehensively improved^[17].

During the period of double high school construction, the school created and won a municipal Huang Danian teacher team, organized a municipal master workshop for ideological and political courses and built a municipal vocational education demonstration teacher enterprise practice mobile studio. 3 teachers were selected as members of the National Railway Industry Steering Committee and won a national technical expert. The teachers have won 17 provincial and ministerial skills competition awards (including 5 national awards), 4 national planning textbooks, 1 municipal professional teaching resource library, 1 municipal ideological and political course, 3 online quality courses, 1 municipal certification course, 2 typical cases of the construction of municipal classroom revolution and the third prize of Chongqing Teaching Achievement Award. They also guided students to participate in various skills competitions, “Internet +” college student innovation and entrepreneurship competition and finally won a total of 53 provincial and ministerial awards (including 20 national awards).

4. Experience summary

The success of the construction of dual-teacher innovative teaching team is inseparable from the top-level design of the construction of the school’s teacher team. The key lies in how the secondary colleges and professional teaching teams plan the training paths of full-time and part-time teachers, as well as providing teachers the platform and policy support to exert their abilities. There are many aspects involved in the construction of the dual-teacher innovative teaching team, which is not only related to external driving factors but also has a great relationship with the development of teachers’ personal drive. In the next step, the team will further explore the development of teachers’ internal drive and external incentive mechanism, as well as how to give full play to the limits of team members’ individual abilities and cooperate in the division of labor to form a team workforce. With this, the team strives to build a national teacher teaching innovation team.

Disclosure statement

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