Practical Study of Trinity and "Double-qualified" Teachers Team Construction in Higher Vocational Colleges

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Abstract. Vocational education is a special type of education that pays attention to the cultivation of skilled personnel. Teachers in vocational colleges should not only have general teaching ability, but also have practical ability of enterprise post projects. The construction of “double-qualified” teachers has been paid attention to, but no very effective solution has yet been found. This paper analyses the definition of “double-qualified” teachers and the importance of their team construction. Combining with the practice of implementing the “three-in-one” or trinity and “double-qualified” teachers’ team construction in Hunan Modern Logistics College, this paper makes a systematic analysis and overall design from the aspects of construction ideas, construction standards, construction results and final objectives. Through the training mode of trinity and “double-qualified” teachers, the paper summarizes the successful experience in order to provide reference for the construction of “double-qualified” teachers in higher vocational colleges.

Introduction

Education is the foundation of a century’s plan, and teachers are the root of education [1]. Building a strong educational country is the basic project for the great rejuvenation of the Chinese nation, education must be given priority, and most attention must be paid to the construction of teaching staff. The “extremely important” strategic position of teacher team construction is being implemented in depth, and the construction and reform of teacher team ushered in a new period of major development opportunities [2]. Only in this way can we train more excellent talents with comprehensive quality and innovative ability, including practical talents, for the construction and development of our country [3,4].

As a higher vocational college, facing the requirements of the times, society and economy for talents [5], Hunan Modern Logistics College has defined the guiding ideology of the joint development of education and industry, and taken various measures and devoted itself to the construction of excellent “double-qualified” teachers with industry characteristics, and achieved outstanding results [6,7].

The so-called “double-qualified” teachers are the unique types of teachers in higher vocational colleges [8]. It is also called “dual-title type” (teachers need to acquire another title in addition to a series of titles) or “dual-quality type” (teachers should possess both the quality of theoretical teaching and the quality of practical guiding) [9]. “Double certificates”, “double abilities” or “double integration” are also explanations for such kind of teachers [10]. The cultivation of “double-qualified” teachers are accomplished based on the demand of practical talents cultivation in higher vocational colleges [11].

The Construction Objectives and Practices of "Double-qualified" Teachers

Target of Teachers’ Team Construction

As shown in Fig. 1, the college has carried out the construction idea of “Grandmaster-led, Famous Teachers-guided and Double-qualified Teachers give lecture”, set the construction standards of “five-level” and “four-type” teachers, and created a “three-in-one” or trinity and
“two-in-one” of double-qualified teaching team. Trinity refers to the combination of specialized and concurrent education, college-enterprise cooperation, and so on. In order to achieve the ultimate goal of “double-high base” construction, the integration of industry and education is to build high-end skilled personnel training plateau in logistics industry and high-level teachers training plateau in logistics industry.

Figure 1. Construction of Trinity and "double-qualified" Teachers Team.

Through the construction of “double-qualified” teachers’ team, outstanding mentors of the college is capable to standout, and preside over the formulation of national teaching standards for logistics specialties such as logistics information technology, logistics financial management, and participate in the research and development of logistics industry standards and 1+X certificate (double-qualified teachers) pilot project standards, so as to develop teachers’ competence [12]. Promote the project and push on the reform of the three education systems (teacher reform, textbook reform and teaching method reform) [13, 14]. Specific objectives of the project include: 82.7% of teachers go abroad for further study, 90.5% of teachers have master’s degree, 92.6% of the team are double-qualified teachers, which can effectively promote technological research and innovation in logistics industry, and strive to become the top example of the nation and get the demonstration of innovation and development in personnel training, scientific research, social service level and 1+X project, so as to cultivate excellent talents [15, 16].
Specific Measures for Teachers’ Team Construction

The college has taken various measures to promote the construction of “double-qualified” teachers. Specific experiences and practices are described as follows:

**Improving the Rapid Growth of the Team.** In recent years, through a series of measures, the college has effectively promoted the construction of “double-qualified” teachers. A cubic education system called the entire personnel, the whole process, and the full range cultivation is established, and the Plan of Strengthening Morality (2018-2020) has been promulgated, which takes moral education as the foundation, ideals and beliefs as the core, and socialist core values as the guide to build a perfect education system.

It is vital to create a characteristic campus culture, carry out the education of people, innovate the mode of ideological and political work, effectively improve the effectiveness of ideological work, and strengthen the organizational leadership and the responsibility.

It is the duty of the college to fully implement the strategy of “enhancing college by talents” and pay attention to the training of “double-qualified” teachers. In order to adapt to the college’s professional characteristics and the target orientation of training high-quality and high-skilled talents, vigorously cultivate the teaching staff with applied abilities and qualities, conscientiously strengthen the practical training of teachers, and standardize the management and assessment of teachers’ participation in practical training, the “Double-Teacher” Management Measures and “Teachers’ Participation” have been promulgated. Provisional Measures for Management of Practical Exercise and Code of Conduct for Teachers’ Morality and Style should be adopted to improve the professional skills, professional accomplishments and teaching and research level of teachers.

The College has formulated the “Pilot measures for the project of famous teachers”, “Methods for the selection and training of young key teachers”, “Selection and management of professional leaders”, “Plans for the introduction of talents in Hunan Modern Logistics College (2016-2020)”, “Management of advanced training”, and “Implementation of the training plan for famous teachers” successively. Through the selection and management of famous teachers, professional leaders, young backbone teachers and part-time external teachers, a series of documents have implemented the construction of “famous teachers + professional leaders + young backbone teachers + skilled craftsmen” teacher echelon, and built a team of teachers with reasonable structure, excellent quality, vigor and adaptability to the needs of professional development. The high-level “double-qualified” teachers with innovative ability are evaluated and managed according to the document systems of “Performance Assessment Method”, “Scientific Research Assessment Method” and “Reward Measures for Teachers and Staff”. Special funds have been set up for talent introduction, training and teaching and scientific research awards. Through sound and innovative mechanism construction, the faculty of the college has got a rapid growth; the structure of double-qualified teachers has been further rationalized and increased substantially.

**Guiding Teachers’ Classified Development.** For the sake of strengthening the construction of “double-qualified” teachers’ team, the school started the construction of famous teachers’ studios in 2016. After individual application, department recommendation and evaluation by college professors’ committee, the college has established 21 famous teachers’ studios, which are strictly in accordance with the “Famous Teachers’ Studio” Construction Trial Measures, the “Famous Teachers Project” divides famous teachers into three categories: famous teachers in teaching, famous teachers in scientific research and famous teachers in skills. Teachers are encouraged to locate accurately and classify to strive for famous teachers. In view of the various categories of famous teachers, the corresponding rules have been promulgated. The college organizes an evaluation once a year. Those who meet the basic and specific conditions can apply for the honor of famous teachers. Each studio has more than five key members. Teachers can achieve self-learning and growth under the professional guidance of famous teachers. Through the construction of famous teachers’ studios, a large number of backbone teachers have been trained, and a high-quality “double-qualified” team of teachers has been created. “Famous Teachers Project” relies on many professional teaching and research groups, training rooms and school-enterprise cooperation
platforms, and establishes a number of famous teachers’ studios with different characteristics. It actively carries out curriculum reform; skills contest, teaching and research, school-enterprise project construction and social practice activities, leads and drives the classified development of teachers, and effectively promotes the development of school teachers [17].

**Promoting Joint Training of Schools and Enterprises.** The college has launched a number of projects in batches, including “Three 100 Project”, “Four 30 Training Plans in 2018” and “Five 20 Action Plans in 2019”, shown in Table 1. Moreover, the school has strengthened its professional leaders and youth backbone through Blue Project, BSK Teacher Training Plan in Germany and ADB Loan Teacher Training Project to improve the training and training of teachers.

Table 1. Some Typical Projects of “Double-Professional” Teacher Training.

<table>
<thead>
<tr>
<th>Three “100” Projects</th>
<th>Four “30” Programs</th>
<th>Five “20” Plans</th>
</tr>
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<tbody>
<tr>
<td>100 Teaching Backbone to Practice In Enterprise</td>
<td>30 Teaching Backbone to Get Further Study in First-Class University</td>
<td>20 Ideological and Political Work Teachers</td>
</tr>
<tr>
<td>100 Technical Backbones Enter the Classroom</td>
<td>30 Key Teachers Go Abroad For Further Training</td>
<td>20 Teaching Managers</td>
</tr>
<tr>
<td>100 Teachers Go Abroad for Further Study</td>
<td>30 Young Teachers get On-the-job Exercise in Enterprises</td>
<td>20 Administrators Responsible for on-the-job Training</td>
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<tr>
<td></td>
<td>30 New Teachers’ Practice in Operating Post of Enterprises</td>
<td>20 Young Teachers Go To Enterprises to Get Social Practice</td>
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<tr>
<td></td>
<td></td>
<td>20 Professional Teachers Conduct Professional Investigation in Well-Known Logistics Enterprises</td>
</tr>
</tbody>
</table>

By joint training with first-class universities and enterprises, a perfect teacher training system has been established. More than 90% of full-time teachers in schools have participated in practical exercises in enterprises. More than 90% of part-time teachers come from technical backbone of industrial enterprises. 82.7% of full-time teachers go to more than 10 countries and regions such as the United States, Germany and the United Kingdom for further training. The level of school skills has been continuously improved, the quality of double-qualified teachers has been significantly improved, and the proportion of internationalized teachers has risen substantially.

**Pushing on Innovation of Integration of Industry and Education.** The school closely joins the industrial chain, actively promotes the platform construction, perfects the school-enterprise cooperation mechanism and the training base construction mode, and builds the production-education integration platform system on the base of “1-3-6-6”, which refers to “1” provincial demonstration vocational education group, “3” provincial productive practice training bases, “6” technological innovation research and development centers and “6” industrial colleges. Relying on this platform system, it is available to steadily promote the integration with teacher training bases, promote the implementation of the “double employment and double hanging” system, seamlessly dock with enterprises, and realize the mutual employment of key teachers and high-skilled talents in schools.

It is necessary to strengthen the appointment and management of part-time teachers from enterprises, enrich the resource library of part-time teachers and improve the structure of “double-qualified teachers”. It is also important to innovate the mechanism of part-time teachers’ appointment and actively explore new ways of co-cultivating the "double teachers" team through college-enterprise cooperation. Establish “Team Workstation for Professional Teachers” in enterprises to build a stable training base for teachers’ professional competence. Theoretically, teachers should take turns to enter the workstation to study and work, provide technical services, technical training for enterprises, and enhance practical and social service capabilities.
Assisting Industrial Transformation and Upgrading. Oriented to industrial development, the college has set up logistics information technology research and development team and logistics management consulting group, participated in government decision-making and industry activities, undertook information construction projects of modern comprehensive logistics park and intelligent business logistics port in provinces and cities, and completed a number of logistics and urban development planning.

Teachers also actively participated in the research and development of professional skills testing standards and item bank, the construction of public information platform project, the development of logistics information cooperative operation technology project, the transfer and upgrading of professional technology, the design and preparation of feasible scheme of logistics park, and carried out in-depth cooperation and development with local governments, industrial parks and enterprises to build a first-class characteristic integration platform of industry and education. Some technical consultation, technology research and development, park planning and other industry-university-research cooperation are carried out with dozens of large and medium-sized enterprises.

The college participated in precise poverty alleviation activities in poverty-stricken areas, focusing on education, logistics and e-commerce, carrying out multi-level, multi-directional and multi-form docking cooperation and poverty alleviation work. In 2017, the case of cooperation between the school and Chengbu County, Strengthening School-Land Cooperation and Promoting Precision Poverty Alleviation, was selected as the top 50 cases of social service and Precision Poverty Alleviation in the National Joint Association of Headmasters of Higher Vocational and Technical Colleges. The poverty alleviation project has been highly affirmed by the state and Hunan Province.

Create a Brand to Lead the Development of Logistics Industry. Since 2016, the school has made great efforts to build professional characteristics and school brand by cultivating “famous professions, famous teachers and famous students”. The project of “Golden Key” promotes the cultivation of famous students; the studio of famous teachers classified by teaching, scientific research and skills accurately trains famous teachers; and the three school-level majors of logistics management, Internet of Things application technology and logistics financial management are named as famous majors, which promotes and radiates the overall development of various majors in the school.

Focusing on “cultivating the professional quality of teachers and students”, the college insists on organizing competition to promote teaching, research and learning, so as to make a rapid progress of the school. Both projects of “Application of Internet of Things Technology” and “Design and Implementation of Intelligent Logistics Operational Program” won the first prize in the National Vocational College Skills Competition, and gained the first and second prizes in the 7th Provincial College Counselors Competition.

The Outstanding Effect of the Construction of the Double-qualified Teachers’ Team

Talent Highland of High Skilled Personnel in Logistics Industry

The improvement of the quality of teachers, including double-qualified ones in schools helps to raise the quality of talent cultivation. There are great breakthroughs in all kinds of competitions. In 2018, 103 prizes were awarded in skills competitions, of which 39 were awarded to teachers and 64 were students. In the academic year 2017-2018, students participated in various innovative, creative and entrepreneurial planning competitions and won fifteen provincial awards. The qualified rate of graduation design and student skill spot check is 100%, ranking the top ten in the province for three consecutive years. The craftsmanship spirit of students is constantly highlighted, and their professional ability is significantly enhanced.

High-Level Teacher Training in Logistics Industry

Through the construction of “double-qualified” teachers, the teaching ability, scientific research
ability and service ability of all staff have been improved, a number of high-level teachers and teams have emerged, lots of national and provincial teacher training bases have been built, and young backbone teachers in national industries, provincial teaching teams in Hunan Province have been trained. Successful achievements have been made and the statistical results are shown in Table 2 at the next part.

Highlands of Vocational Education Project Construction in Logistics Industry

Insisting on the strategy of “strengthening schools with talents and establishing schools with quality”, the college strengthens the construction of high-level teachers and promotes the connotation construction of schools. The project has achieved outstanding results. In 2017, it was set up as a pilot project of modern apprenticeship system of the Ministry of Education, and in 2018, it has set up three provincial-level first-class projects of modern logistics management, intelligent logistics technology and modern logistics business. The characteristic specialty group was confirmed as the first batch of 1+X certificate system pilot colleges in 2019. Five specialties were identified as the backbone specialties of the Innovation Action Plan for Higher Vocational Education Innovation and Development (2015-2018).

The college has built two central financial support majors, one demonstrative specialty group, one provincial demonstrative specialty, two provincial specialties and one provincial boutique specialty. The school actively promotes the construction of online learning space, has established six major network resource platforms, and in 2018 was named excellent online learning space by the Ministry of Education [18].

Taking online open courses and professional teaching resources as the starting point, the college has constructed the digitalized teaching resources under the condition of “Internet +”. The teaching resources database of logistics information technology specialty has been selected as an optional resource for teaching resources of vocational education, and four provincial online open courses such as “RFID technology and application”, “GIS technology and application” have been established. The curriculum “Logistics Information Technology” has been identified as National Quality Resource Sharing Course. More than 20 textbooks of the 13th Five-Year Plan series have been published.

Docking “the Belt and Road” to Build an International Service Base

The school has been actively supporting the construction of “the Belt and Road”. Over the past three years, 2 teachers have been sent to work in the countries and regions, who have taken the initiative to carry out foreign aid training, and have carried out special topics for enterprises, government officials and senior managers in more than 40 countries and regions along the “one belt and one road” including Pakistan, Afghanistan and Nepal. In over 10 terms of special training, a total number of 1224 trainees participated in learning, of which more than 95% are the school teachers.

By completing the Sino German cooperative education project, the school has transported more than 20 logistics technical talents to the countries along the belt. In 2018, the school became a student recruiting unit for Hunan provincial education department, the first batch of Malaysia students came to our college for further study, which opened a new era for the school to open up and train talents directly along the “belt and road”.

Achievements in the Construction of “Double-Qualified” Teachers in College

The construction of teaching staff got lots of results.

Through the construction of the teaching staff, part-time teachers account for 41.6% of the total number of professional teachers, the proportion of “double-qualified” teachers reaches 92.6%, the rate of teachers going abroad for further study is 82.7%, the proportion of teachers with master’s degree is 90.5%, the proportion of teachers with advanced professional and technical positions or above is 45.28%, and 18 famous teachers are introduced flexibly. There are 3 professors and PhD returning from overseas, 6 provincial professional group leaders, 21 famous teachers’ studios, 36
professional leaders and 20 young backbone teachers joined the college team. A three-level teaching team has been formed according to “group, specialty and curriculum”.

Table 2 shows the symbolic achievements of the construction of the school’s “double-qualified” teaching staff. The school now has three young backbone teachers in the national industry, 3 provincial teaching teams, 1 famous teacher in Furong teaching in Hunan Province, 1 excellent teacher in provincial level, 1 subject leader in provincial level, 5 professional leaders in provincial level, 13 young backbone teachers in provincial level, and 16 visiting scholars. 3 provincial teacher training bases and 2 national teacher training bases have already been established.

### Table 2. Outcomes of “Double-qualified” Teachers’ Construction.

<table>
<thead>
<tr>
<th>No.</th>
<th>Project Name</th>
<th>Grade</th>
<th>Type</th>
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<tbody>
<tr>
<td>1</td>
<td>Famous Teacher Furong</td>
<td>Provincial</td>
<td>Individual</td>
</tr>
<tr>
<td>2</td>
<td>Prominent Teacher</td>
<td>Provincial</td>
<td>Individual</td>
</tr>
<tr>
<td>3</td>
<td>Modern Logistics Professional Group</td>
<td>Provincial</td>
<td>Regimental</td>
</tr>
<tr>
<td>4</td>
<td>Logistics Engineering Technology Specialty</td>
<td>Provincial</td>
<td>Regimental</td>
</tr>
<tr>
<td>5</td>
<td>Logistics Information Technology Specialty Major</td>
<td>Provincial</td>
<td>Regimental</td>
</tr>
<tr>
<td>6</td>
<td>Logistics Management and Service Teacher Training Base</td>
<td>Provincial</td>
<td>Base</td>
</tr>
<tr>
<td>7</td>
<td>Logistics Information Technology Training Base</td>
<td>Provincial</td>
<td>Base</td>
</tr>
<tr>
<td>8</td>
<td>Logistics Union Applied Technology Teacher Training Base</td>
<td>Provincial</td>
<td>Base</td>
</tr>
<tr>
<td>9</td>
<td>Logistics Management and Service Teacher Training Base</td>
<td>National</td>
<td>Base</td>
</tr>
<tr>
<td>10</td>
<td>Quality Training Base for Teachers in Vocational Colleges</td>
<td>National</td>
<td>Base</td>
</tr>
</tbody>
</table>

**Conclusion**

To build a “three-in-one” or trinity and “double qualified” teaching team is to achieve the integration of “specialized and part-time integration, school-enterprise integration and production-teaching integration”. Teachers should possess not only the quality of theoretical teaching, but also the ability of practical training. This is the key to improve the quality of skilled personnel training.

For the sake of cultivating high-quality talents, it is urgent for higher vocational colleges to build a team of “double-qualified” teachers with excellent quality, reasonable structure, combination of specialty and part-time, distinctive characteristics and relatively stable [19]. The training of “double-qualified” teachers in higher vocational colleges has set based on the characteristics of vocational education itself, and also conformed to the law of teachers’ growth.

In order to speed up the construction of “double-qualified” teachers and promote the development of vocational education, Hunan Modern Logistics College has made in-depth exploration from formulating the training and identification methods of “double-qualified” teachers to carrying out the identification of “double-qualified” teachers and the joint training of schools and enterprises, so as to effectively promote the “double-qualified” teachers in schools. Teachers’ team building has a big power to push the development of logistics industry. It has played a leading role in professional construction, personnel training, improving scientific research level and serving the development of local logistics industry.

**References**


