Investigation and Research on the Capacity Building of "Double-teacher" Teachers in Higher Vocational Colleges

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Abstract: "Double-teacher" teachers are the core requirements for teachers in the process of teacher specialization exploration in China's vocational education. With the implementation of the plan for the construction of high-level vocational schools and majors with Chinese characteristics, the acceleration of the reform and development of higher vocational education and the high-quality development of higher vocational colleges, the construction of a high-level vocational education "double-teacher" teaching team is of great strategic significance for the future development of higher vocational colleges and the deepening of higher vocational education reform. With the continuous development of the specialization of vocational education teachers, the professional capacity building of "dual-teacher" teachers has received extensive attention in the field of vocational education, and has become an important part of the training of vocational education teachers, as well as an important starting point and an important force to lead the national strategy of vocational education services, integrate into regional development, and promote industrial upgrading.

Keywords: "Double-teacher" Teachers; Vocational Education; Professional Competence.

1. Introduction
The construction of the "double-teacher" teacher team in higher vocational colleges is an important part of the reform and development of higher vocational education, and it is a strong support for enhancing the attractiveness of higher vocational colleges and ensuring and improving the quality of education and teaching. However, in recent years, due to the rapid expansion of the scale of higher vocational education, the pace of the construction of "double-teacher" teachers has lagged behind. Judging from the current actual situation, the construction of the "double-teacher" teacher team is ambiguous and one-sided at the level of theoretical concept identity and practical operation. In the face of the challenges and opportunities of the modern society, the national government, higher vocational colleges and educators should think deeply and actively explore the new model of "dual-teacher" teacher team construction. Therefore, it is necessary to scientifically identify the conceptual connotation of the construction of "double-teacher" teacher team, and have a clear understanding of the prescriptiveness of its professional ability standards, and on this basis, carry out strategic research on the current situation of educational practice[1].

For a long time, most higher vocational colleges only focus on the construction of "double-teacher" teachers from the perspective of managers, but rarely consider what kind of training they hope to get from the perspective of "double-teacher" teachers, which leads to thankless training and affects the performance of training work. The purpose of this study is to explore the problems existing in the training of "double-teacher" teachers in higher vocational colleges across the country.

2. Survey Results and Analysis
2.1. Gender, Age and Teaching Status of the Interviewed Teachers
The gender ratio of "double-teacher" teachers in higher vocational colleges is basically the same, indicating that there is little difference between men and women in the professional identity of higher vocational teachers. Among the teachers surveyed, the proportion of young teachers under the age of 35 exceeded 65.00%, and the proportion of teachers who have been teaching for less than 10 years exceeded 70.00%, which to a certain extent indicates that the proportion of young teachers in higher vocational colleges is relatively large, and they have become the main force of higher vocational education teachers. The training of young teachers is related to the overall situation of the sustainable development of vocational education, and is of great significance to improving the quality of training of higher vocational talents. The large proportion of young teachers means that the phenomenon of "piling up" of their professional titles is coming, and the reform of the management of higher vocational colleges has limited the proportion of senior professional titles, which indicates that young teachers will face very fierce competition when they are promoted to senior professional titles in the future. This phenomenon will have a certain impact on the structure and stability of the teaching staff in the future, and the separation of teaching staff, management personnel and scientific research personnel should be considered by the managers of higher vocational colleges as soon as possible [2].
2.2. Interviewed Teachers' Academic Qualifications, Professional Titles and Positions

More than half of the surveyed "double-teacher" teachers have a master's degree or above, and nearly 33.80% of the teachers have obtained a master's or doctoral degree on the job, which shows that higher vocational colleges attach great importance to teachers' on-the-job continuing education, and also shows that China's professional degree education is welcomed by higher vocational colleges. The proportion of intermediate-level professional titles among the interviewed "double-teacher" teachers is relatively high, which is related to the introduction of more young teachers in higher vocational colleges in recent years. The low proportion of senior professional titles suggests that higher vocational colleges should pay attention to the training of teachers with intermediate professional titles, and also remind teachers with intermediate professional titles to improve themselves in a targeted manner according to the conditions of relevant professional titles, so as to prepare for the promotion of professional titles as soon as possible. Nearly 25.70% of the "double-teacher" teachers are engaged in administrative management services at all levels and levels, indicating that higher vocational colleges have not formed a system of separation of teaching staff and administrative personnel, and administrative management will undoubtedly crowd out the time for teaching, scientific research and social practice, which is what managers should pay attention to.

2.3. The Source of the Interviewed Teachers and the Courses They Teach

In the survey, it was found that the interviewed data showed that 85.50% of the "double-teacher" teachers in higher vocational colleges did not have practical experience in industry enterprises before entering higher vocational colleges, but went directly out of the school gate and entered the school, and only 6.00% of teachers with more than two years of practical experience, behind the data implied the urgency of the "double-teacher" teacher training in higher vocational colleges and the arduousness of the task. At the same time, the ratio of teachers of professional courses to teachers of professional basic courses reflects that the boundary between professional courses and professional basic courses in higher vocational colleges is still relatively obvious, which is incompatible with the current reform of higher vocational education courses, and the reason for this situation may be related to the cultivation of "double-teacher" teachers as the leading part of curriculum reform[3]. How to transform the "professionalism" of higher vocational courses into "vocational" is a topic and content that managers of higher vocational colleges and teachers of "double-teacher" should study and pay attention.

2.4. The Overall Perception of "Dual-teacher" Teachers among the Interviewed Teachers

From the survey and interviews, it was found that there are many concepts in the interviewed teachers' cognition of "double teacher", such as: double title: lecturer + engineer; Double Qualifications: Teacher + Technician; Double quality theory: theoretical teaching + practical teaching; Multi-quality said: teacher + engineer + senior skilled worker. Although the terms "double-teacher" and "double-teacher quality" are not unfamiliar in higher vocational colleges, more than 61.20% of the "double-teacher" teachers still have a limited grasp of the concept. In fact, there has been controversy about the connotation and standards of "double teachers" in China's vocational education circles, and due to the existence of multiple standards, many teachers are not clear about what "double teachers" and "double teacher quality" are. However, in the current pluralistic criteria, the proportion of people who agree with the "dual title theory" is significantly higher than that of other criteria, which may be related to its ease of definition and the status of university teachers. Teachers who tend to "qualification" or "quality" believe that "double-teacher" teachers should really have the quality and ability to guide students to carry out production practice, and this "real" is more important than the "name" of obtaining the professional title certificate, but this quality and ability obviously cannot be quantified, and it is not easy to change from "flexible and hidden" to "rigid and explicit"[4]. The author believes that "double-teacher" teachers should obtain industry qualifications (professional qualifications and practice qualifications) on the basis of dual professional titles in order to be called "double-teacher" teachers who are "famous" and "real".

At present, the proportion of teachers who think that they are "double teachers" in higher vocational colleges is not high, and most of the teachers who think that they meet the "double teacher" standard think that they meet the "double quality theory", which is based on the data collection platform of talent training in higher vocational colleges. The phenomenon of less than 20.00% of the "double professional titles" reflects the difficulty in evaluating and hiring professional and technical titles other than teachers. According to the provisions of Chongqing, Sichuan Province and Zhejiang Province on the "declaration by post" of college titles, "double-teacher" teachers can only apply for teacher series titles in principle, and cannot apply for professional and technical titles for industry and enterprise employees, and the education system has no right to evaluate such titles, which leads to the phenomenon of "this road is not passable" for the evaluation of the second title, which contradicts the connotation of "double-teacher" teachers proposed by the Ministry of Education[5]. Therefore, the national and provincial talent management departments should introduce supporting professional title evaluation policies, open up the channels for the evaluation of "double teachers", and provide institutional guarantee for the training of "double teachers".

2.5. Respondents' Perception of the Ability of "Double-teacher" Teachers

In the survey, 95.80% of the "double-teacher" teachers believe that ideological quality, professional quality, teaching ability, professional practice ability and vocational post ability are the qualities and abilities that should be possessed to be competent in higher vocational education teaching and practical training, which is basically the same as the current requirements for "double-teacher" teachers. Nearly half of the teachers surveyed believe that they should also have strong psychological quality, teaching reform ability and scientific research ability to be competent in higher vocational education and teaching. Most teachers do not choose the ability to apply information technology, probably because with the popularization of computer and multimedia application technology, everyone thinks that this ability is necessary and does not need to be emphasized. The lack of
attention to organizational leadership and the sense of unity and cooperation among the interviewed teachers may be related to the working environment and working status of most of the current higher vocational teachers. The author believes that the construction of teaching teams, scientific research teams and social service teams in higher vocational colleges is a better way to cultivate "double-teacher" teachers, and how to cultivate the sense of unity and cooperation and organizational leadership ability of "double-teacher" teachers in higher vocational colleges is a problem that team leaders, school managers and "double-teacher" teachers themselves should consider.

### 2.6. Interviewed Teachers' Perception of "Double-teacher" Teacher Training

Carrying out school-enterprise cooperation, going to the base enterprise practice, evaluating the second title, and obtaining the qualification of vocational skill appraisal assessor are effective ways for the "double-teacher" teachers of higher vocational colleges to cultivate their professional practice ability and vocational post ability. Continuing education (degree), participating in teaching and research, participating in various training courses and academic conferences, conducting business competitions, preparing and listening to lectures collectively, hiring experts to guide teaching and research, and joining various societies (associations) are popular ways to cultivate the teaching ability and training research ability of "double-teacher" teachers in higher vocational colleges. In addition, more than 80% of the teachers agreed that all "double-teacher" teachers in higher vocational colleges should be classified and specially trained according to the needs of professional construction, curriculum construction, talent training, and the age, professional title, education, expertise, hobbies and other characteristics of different teachers. More than 60% of the "double-teacher" teachers are not aware of the importance of self-cultivation and need to be promoted and guided by managers.

### 3. Theoretical Analysis of the Professional Ability of "Double-Teacher" Teachers

#### 3.1. Conceptual Analysis of the Professional Competence of "Double-teacher" Teachers

At present, there are different opinions on the concept of "double-teacher" teachers in the academic circles, and the main theories include the theory of "double professional titles", "double certificates", "double ability (double quality)", "double level", "double integration", "superposition", "specific" and "double source". The richness of the connotation of the concept of "double teacher" reflects the multi-dimensional and broad horizon of people's understanding of the concept of "double teacher", but there are also unclear concepts, too broad extension, and even confusion[6].

The first is the "double-teacher" teacher of individual-level cognition. For the theories of "double professional titles", "double certificates", "double levels", "double abilities (double qualities)" and "double integration", the concept of "double teacher" teachers is defined by focusing on the individual level of teachers in vocational colleges. The theory of "double professional titles" and "double certificates" emphasizes the external formal characteristics of "double teacher" teachers. According to the theory of "double professional titles", "double teacher" teachers refer to teachers who have intermediate (or above) teacher titles in their own specialty, and also have intermediate (or above) professional titles in another technical series. The "double certificate" theory holds that any teacher who holds a "double certificate" (a teacher's professional qualification certificate and a qualification certificate for other professions or occupations) is a "double teacher" teacher. For the actual situation of China's current vocational qualification (skill) certificate system and professional title management system, it is unrealistic to make all teachers with corresponding qualities and abilities obtain relevant vocational qualification certificates or professional titles, and teachers who have obtained relevant qualification certificates cannot be recognized as "double-teacher" teachers with corresponding professional quality and practical ability. These two theories have positive significance for the "entry" qualification of vocational college teachers, but the definition of the concept of "double-teacher" teachers is not complete[7].

The second is a "double-teacher" teacher with multi-level cognition. The theory of "superposition", "specificity" and "double source" is based on the perspective of the teaching team within a certain range, and is the realistic deduction of the above theories. The theory of "superposition" holds that "double-teacher" teachers have two meanings: as far as "double-teacher" teachers are concerned, they must have both a high level of professional knowledge and strong professional skills, and their explicit form is that they are both lecturers (or above) and engineers (or technicians, senior engineers, etc.); As far as the structure of the teaching staff is concerned, there are both from universities and enterprises. The theory of "superposition" focuses on the two levels of individual teachers and groups (teams); However, there is no dialectical analysis of the relationship between the two levels, and the concepts of the two levels are unified into the conceptual system of the construction of the "double-teacher" teacher team.

The third is the connotation of "double-teacher" teachers' professional ability. In terms of the ability and quality requirements of "double-teacher" teachers at the individual level, only a very small number of teachers in higher vocational colleges can meet the quality requirements of "double-teacher" teachers. At the current stage of the development of higher vocational education in China, the concept of "double-teacher" must break through the traditional mindset, define its connotation realistically, and focus on the conceptual research of "double-teacher" teachers. Based on the current practice environment of higher vocational education, the "double-teacher type" should not only be used to define a certain type of teachers in the vocational education team, but should be used to define the entire higher vocational education teacher team. "Double-teacher" should not only be used to refer to the individual teachers of a certain type of higher vocational education team, but should be used to refer to the entire teaching team of higher vocational colleges; "Double-teacher type" not only refers to the individual quality of teachers, but also refers to the quality composition of the teaching team.

The "double-teacher" teacher team is not simply a group of teachers composed of "double-teacher" teachers. In fact, it is unrealistic for the "double-teacher" teacher team to realize the full staffing of "double-teacher" teachers. In the actual
teaching practice, it is necessary for some professional backbone teachers in the teaching team to have the quality of "double teacher" and "double teacher" qualification, but more importantly, from the two aspects of professional theory and practice (training and guidance), to develop and build a "double teacher" teaching team, and gradually realize that the entire teaching team has the structural characteristics of "double teacher". In the structure of the "double-teacher" teaching team of today's higher vocational colleges, there are not only a certain number of backbone teachers with the quality of "double-teacher" and "double-teacher" qualifications, but also full-time teachers with professional theoretical teaching, and a certain proportion of part-time teachers and practical instructors with practical experience who focus on professional skills teaching and self-enterprise [8].

3.2. The Foundation for the Professional Ability of "Double-teacher" Teachers

At present, whether it is at the national level, at the provincial or municipal level, or at the university level, there is no clear design and systematic regulation of the "dual-teacher" teacher professional competence system. From the perspective of existing policies and regulations, theoretical discussion and practical experience, the corresponding requirements are put forward for the principles and elements of the professional development of "double-teacher" teachers, which provides a good basic condition for exploring and constructing a systematic and specific "double-teacher" professional ability system.

The first is the guidance of policies and norms. Although China has not yet promulgated policies and regulations for the standardization of the professional ability of "double-teacher" teachers in higher vocational colleges, the existing policies and systems have put forward the basic conditions for the qualifications of "double-teacher" teachers in vocational education. From the perspective of basic requirements, "double-teacher" teachers are also teachers, and they are backbone teachers with specific professional abilities, so their basic qualifications are the same as those of ordinary teachers. Establish a distinctive characteristics of the "double-teacher" teacher qualifications, employment assessment system, teachers' career development channel is smooth, the treatment and guarantee mechanism is more perfect, the attractiveness of vocational education teachers has been significantly enhanced, and a high-quality "double-teacher" teacher team with noble morality, exquisite skills, combination of full-time and part-time, and vitality has been basically built. This provides the overall goal for the construction of "double-teacher" teachers and professional capacity building in local and higher vocational colleges. From the perspective of local practice, many local governments have also successively standardized the qualifications and ability standards of "double-teacher" teachers in higher vocational colleges, and strengthened the standardization requirements of professional ability, such as: Jiangxi Province, Anhui Province and other provinces have formulated "double-teacher" teacher qualification recognition methods, and Guangdong Province has put forward new requirements for the importance of "double-teacher" teachers' teaching ability, scientific research ability and practical ability[9]. Although the above-mentioned identification methods and requirements have not yet been standardized and standardized, they have implied the requirements for the professional competence of "double-teacher" teachers, which provides a policy basis and guidance for further refining the professional competence of "double-teacher" teachers and constructing a professional competence system.

The second is the support of academic theories. Chinese scholars have abundant research results on the "double-teacher" teachers and abilities of higher vocational colleges. Since the education department first put forward the concept of "double-teacher" teacher in the policy in 1995, the definition of the concept has not been an authoritative conclusion in the academic circles, and the expressions of "double certificate", "double quality", "double qualification", "double ability" or "double title + double ability" have been deduced[10]. Second, the research on the ability requirements of "double-teacher" teachers is based on different opinions, which are mainly manifested in three aspects: theoretical teaching ability, which is manifested in professional knowledge, theoretical teaching, teaching philosophy and thinking; Technical practice ability, which is manifested in unique vocational skills, skilled practical skills, application of knowledge and technology, and exploration of specialized fields; Professional attitude literacy, which is manifested in professional quality, professional ethics, professional quality, professional attitude, etc. Although this will help all sectors of society to deepen their understanding of the cognition of "double-teacher" teachers in higher vocational colleges, "double-teacher" teachers should be the integrators of a variety of specific abilities, and it is necessary to enhance the public's panoramic understanding and standardized identification of the professional abilities of "double-teacher" teachers.

The third is the reference of foreign experience. Although there is no concept of "dual-teacher" teachers in foreign vocational education, there are occupations with similar names, such as "vocational training instructors" in Japan, "engineer-teachers" in Ukraine and Belarus, "dual system" teachers in Germany, vocational qualification teachers in the United States, and "skilled worker teachers" in Denmark. There are also similarities and differences in the requirements for the core competencies of vocational education teachers in different countries. Australia's core competency requirements for vocational education teachers include teaching environment coordination, instructional design, teaching and Xi tutoring, coordinated management and quality service standards, language and mathematical expression, etc. The framework of professional competence standards for vocational education teachers developed by the European Centre for Vocational Training and Development includes management, teaching, professional development and quality assurance, networking and charisma[11]. Teachers in the "dual system" of vocational education in Germany need to have professional knowledge, professional skills and professional ethics, and express them in a standardized form. The United States has defined the core competencies of technical education teachers, namely: "integrating subject knowledge into career and technical education; research progress in the field; career exploration; advanced skills and their processes; employability skills; "Workplace Learning XI", and the National Professional Standards for Professional Teaching Standards Committee for Career and Technical Education reflect the characteristics of vocational education teachers.

To sum up, all walks of life have made policy and regulatory requirements, academic theoretical explorations
and practical experience summaries for the professional development of "double-teacher" teachers in higher vocational colleges, which provides policy basis, theoretical support and empirical reference for the standardization of "double-teacher" professional ability and system construction. However, there is still no unified and universal conceptual consensus on the specialization of "double-teacher" teachers, and the professional abilities of "double-teacher" teachers should be possessed and how to build a standardized system of professional abilities are still being explored.

3.3. The Value Concept of "Double-teacher" Teachers' Professional Ability

Combined with the regional differences in the quality of vocational education and the development of economic industry in China, the professional ability system of "double-teacher" teachers should not only reflect the common elements of the construction of the teaching staff of higher vocational colleges, but also highlight the personality characteristics of the vocational education teachers, and not only cover the development concept of vocational education and the trend of the times of theoretical integration, but also meet the needs of talent training and carry forward the charm of craftsman spirit. Therefore, the value concept of the construction of the professional ability system of "double-teacher" teachers should adhere to the integration of vocational education concept and follow the law of industrial development, based on focusing on professional theory and strengthening industry practice, and cultivating the spirit of craftsmanship and promoting the moral charm of personality.

First, it is based on the attributes of vocational education and the law of industry. The "double-teacher" teachers in higher vocational colleges are not only the carrier of the concept of modern vocational education, but also the key to running higher vocational education. The professional ability of "double-teacher" teachers should continue and demonstrate the concept of vocational education, and follow the law of economic and industrial development. The construction of the professional competence system of "double-teacher" teachers should be guided by the concept of vocational education and the law of economic and industrial development. From the perspective of school running attributes, vocational education is a "type of education" and "cross-border education", not a "level" education, nor is it an inferior education. As the main body of the development of vocational education and the main body of skilled personnel training, the "double-teacher" teachers of higher vocational colleges must take the initiative to break the traditional secular view, and synchronize with the economy and industry, and cooperate with the industry and enterprises vertically and horizontally, so as to gain the trust of the society and the new trust of the enterprise with a high level of professional ability and standardized talent training model. At the same time, vocational education crosses the boundaries between schools and enterprises, work and Xi, and also needs to cooperate with multiple industries and different departments, which requires "double-teacher" teachers to have type thinking and cross-border awareness, and enhance "cross-border thinking" and "professional ability" in teaching and training.

The second is based on professional theory and industry practice. "Dual-teacher" teachers are the theoretical imparters and practitioners of vocational education, not only to follow the educational philosophy and industrial laws, but also to play the cross-border role and circle-breaking function given by the "middle ground" in the social division of labor, and to build a bridge between schools and enterprises, occupations and industries, and theories and practices. At the same time, "double-teacher" teachers also need to integrate professional theory and industry practice under the natural and institutional requirements of the professional development of vocational education. Under the dual role of theory and practice, the professional ability of "double-teacher" teachers inevitably needs to show dual attributes. On the one hand, based on professional theoretical knowledge, it guides students to balance between school and enterprise, classroom and students, life and Xi, and undertakes the basic responsibility of teaching and educating people; On the other hand, it is based on the practical ability of skills, guiding students to balance industry and occupation, major and employment, skills and positions, and assume the social responsibility of serving the industry.

The third is to take the spirit of craftsmanship and personality charm as the soul. "Made in China" is accelerating to "Created in China" and "Made in China", and accelerating the training of professional and technical talents with the spirit of craftsmanship is an urgent task of vocational education in the new era. The spirit of craftsmanship and personality charm are the indispensable connotations and temperaments of "double-teacher" teachers in higher vocational colleges. Craftsmen and "double-teacher" teachers have the same identity, and "double-teacher" teachers are required to take the craftsman spirit as the gene to build a professional ability system.

The professional capacity building of "double-teacher" teachers needs to give full play to their personality charm. In the teaching of theories and the inheritance of skills, we care for students with heart, care for students with affection, infect students with great love, infiltrate students with virtue, enhance emotional charm, shorten the distance with students' hearts, and strive to be "four good teachers" and "four guides". "Double-teacher" teachers should be good at getting close to the hearts of students, have temperature, the inheritance of skills should be strong, charm of theoretical knowledge, and become the "idol" of students, the "role model" of peers, and the "model" of society. The theoretical teaching of "double-teacher" teachers should have temperature, the inheritance of skills should be strong, they should be good at getting close to the hearts of students, excavating students' advantages, and motivating students to consciously take "skilled craftsmen" as their professional pursuit and career example.

Acknowledgments

Fund: The research results of the 2020 Youth Project of the Ministry of Education of the Ministry of Education of the 13th Five-Year Plan of the National Education Science "Construction and Application of the 'Double-Teacher' Teacher Professional Ability Standard System in Higher Vocational Colleges".

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