



RESEARCH ON THE CONSTRUCTION OF TEACHING ABILITY EVALUATION INDEX SYSTEM OF “DOUBLE-QUALIFIED “TEACHERS IN HIGHER VOCATIONAL COLLEGES IN CHINA

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**Abstract:-**

With the upgrading and optimization of economic structure, the rapid transformation of development mode, and the continuous advancement of the construction of modern economic development system, a group of high-quality technical and skilled talents are more and more needed, and vocational education, which undertakes the important task of cultivating technical and skilled talents, needs to play a vital role. However, the reality is that the contradiction between the growing demand for high-quality technical and skilled talents and the insufficient teaching ability of "double-qualified" teachers in higher vocational education is becoming increasingly prominent, which restricts the high-quality development of vocational education and then affects the quality of talent training. While the country focuses on the development of vocational education, how can the "double-qualified" teachers of higher vocational education shoulder the important task of cultivating high-quality compound and professional talents? What are the teaching abilities of "double-qualified" teachers in the teaching process? In this study, we took the "double-qualified" teachers of China's higher vocational colleges as the research object, and used the Delphi expert consultation method to study and develop the evaluation index of the teaching ability of the "double-qualified" teachers of higher vocational colleges, and constructed the evaluation model of the teaching ability of the "double-qualified" teachers of higher vocational colleges.

**Key words:** higher vocational colleges, "double-qualified" teachers, teaching ability, evaluation index system

**Formulation of The Question**

Higher vocational education is a typical category in the higher education system, which is oriented to the society to cultivate skilled professionals and serve the economic, social and cultural



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development, which has attracted the attention of scholars in the field of educational theory and practice. Chen Li (2022) believes that with the wave of the times of scientific and technological revolution and industrial revolution, rapid economic and social development, industrial clusters are undergoing structural changes, and it is urgent to build a modern vocational education system to transport high-quality and high-skilled new talents to first-line industries. To enhance the adaptability of vocational education talent training, the level of teachers is the key factor that determines the quality of talent training, and the "double-qualified" teachers are the call of the times for the connotative development of vocational education and the cultivation of talents to meet the needs of industrial clusters. Song Mingjiang (2015) proposed that the teaching ability of "double-qualified" teachers, which matches the positioning, training goals and educational philosophy of higher vocational colleges, restricts, guides and determines the construction and development of higher vocational colleges.

In recent years, China has introduced relevant policies.<The Implementation Plan for Deepening the Reform of Construction in of the "double-qualified" Teacher Team Vocational Education in the New Era> (Ministry of Education of China, 2019) proposes that there is a shortage of "double-qualified" teachers (teachers with both theoretical and practical teaching ability) in vocational education, which restricts the further development of vocational education.<The "Opinions on Promoting the High-quality Development of Modern Vocational Education" >(Ministry of Education of China, 2021) proposes to strengthens the construction of the teacher team and promotes the construction of "double-qualified" teacher standards and "double-qualified" teachers' teaching ability evaluation content.<The Notice of the General Office of the Ministry of Education on Carrying out Actions to Improve the Ability of Vocational Education Teachers >(Ministry of Education of China, 2022) proposes to develop the "double-qualified" teacher standard for vocational colleges in the new era, which plays a restrictive, guiding and decisive role in the construction of the teaching staff of higher vocational colleges.

## 二、 Research Methods and Design

### (一) Research Methods

Delphi, first coined by Helmer and Gordon in the 40s of the 20th centuries, is widely used in forecasting, evaluation, decision-making and planning. The expert consultation method mainly uses the experience and knowledge of experts, and uses anonymous or back-to-back methods to consult experts individually, and obtain gradually convergent expert opinions through several rounds of feedback. This research is a research question that combines theory and practice, and it is an indispensable method to improve the quality of research by consulting the opinions and suggestions of experts in higher vocational education. In this study, the leaders of some higher vocational colleges, leaders of educational administrative departments and vocational education research experts were consulted on the composition of the evaluation index of the teaching ability of "double-qualified" teachers in higher vocational colleges.

## (二) Expert Pick

The selection criteria for consulting experts are: (1) Researchers of higher vocational education and pedagogy: vocational education researchers, education researchers, psychology researchers, etc.; (2) Higher vocational "double-qualified" teachers and higher vocational education teaching managers. This study adopts the method of non-probability "subjective sampling", and invites 26 consulting experts from higher vocational colleges and teaching and research institutions, who are mainly engaged in curriculum and teaching theory, pedagogical principles, teacher education, higher vocational education and other disciplines.

## (三) Study Design

### 1. Theoretical analysis

In the fields of psychology, management and organizational behavior, some classic theories of ability structure have been formed. Based on the theoretical analysis of the competency iceberg model and the quality onion model, this study preliminarily constructed the teaching ability structure model, and formed the "Teaching Ability Evaluation Index System of College Teachers" to lay the foundation for subsequent research.

### 2. Two rounds of expert consultation using the Delphi method

In The first round of consultation issued the "Consultation Questionnaire on the Evaluation Index System of Teaching Ability of Higher Vocational 'double-qualified' Teachers (1)" was issued, and experts were required to judge the degree of agreement with the content of the preliminary index of teaching ability of "double-qualified" teachers in higher vocational education and give suggestions for revision. The questionnaire consists of three parts, the first part is the basic information of the experts, and the second part is based on the interpretation of the teaching ability indicators in this study, and the experts are required to score the agreement according to the Likert five-point scoring method. The third part asks experts to propose changes to the indicators. After the consultation, the feedback from the experts was sorted out and the relevant statistics of the evaluation index (mode, mean, standard deviation, variation,  $|M_0-M|$ ), and revise the indicator system based on the statistical results.

In the second round of consultation, the revised questionnaire "Questionnaire on the Evaluation Index System of Teaching Ability of Higher Vocational "Double-Teacher" Teachers (2)" was issued, which presented the revised indicators to the experts, and asked the experts to score the recognition degree according to the Likert five-point scoring method. After the consultation, the relevant statistics of each dimension (mode, mean, standard deviation, variation,  $|M_0-M|$ ), to construct the final "double-qualified" teaching ability index system of higher vocational teachers.

### 3. Data analysis methods

Excel 2013 and SPSS 26.0 statistical software were used for statistical analysis.

### 三、 Findings

(一) The teaching ability index of "double-qualified" teachers was initially constructed

R. Boyatzis's (1981) "Quality Onion Model", which divides competencies into inner (traits, motivations), middle (self-concept, attitudes, values) and outer (knowledge, skills, or techniques), reveals the characteristics of competencies from the inside out. Drawing on the presentation mode of the "onion model", in the construction of the teaching ability structure model and the construction of the teaching ability evaluation index, the constituent elements of the "ability composition dimension" of the teaching ability of the "double-qualified" teachers of higher vocational education can be decomposed into three levels from the inside to the outside: "personality traits", "knowledge structure" and "teaching skills". At the same time, under the guidance of the theory of competence structure, the theory of teaching competence structure and the basic theory of higher vocational education, and drawing on the paradigm of W.M. Molenaar et al. (2009) to construct a three-person structural model of teaching ability, this paper preliminarily constructs the structure model of teaching ability of "double-qualified" teachers in higher vocational education. The evaluation index system consists of three first-level indicators, 16 second-level indicators, 53 observation points and 53 scoring criteria. As follows:

**Table 1** The evaluation index system of teaching ability of "double-qualified" teachers in higher vocational education is preliminarily constructed

Level 1 index	Level 2 index	Observation points
Personality traits	Personality psychological characteristics	temperament,intelligence,character
	Career orientation	needs,motivations,interests,attitudes,values
	Career planning	career positioning,goal setting,channel setting
Knowledge structure	Professional ethics	love the motherland,abide by the law ,care for students,and be a model
	Expertise	professional theoretical knowledge, professional method knowledge,

The evaluation index of teaching ability of "double-qualified" teachers in higher vocational education is preliminarily constructed		professional and technical knowledge
	Educational knowledge	vocational education knowledge, teaching knowledge, educational technology (informatization) knowledge
	Teaching cognitive skills	cognitive ability of teaching materials and related teaching resources, cognitive ability of the syllabus, cognitive ability of students
	Instructional design skills	ability to design teaching objectives, design teaching content, and design teaching activities
	Ability to implement teaching	the ability to organize classroom teaching, the ability to use teaching resources, the ability to interact with teachers and students, the ability to individualize education, and the ability to stimulate students' interest in learning
	Teaching skills	the ability to select or compile teaching evaluation tools, the ability to implement teaching evaluation, and the ability to feedback and apply teaching evaluation results
	Teaching innovation ability	the ability to style teaching, the ability of teachers to learn, the ability to inspire students to learn innovatively
	Teaching and research ability	ability to summarize teaching experience, ability to organize teaching experiments, ability to write teaching papers

Skills Practical Ability		the ability to demonstrate technical skills, the ability to guide technical skills, the ability to carry out vocational training for the society
Practical teaching skills		ability to apply practical teaching methods, assess students' technical skills
Ability of school- enterprise cooperation		the ability to analyze industry enterprises, the ability to provide industry enterprise services, the ability to cooperate and educate people through school-enterprise cooperation
Ability to develop new teaching resources		The ability to develop new textbooks (including loose-leaf, workbook and other new forms of school-based professional textbooks), the ability to develop high-quality courses, and the ability to develop virtual simulation experiment projects

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## (二) The first round of the Delphi questionnaire

A total of 27 questionnaires were sent out in this round of expert consultation, and 26 were returned, with a recovery rate of 96%. Through the analysis and adoption of the opinions of the first round of consulting experts, and combined with the literature research, the evaluation index system was revised.

### 1. Survey results and indicator revisions for first-level indicators

After statistical analysis, the mode of the scores of the three first-level indicators was 5, the mean value was greater than 3.75 (converted to 75% grade on the 5-point scale), the standard deviation was less than 1, the coefficient of variation was less than 0.2, and the absolute value of the difference between the mode and the mean was  $|M_0 - M| < 1$ , it can be seen that experts agree with the first-level index as a whole, so the structure of the first-level indicator is retained, and only the name of the indicator "personality trait" is revised to "professional attitude".

**Table 2** Statistical analysis of the revisions to the first-level indicators

Level 1 index	M0	M	SD	CV	M0-M	Handling suggestion
	5	4.71	0.45	0.11	0.29	professional attitude
personality traits	Revision opinions: *difficult to measure objectively, so it is recommended to revise them to professional attitudes					
knowledge structure	5	4.55	0.69	0.15	0.45	retain
teaching skills	5	4.87	0.43	0.10	0.23	retain

## 2. Survey results and indicator revisions of secondary indicators and observation points

### (1) Personality traits

In general, the modifications of this part are as follows: among the secondary indicators, the original 4 secondary indicators will be deleted and 2 secondary indicators will be retained; Among the observation points, 7 observation points were deleted; In the scoring criteria, the text of one scoring criterion was amended. See Table 3 and Table 4 for details.

**Table 3** Statistical analysis of the revisions of the secondary indicators under "personality traits"

Secondary indicators	M0	M	SD	CV	M0-M	Handling suggestion
	4	3.5 6	1.1 3	0.3 1	0.44	delete
mental characteristics of individual	Revision opinions: * Difficult to perform an objective evaluation * Does not belong to the teaching ability * Innate personality is more difficult to change					
career orientation	5	4.1 5	0.7 6	0.1 8	0.85	retain
occupational planning	4	3.7 2	0.9 9	0.2 6	0.28	delete

Revision opinions:						
professional ethics	5	4.7 3	0.4 5	0.0 9	0.27	retain

**Table 4** Statistical analysis of the revised opinions of observation points and scoring criteria under "personality traits"

Observation point	Scoring criteria and revision opinions	M <sub>0</sub>	M	SD	CV	M <sub>0</sub> -M	Handling suggestion
G1.1 temperament	Good temperament and mental outlook, deeply loved by the students. * Difficult to perform an objective evaluation * This isn't a teaching ability * Innate personality is more difficult to change	5	3.5 2	1.1 2	0.3 1	1.48	delete
G1.2 intelligence	He has a strong teaching observation ability, memory, thinking ability and imagination. * Difficult to perform an objective evaluation * This isn't a teaching ability * Innate personality is more difficult to change	4	4.1 0	0.9 6	0.2 3	0.90	delete
G1.3 character	Outgoing and optimistic personality, with a strong affinity. * Difficult to perform an objective evaluation	4	3.5 8	1.0 7	0.2 9	1.42	delete





G3.3 channel setting	The main path to promoting outstanding teachers is "learning to learn".	5	4.5	0.3	0.0	0.48	delete
	* This indicator is not appropriate						
	* This isn't a teaching ability						

## (2) Knowledge structure

Under this level 1 indicator, the overall situation of the amendment is as follows: in the level 2 indicator, the names of two indicators are retained; Among the observation points, all observation points are retained; Among the scoring criteria, two scoring criteria have been modified in terms of textual expression. This study believes that knowledge structure refers to the mastery of professional theory and professional practice knowledge, and the knowledge of education and teaching principles by "double-qualified" teachers in higher vocational education.

**Table 5** Statistical analysis of the revisions to the second-level indicators under the "knowledge structure"

Secondary indicators	M0	M	SD	CV	M0-M	Handling suggestion
professional knowledge	5	4.48	0.87	0.19	0.52	retain
educational knowledge	5	4.28	0.89	0.21	0.72	retain

**Table 6** Statistical analysis of the revisions to the observation points and scoring criteria under the "knowledge structure"

Observation point	Scoring criteria and revision opinions	M0	M	SD	CV	M0-M	Handling suggestion
Z1.3 professional and	Familiar with the major and related technical knowledge.	5	4.4	0.8	0.1	0.53	revise

technical knowledge	* It is recommended to read: be familiar with the relevant technical knowledge and technical application trends of the major.
Z2.2 teaching knowledge	Familiar with the basic principles of education and teaching knowledge. * It is recommended to revise it to: master the course principles and the basic teaching principles

### (3)Teaching skills

Under the first-level indicators, the overall situation of the revision is as follows: among the second-level indicators, 2 indicators are deleted, 2 indicators are merged, and 1 new indicator is added; Among the observation points, delete 3; Among the scoring criteria, 4 items were deleted, 13 items were added, 1 scoring criterion was modified in terms of text expression, and 5 observation points were merged into the evaluation under other indicators.

**Table 7** Statistical analysis of the revisions to the secondary indicators under "Teaching Skills"

Level 1 index	M0	M	SD	CV	M0-M	Handling suggestion
	5	4.7 1	0.4 5	0.1 1	0.29	professional attitude
personality traits	Revision opinions: *difficult to measure objectively, so it is recommended to revise them to professional attitudes					
knowledge structure	5	4.5 5	0.6 9	0.1 5	0.45	retain
teaching skills	5	4.8 7	0.4 3	0.1 0	0.23	retain

Secondary indicators	M0	M	SD	CV	M0-M	Handling suggestion
	4	3.91	1.07	0.27	0.09	Delete it, and evaluate it under the

							teaching knowledge index
teaching ability	cognitive	Revision opinions:					
		* Coincident with the teaching knowledge					
		* Repeat the evaluation					
		* It is recommended to investigate under the teaching knowledge indicators					
teaching ability	design	5	4.67	0.55	0.12	0.33	retain
teaching implementation ability		5	4.63	0.48	0.11	0.37	retain
teaching ability	evaluation	5	4.73	0.46	0.10	0.27	retain
teaching ability	innovation	5	4.70	0.55	0.11	0.30	retain
teaching and research ability		5	4.35	0.75	0.17	0.65	retain
		5	4.4	0.88	0.20	0.6	merge
skills practice ability		Revision opinions:					
		* And practical teaching ability both belong to practical ability					
practical ability	teaching	5	4.56	0.72	0.15	0.44	merge
school-enterprise cooperation ability		5	4.63	4.56	0.12	0.37	retain
new type of teaching resources development ability		4	3.88	1.01	0.26	0.22	Delete it, and evaluate it under the teaching and research ability index

Revision opinions:

\* Development of teaching resources belongs to curriculum development and teaching research

\* It is inconsistent with the evaluation level of other secondary indicators, so it is suggested to place the ased

professional  
development ability      newly incre

**Table 8** Statistical analysis of the revised opinions of the observation points and grading criteria under "Teaching Skills"

Observation point	Scoring criteria and revision opinions	M0	M	SD	CV	M0-M	Handling suggestion
J1.1 cognitive ability of teaching materials and related teaching resources	Familiar with teaching materials and related teaching resources. * Coincident with the teaching knowledge * Repeat the evaluation * It is recommended to investigate under the teaching knowledge indicators	4	3.8 8	0.9 5	0.2 4	0.22	delete
J1.2 cognitive ability of the syllabus	Familiar with the teaching syllabus, I can accurately grasp the key points and difficult points of teaching. * Coincident with the teaching knowledge * Repeat the evaluation	4	3.9 5	1.0 8	0.2 7	0.05	delete





technical skills demonstration ability	technical skills on site.	
J		
technical skills guidance ability	In the site skilled, standard to guide students practical operation.	newly increased
J		
technical innovation capability	Have a strong ability of technical innovation	newly increased
J		
practical experience in enterprises	Have the relevant enterprise work experience or practical experience	newly increased
J		
guided students in the skills competition	Be able to guide students to participate in technical skills competitions	newly increased
J		
management and use ability of the training base	Be able to formulate the training base construction plan, rationally use and maintain the training base	newly increased
J		
	Have the vocational skill	newly increased



vocational Skills certification	certification level certificate							
J. technical skills demonstrati on ability	Demonstrate skilled and standardized technical skills on site.							newly increased
J10.1 develop new teaching materials ability	Can lead the development of loose-leaf type, work manual type and other new forms of school- based professional textbooks.	5	4.7 0	0.4 7	0.1 0	0.30		merge
J10.2 ability to develop excellent courses	Can lead the project-based course development according to the actual working process and tasks of the enterprise.	5	4.6 8	0.5 8	0.1 0	0.32		merge
J10.3 develop the virtual simulation experiment capability	Can lead the use of information technology, to develop virtual simulation teaching experiment.	5	4.4 5	0.6 8	0.1 5	0.55		Revise and merge
	* It is suggested to read: to plan and use information technology to develop virtual simulation teaching experiments.							
J	Good at knowledge classification and							newly increased

knowledge managemen t ability	knowledge management
J	Can continue to expand the outside edge of knowledge and newly increased ability, continue to achieve personal growth
lifelong learning ability	

### (三) The second round of the Delphi questionnaire

After the first round of expert consultation, the expert opinions were analyzed, and the literature was further consulted, and the questionnaire of "Teaching Ability of Higher Vocational "double-qualified" Teachers (the second consultation of expert opinions)" was formed through the addition, deletion and modification of indicators, observation points and scoring standards. A total of 26 questionnaires were sent out in this round of expert consultation, and 26 were recovered, with a recovery rate of 100%.

After the second round of expert consultation, the indicators, observation points and scoring criteria at all levels have been recognized by the experts, which are as follows: (1) the mode of all item scores is almost all 5, the average value of all item scores is greater than 3.75, the standard deviation is less than 1, the coefficient of variation is less than 0.2, and M0-M is less than 1. (2) The experts did not put forward other amendments and suggestions. So far, this paper has constructed an evaluation index system for the teaching ability of "double-qualified" teachers with expert validity.

**Table 8** The evaluation index system of teaching ability of "double-qualified" teachers in higher vocational education

Index

#### **G occupational attitude**

G2 career bias

G2.1 need

Scoring standard: take the higher vocational teacher profession as the first need of personal development.

## G2.2 Motivation

Scoring standard: committed to the development of higher vocational education.

## G2.3 Interest

Scoring criteria: like teaching.

## G2.4 attitude

Scoring criteria: always maintain a positive attitude towards teaching.

## G2.5 values

Scoring criteria: it is believed that teaching is the most important path for higher vocational teachers to realize their self-value.

## G4 Work ethic

### G4.1 Patriotic and law-abiding

Scoring criteria: love the motherland and the people, consciously abide by the laws and regulations, and perform the duties of teachers according to law.

### G4.2 Love and dedication

Scoring criteria: loyal to the education cause, ambitious, diligent and dedicated, willing to be a ladder, willing to contribute, highly responsible for the teaching work.

### G4.3 Care for students

Scoring criteria: care for students, respect students, fair and just to students, strict and kind aid.

### G4.4 is a teacher

Scoring criteria: behave civilized, behave appropriately, be disciplined, and lead by example.

## **Z knowledge structure**

### Z1 expertise

#### Z1.1 Professional theoretical knowledge

Scoring criteria: solid professional basic theoretical knowledge, familiar with the professional frontier.

#### Z1.2 Knowledge of professional methods

Scoring criteria: Be familiar with the theory of research methods and practical methods of this major.

#### Z1.3 Professional and technical knowledge

Scoring criteria: to be familiar with the relevant technical knowledge and technical application trends of the major.

### Z2 educational knowledge

#### Z2.1 Vocational education knowledge

Scoring criteria: to be familiar with the theoretical knowledge of higher vocational education.

#### Z2.2 teaching knowledge

Scoring criteria: master the course principles and the basic teaching principles.

#### Z2.3 Educational technology knowledge

Scoring criteria: familiar with educational technology knowledge, information technology knowledge.

## **J teaching skill**

### J1 instructional design ability

#### J1.1 Ability to design teaching objectives

Scoring criteria: be good at setting appropriate teaching objectives.

#### J1.2 Ability to design instructional content

Scoring criteria: good at processing teaching content, to highlight and strengthen teaching key points, break through and resolve teaching difficulties, and facilitate students to learn, understand and master.

#### J1.3 Ability to design instructional activities

Scoring criteria: be good at selecting appropriate teaching methods, teaching strategies and teaching methods according to the characteristics of teaching content and teaching objects.

## J2 teaching implementation ability

### J2.1 The ability to organize classroom teaching

Scoring criteria: good at creating teaching situation, leading teaching process, grasping teaching rhythm, insight into teaching objects, managing teaching discipline, creating teaching atmosphere and improving teaching effectiveness.

### J2.2 The ability to use teaching resources

Scoring criteria: skilled use of appropriate teaching methods, strategies and means.

### J2.3 Interaction and communication ability between teachers and students

Scoring criteria: focus on the interaction between teachers and students, and be good at organizing heuristic, participatory teaching.

### J2.4 Personalized education ability

Scoring criteria: teach students according to their aptitude, and be good at developing students' personality potential.

### J2.5 The ability to stimulate learning interest

Scoring criteria: be good at stimulating students' interest in learning.

## J3 teaching evaluation ability

### J3.1 The ability to select or prepare a teaching evaluation tool

Scoring criteria: be good at selecting or compiling scientific and reasonable teaching evaluation tools.

### J3.2 The ability to implement teaching evaluation

Scoring criteria: good at timely teaching evaluation.

### J3.3 The feedback and application ability of the teaching evaluation results

Scoring criteria: good at feedback and application of teaching evaluation results, and constantly promote teaching.

#### J4 teaching innovation ability

##### J4.1 The ability of teaching style

Scoring criteria: teaching has a strong personal style and charm.

##### J4.2 Teachers' learning ability

Scoring criteria: be good at learning and updating professional knowledge, and constantly improve professional ability and teaching skills.

##### J4.3 enlighten students' ability of innovative learning

Scoring criteria: be good at cultivating students' innovative thinking, so that students are happy to learn, good to think, dare to speak, dare to argue, dare to try, dare to do.

#### J5 teaching and research ability

##### J5.1 Ability to summarize teaching experience

Scoring criteria: be good at reflecting on teaching and summarizing teaching experience.

##### J5.2 Organizational ability of teaching experiments

Scoring criteria: good at organizing teaching experiment and inquiry teaching.

##### J5.3 Teaching reform ability

Scoring criteria: good at teaching scientific research, leading the completion of curriculum reform, practical teaching reform.

##### J5.4 Ability to transform teaching achievements

Scoring criteria: be good at transforming teaching and scientific research results, and achieve economic and social benefits.

##### J5.5 New teaching material development ability

Scoring criteria: an lead the development of loose leaf type, work manual type and other new forms of school-based professional textbooks.

##### J5.6 Ability to build excellent courses

Scoring criteria: can lead the development of project-based quality courses according to the actual work process and tasks of the enterprise.

#### J5.7 Virtual simulation experiment development capability

Scoring criteria: it can plan and use information technology to develop virtual simulation teaching experiment.

### J6 Practical teaching ability

#### J6.1 Technical skills demonstration ability

Scoring criteria: skilled and standardized demonstration of technical skills on site.

#### J6.2 Technical skills guidance ability

Scoring criteria: guide students in the field.

#### J6.3 Technical innovation capability

Scoring criteria: with a strong ability of technical innovation.

#### J6.4 Ability to use practical teaching methods

Scoring criteria: be good at choosing appropriate practical teaching methods and applying them to practical teaching.

#### J6.5 Assessment of students' technical skills and ability

Scoring criteria: be good at formulating practical assessment content and standard ability, and assess students' technical skills in various ways.

#### J6.6 Guide the students to participate in the skills competition

Scoring criteria: Be able to guide the students to participate in the technical skills competition.

#### J6.7 Practical experience in enterprises

Scoring criteria: have relevant work experience or practical experience.

#### J6.8 Vocational Skills certification

Scoring criteria: with the vocational skill certification level certificate.

#### J6.9 Management and use ability of the training base

Scoring criteria: can formulate the construction plan of the training base, rationally use and maintain the training base.

#### J7 School-enterprise cooperation ability

##### J7.1 Industry enterprise analysis ability

Scoring criteria: Be able to lead the research and analysis of related industry enterprises according to professional needs.

##### J7.2 Provide industry and enterprise service ability

Scoring criteria: Able to use professional technology to provide technical consultation, staff training, skill assessment and other services for industry enterprises.

##### J7.3 School-enterprise cooperation and collaborative education ability

Scoring criteria: In the school-enterprise cooperation project, I have the ability to participate in the school-enterprise cooperation and collaborative education work.

#### J8 Professional development ability

##### J8.1 Knowledge management ability

Scoring criteria: Good at knowledge classification and knowledge management.

##### J8.2 Lifetime learning ability

Scoring criteria: Can continue to expand the external edge of knowledge and ability, and continue to achieve personal growth.

## 四、Discuss

(一) Deepen the understanding of the connotation and structure of the teaching ability of "double-qualified" teachers in higher vocational colleges

This study constructs the evaluation index system of "double-qualified" teachers in China's higher vocational colleges through the Delphi expert consultation method, describes the teaching ability of "double-qualified" teachers from the three dimensions of "professional ethics", "knowledge structure" and "teaching ability", clarifies the constituent elements and observation points of teaching ability, proposes a theoretical framework for the diagnosis of "double-qualified" teachers' teaching ability in higher vocational colleges, provides tool support for the evaluation of "double-



qualified" teachers, and provides a reference for the professional development of "double-qualified" teachers.

(二) It is in line with the role positioning and mission of "double-qualified" teachers in China's higher vocational colleges under the background of the new era

Under the background of the new era, with the rapid development of social information technology, digital teaching methods are the new requirements of the times for teachers' teaching ability, and the evaluation index system constructed in this study includes the indicators of teachers' teaching ability related to information technology, emphasizing that teachers adapt to the changes of the times and show the wisdom of information teaching. At the same time, based on the role positioning of "double-qualified" teachers, teachers undertake multiple tasks of theoretical teaching, practical teaching, teaching innovation and scientific research, so the construction of the "double-qualified" teacher teaching ability index evaluation system cannot ignore other teaching abilities in addition to theoretical teaching. The evaluation index system constructed in this study highlights the comprehensive ability and quality requirements of "double-qualified" teachers in higher vocational education, which is in line with the role positioning and mission of "double-qualified" teachers in the new era.

(三) Promote the accurate evaluation and cultivation of the teaching ability of "double-qualified" teachers in higher vocational education

In this study, the teaching ability of "double-qualified" teachers in higher vocational education is deconstructed, and its system composition is paid attention to, so as to show the overall pattern of teaching ability in an all-round way, so as to provide theoretical basis and tool support for the accurate evaluation of "double-qualified" teachers. At the same time, it provides specific and targeted support for the further cultivation of the teaching ability of "double-qualified" teachers in higher vocational education.

四) Help "double-qualified" teachers find the direction of professional development

From the perspective of teachers' professional development, "double-qualified" teachers also have the need to grow and realize their self-worth (Wu Quanquan, 2007), how teachers can find out the gap between themselves and excellent "double-qualified" teachers, clarify the core competence of teaching, find out the direction of their own efforts, and strive to improve their professional quality, the evaluation index system can help them improve their personal career planning, make teaching and scientific research more targeted, and promote the growth of teachers.

## 五、 Future outlook

Due to the time relationship, the constructed index system was not measured in this study. Based on the framework of this paper, the follow-up research will compile the teaching ability scale of "double-qualified" teachers in higher vocational education, and extensively select research objects to investigate and understand the current situation of the ability of instructors in China, so as to reflect the practical value of the index system. Through further data collection, the current indicator system is verified and improved again, reflecting the dynamics and development of the indicator system.

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