

The Status Quo and Prospects of the Research on Teachers' Competence Standards in Higher Vocational Education in China

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Abstract. With the rapid development of China's higher vocational education, especially in the context of the implementation of the new vocational education law, there is an urgent need to implement the ability standards of higher vocational teachers to help the construction of vocational teachers. Through CiteSpace software analysis and literature research, this paper combed 362 relevant research papers on CNKI since 2000, compared and studied the relevant policies of vocational education teachers' competence standards at home and abroad, the relevant achievements of vocational teachers' universal competence standards and "double-position" teachers' competence standards, as well as vocational teachers' competence standards of different majors. In general, the research trend of higher vocational teachers' ability standards can be summarized as "three stages and two paths". Future research needs to build specific "double-position" teacher competency standards for different majors, increase relevant requirements for student work, refine curriculum construction competency standards to meet the combination of education and training, and explore the relationship between competency standards and teacher title evaluation.

Key words: Higher vocational colleges, Teachers' ability standards, Research overview, Prospect.

1. Introduction

In January 2018, the State Council issued the Opinions of the CPC Central Committee and the State Council on Comprehensively Deepening the Reform of the Construction of Teachers in the New Era. It is mentioned to improve the qualification standards for teachers in vocational colleges and improve the assessment and evaluation system for teachers in vocational colleges. The assessment and evaluation of double-position teachers should fully reflect the skill level and professional teaching ability.

In January 2019, the State Council issued the National Vocational Education Reform Implementation Plan, which required to improve the relevant standards of education and teaching, and implement the professional standards of teachers, especially the professional teaching standards in vocational colleges. In April of the same year, the Ministry of Education and the Ministry of Finance jointly issued the Opinions on the Implementation of the Plan for the Construction of High-level Higher Vocational Colleges and Specialities with Chinese Characteristics, which proposed the following objectives: By 2022, a number of policies, systems and standards will be formed to effectively support the high-quality development of vocational education; By 2035, the policy, system and standard system for high-quality development of vocational education will be more mature and perfect, and the development model of vocational education with Chinese characteristics will be formed. In August of the same year, the Ministry of Education and other four departments issued the Implementation Plan for Deepening the Reform of the Construction of "double-position" Teachers in Vocational Education in the New Era (Teacher's Letter [19] No. 6), it is proposed to build a hierarchical and classified professional standard system for teachers, standardize the links of teacher training, qualification access, recruitment and employment, professional title evaluation and employment, assessment and evaluation, and salary distribution through improving the standard system, and promote the scientific process of teacher employment management.

It can be seen from this that the country has a profound understanding and urgent need for the standardization of the abilities of vocational college teachers, especially "double-position" teachers. Therefore, how to construct teachers' ability standards in higher vocational education under the background of the implementation of the new vocational education law has become an important issue in front of domestic higher vocational colleges.

2. Data collection and analysis

2.1. Data collection

The data collection of this study is mainly based on the platform of CNKI (www.cnki.net) and adopts advanced search method. The deadline for document collection is March 31, 2022. With "teacher's ability", "higher vocational education" and "standard" as the subject keywords, the article source is limited to academic journals and dissertations, and 167 articles are searched; With "vocational education" and "teacher's ability" as the subject keywords, the source of articles is limited to academic journals and dissertations, and 1623 articles are searched. In order to prevent literature omission, the documents related to the research topic are extracted from the collected documents through reading, so as to supplement the documents. Focus on reading the documents from "CSSCI" and "core journals", and collect 362 Chinese documents with high research value about "teachers' ability standards in higher vocational colleges" through the above channels.

This data analysis and research uses the visual analysis tool Citespace, and uses the co-citation network analysis, keyword co-occurrence analysis, and time series analysis functions in Citespace 5.8 software to carry out visual analysis of the knowledge field and evolution process of the research on teachers' competency standards in higher vocational colleges. It is concluded that the research on teachers' ability standards in higher vocational colleges can be summarized into three stages and two main development lines.

The first stage was from 2000 to 2002. At that time, the research on teachers' ability in higher vocational colleges drew on the ability structure of undergraduate teachers to a large extent, so it mainly focused on "professional ability", "innovation ability", "scientific research ability" and "practical ability".

The second stage is from 2002 to 2012. In this stage, the research focus on teachers' ability in higher vocational colleges is on "ability structure", "ability standard", "professional ability", "evaluation standard" and "evaluation system". Also during this period, with the launch of the National Higher Vocational College Teachers' Teaching Skills Competition, "teaching ability" began to be valued by scholars, and a lot of research has been carried out.

The third stage is from 2012 to now. The research on teachers' ability in higher vocational colleges in this stage began to focus on the research of "double-position" teacher standards. At the same time, "information-based" teaching ability has become a research hotspot. During this period, China's higher vocational education generally attached importance to the connection with actual work positions. Scholars have also done a lot of research on "integration of industry and education" and "innovation and entrepreneurship".

The two main development lines can be summarized as follows: ① Take the research of "professional ability" as the starting point, and then start to focus on the research of the composition of "ability structure". By around 2010, the research began to focus on the standardization of "competence structure", and explore the transformation of "competence standard" to "evaluation standard" of teachers in higher vocational colleges. Also during this period, researchers paid more attention to the "teaching ability" of teachers in higher vocational colleges, and separated it from the "professional ability" as the focus for independent research. At the third stage, the research on "ability structure" began to shift to "double-position", and due to the national requirements for "three complete education" in higher vocational colleges, it began to pay attention to the "education" ability of double-position teachers in higher vocational colleges. Another branch of this development,

"teaching ability", began to focus on "information" teaching in the third stage. ② Starting from "innovation ability", "scientific research ability" and "practical ability", around 2012, under the influence of the "double-position" teacher policy, we began to focus on "school-enterprise cooperation", "integration of industry and education", "innovation and entrepreneurship" and other aspects. At the same time, we explored the "application-oriented undergraduate", but there was little research.

2.2. Current situation of standards related to vocational education teachers' ability

At present, three countries (regions), the EU, the United States and Australia, have relatively complete vocational education teacher competency standards and issued official documents. Chinese scholars have done a lot of research on relevant standards. This paper attempts to sort out and summarize the competency standards of vocational education teachers in the three countries (regions) and compare them with the latest competency standards of vocational education teachers in China (see Table 1). It can be seen from Table 1 that the competency standards of vocational education teachers in four countries (regions) attach great importance to the development of teaching competency standards, and divide teaching competency into three main aspects: teaching design, teaching implementation and teaching evaluation. China's ability standards strengthen the requirements of teachers' ethics, comprehensive education and teaching informatization. The competence standards of the EU and Australia both clearly describe the organization and management. The EU mainly focuses on enrollment and student record, while Australia mainly focuses on training and consulting services; and the standards of the European Union and Australia have made clear requirements for teachers' ability in international communication. The ability standard of the United States has a large proportion in comprehensive education, focusing on teachers helping students transition to work roles, and cultivating students' career decision-making and employment ability.

Table 1. Competence standards of vocational education teachers in four countries (regions)

order number	Elements of competency criteria	China	European union	America	Australia
1	Morality and style	√			
2	Professional knowledge and skills	√		√	
3	Instructional design	√	√	√	√
4	Teaching implementation	√	√	√	√
5	Teaching evaluation	√	√	√	√
6	Comprehensive education	√		√	
7	Establish cooperation		√	√	
8	international exchange		√		√
9	Teacher promotion and development	√	√	√	
10	Organization management		√		√
11	Teaching information literacy	√			
12	Professional renewal and construction			√	√

3. Academic research status of the competency standards of higher vocational teachers in China

At present, there are two levels in the research of Chinese scholars on the ability of teachers in higher vocational education. One is to study and construct the overall ability standard of teachers in higher vocational education; the second is to focus on the research of specific professional competence standards, mainly focusing on teaching ability. For the construction of the overall competence standard of higher vocational teachers, scholars have three main directions: ① the research on the universal competence standard of higher vocational teachers; ② Research on the ability standard of "double-position" higher vocational teachers; ③ Research on the competence standards of professional higher vocational teachers.

3.1. Research on the universal ability standard of higher vocational teachers

Domestic scholars have made great achievements in building a universal higher vocational teachers' ability system. Luo Xiaoqiu believes that the professional competence standards of higher vocational teachers include: The ability to implement professional ethics education, carry out industry contacts, carry out curriculum design, teaching organization and implementation, identify learners, communicate and cooperate, implement occupational health and safety protection and education, provide services and management for students, and sustainable development. [1] Liu Junyi, starting from the constructivist vocational education teaching theory, believes that vocational college teachers should have the following abilities: practical demonstration ability, teaching analysis ability, curriculum development ability, professional teaching method application and innovation ability, situational teaching environment construction ability, multiple teaching evaluation ability and vocational education research ability. [2] Zhu Xuemei's view is that the development of professional competence standards for higher vocational teachers should include two steps: one is to select important indicators based on the basis, the other is to enrich the connotation of indicators and establish specific standards. Five major areas can be selected to measure teachers' professional competence: personality traits and professional attitude, professional knowledge and accomplishment, professional practice ability, professional teaching ability, research ability and professional development ability. [3] Li Qin believes that the professional competence standard of teachers in higher vocational colleges should have five modules: professional quality, professional knowledge structure, education and teaching ability, education and scientific research ability, and professional technical ability. [4] Xiong Anfeng believes that the contents of the professional competence standards for teachers in higher vocational colleges should include demonstration, teaching professional ethics, teaching design and research, teaching organization and implementation, and practical operation. [5] Jiang Rong divided the professional competence standard of teachers in higher vocational colleges into 9 primary elements and 19 secondary elements. It also studied the weight coefficient of the first-level elements in the evaluation system: teacher's style and professional ethics education (0.10), participation in enterprise work and industry influence (0.13), teaching design and teaching research (0.15), teaching organization and teaching implementation (0.20), teaching resource development (0.10), teaching effect and evaluation (0.05), student service and management (0.07), career planning and team building (0.05), school-enterprise cooperation and industry-university-research (0.15). [6] To sum up, it can be seen that compared with the competency standard for secondary vocational teachers issued by the Ministry of Education, the competency standard for higher vocational teachers strengthens the content of scientific research and social practice in the construction process, and reduces the requirements for student management.

3.2. Research on the ability standard of "double-position" higher vocational teachers

After 2013, domestic scholars have also made many achievements in the research on the competency standards of "double-position teachers" in higher vocational colleges. Li Dan believes that the organic integration of the professional abilities of "double-position" is the professional ability standard of teachers in higher vocational colleges, which is reflected in three aspects: Must have the ability to integrate principle teaching and technology application in classroom teaching; It is necessary to have the ability to integrate applied teaching with professional action in simulated training teaching; It is necessary to have the ability to integrate action teaching with situational change in vocational practice teaching. [7] Cao Guoliang believes that the standard indicator system of "double-position" teachers' professional ability in higher vocational colleges is divided into three first-level indicators: basic ability, professional ability and professional development ability. The basic abilities include moral education ability, teaching ability, education evaluation ability, information technology application ability, management ability and coordination ability; Professional ability includes practical operation ability, curriculum development ability and career development ability, and career development ability includes scientific research ability and lifelong learning ability. [8] Li Xiaodong, based on the perspective of post ability, concluded that the criteria for the

identification of "double-position" teachers include teaching ability, scientific research ability and service ability, and teaching ability includes curriculum development, curriculum design, curriculum implementation and curriculum evaluation; Scientific research capability includes three aspects: general scientific research, scientific research methods and scientific research feedback; Service capability includes technology R&D service capability and technology application service capability. [9] To sum up, it can be seen that the current research on the competency standards of "double-position" higher vocational teachers has not determined the professional knowledge and skill standards in depth, and it is difficult to form a unified standard in this regard due to the great differences in the knowledge and operational ability of different majors. This leads to almost no difference between the "double-position" competence standard and the universal competence standard.

3.3. Research on the competence standards of professional higher vocational teachers

At present, domestic scholars have built a relatively complete teacher capacity system for higher vocational tourism management, light industry, electromechanical integration technology, pharmacy, mental health education, finance and economics, art design, chemical technology, accounting, etc.

The author summarizes the constituent elements of the above nine professional teachers' competence standards and concludes them into 19 constituent elements (see Table 2). It can be seen from Table 2 that the requirements of different higher vocational majors on teachers' ability in teaching are relatively similar, but there are great differences in social services, organizational management, innovation and entrepreneurship. In terms of student management and comprehensive education, the standards of teachers' ability in all majors are rarely involved.

Table 2. Elements of teacher competence standards for nine higher vocational majors

Ability profession	Tourism management	Light industry	Electromechanical	Pharmacy	Mental health education	Finance and economics	Art design	Chemical technology	Accounting
Morality and style	√	√	√	√	√	√	√		√
Professional knowledge and skills	√			√	√			√	√
Social services	√	√					√	√	√
Instructional design	√	√	√	√	√	√	√	√	√
Teaching implementation	√	√	√	√	√	√	√	√	√
Teaching evaluation	√	√	√	√	√	√	√	√	√
Teaching reflection	√				√			√	√
Information technology								√	√
Comprehensive education			√		√				
Student management					√				
Establish cooperation	√				√		√		
Curriculum development		√							
Professional construction		√			√				
Organization management	√								√
Scientific research capacity	√	√		√		√	√	√	√
Teacher development	√	√							√
Innovation ability	√	√	√			√		√	
Entrepreneurship and employment guidance		√							
Information acquisition		√							

4. Conclusion and prospect

4.1. Research conclusion

From the perspective of policy, at present, China has not released the competency standards for teachers in higher vocational education at the national level. The Professional Competence Standards for Teachers of Normal Students in Secondary Vocational Education (for Trial Implementation) issued by the Ministry of Education has certain reference meaning for the formulation of the competency standards for teachers in higher vocational education in the future, but its competency components are difficult to meet the requirements of higher vocational education. Compared with foreign higher vocational education teacher competence standards, the standards have obvious deficiencies in organization and management, professional construction, and establishment of cooperative relations.

In recent years, the academic community has made a lot of research results on the standards of teachers' ability in higher vocational education, especially in the aspect of teaching ability standards, which has formed a relatively unified conclusion, that is, from the three aspects of teaching design, teaching implementation and teaching evaluation, teachers' ability is required. The current research results show that there is no obvious difference between the "double-position" teacher's ability standard and the universal ability standard of higher vocational teachers, and the construction of the "double-position" teacher's ability standard does not involve professional knowledge and skill standards in depth. At the same time, most of the competency standards of higher vocational teachers constructed by the existing research have deficiencies in student management and comprehensive education, which are not in line with the policy spirit of "three complete education".

4.2. Prospect

At this stage, the research on the competency standards of higher vocational teachers is still hot, and future research can be improved and broken through from the following four aspects: First, it is necessary to study and build specific "double-position" teacher competency standards for different majors, and refine the competency standards of teachers in professional knowledge and practical ability in combination with the actual requirements of the industry. Second, we should increase the construction of standards in student management, employment and entrepreneurship guidance, quality education and other aspects. How to become a "human teacher" should also become an important part of the ability standard. Thirdly, the teaching ability module in the standard should fully consider the "integration of education and training". According to the requirements of different teaching scenarios, teachers should have the corresponding curriculum construction ability. Fourth, the standards should put forward corresponding requirements for teachers at different levels. Future research should explore the relationship between competency standards and the evaluation and employment of teachers' professional titles, so as to increase the enforceability of the standards.

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