

Research on the Coupling Mechanism between Teaching Competitions and Teacher Development under the Background of Vocational Education Reform: An Empirical Multi-Case Study Based on Provincial Teaching Competence Competitions

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Abstract: The teaching staff is the primary resource of higher vocational colleges, and improving teachers' professional competence is the fundamental guarantee for the high-quality development of higher vocational colleges. Taking the Teaching Competence Competition of the National Vocational College Skills Competition as the background and provincial competitions as the empirical case, this paper explores the gap between the current situation of higher vocational college teachers and their development goals, as well as the significance and role of the Teaching Competence Competition in promoting the professional development of higher vocational college teachers. Based on the alignment points and common goal pursuits of the Teaching Competence Competition and the professional development of higher vocational college teachers, the paper puts forward strategies to boost the professional development of higher vocational college teachers, targeting at two aspects: exploring the "three key points" to promote development and gathering the "three forces" to ensure quality and efficiency.

Keywords: Teaching Competence Competition; Professional development of higher vocational college teachers; Coupling mechanism

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1. Introduction

As the core position for cultivating technical and skilled talents, the high-quality development of vocational education has become the key to solving the talent shortage in the field and enhancing the competitiveness of the labor market^[1]. The National Vocational Education Reform Implementation Plan clearly proposes building a high-quality "double-qualified" teaching staff, and the improvement of teachers' professional competence is the fundamental guarantee for the high-quality development of vocational colleges^[2]. In 2016, the Ministry

of Education issued the Professional Standards for Teachers in Higher Vocational Colleges (Trial) (hereinafter referred to as the Professional Standards), which set a “baseline” for the construction of higher vocational college teaching staff. However, how to rely on effective carriers to promote teachers to meet the standards efficiently has become a core problem to be solved urgently in the reform of higher vocational education.

Since its adjustment from the original Information-based Teaching Competition in 2018, the Teaching Competence Competition of the National Vocational College Skills Competition (hereinafter referred to as the “Teaching Competence Competition”), featuring high specification, systematicness and practicality, has gradually become an important link connecting the requirements of the Professional Standards with the development needs of teachers. Based on the empirical multi-case study of provincial Teaching Competence Competitions, this paper deeply analyzes the coupling logic between teaching competitions and teacher development, explores the professional growth path of teachers by promoting teaching through competitions and empowering teachers through competitions, and provides practical references for the construction of teaching staff under the background of vocational education reform.

2. A practical review of the development of higher vocational college teachers under the guidance of the professional standards

The Professional Standards constructs a framework system for the professional development of higher vocational college teachers from two dimensions of “basic concepts” and “basic conditions”, serving as a “compass” for teachers’ competence improvement and a “yardstick” for measuring the development gap. Empirical research shows that current higher vocational college teachers still have obvious shortcomings in the aspects of professional philosophy, accomplishment, knowledge and competence^[3,4].

2.1. Core requirements of the professional standards for the development of higher vocational college teachers

With the four basic concepts of “morality first, student-centered, competence-oriented, and lifelong learning”, the Professional Standards puts forward specific requirements from three dimensions of professional accomplishment, professional knowledge and professional competence, forming a complete development system of “philosophy guidance - accomplishment support - knowledge foundation - competence implementation”.

- (1) Professional accomplishment focuses on the “three recognitions and two guidances”: requiring teachers to recognize the professionalism and uniqueness of higher vocational education, the individual differences of students, and the fundamental task of fostering virtue through education, guide students to stimulate learning motivation and master scientific learning methods, highlighting the characteristic of vocational education of “integrating moral education and talent cultivation”.
- (2) Professional knowledge centers on the “two masteries and two possessors”: emphasizing that teachers need to master the cognitive laws of higher vocational college students and the teaching theories of vocational education, and possess the digital literacy required by the state and the ability to design information-based teaching schemes, reflecting the knowledge structure of “combining theory with practice”.
- (3) Professional competence highlights the “two establishments and two flexibilities”: clarifying that teachers need to create practical teaching platforms and teaching and research atmospheres, and flexibly use action-oriented teaching methods and comprehensive evaluation methods, demonstrating the competence orientation of “combining work with study and integrating theory with practice”.

2.2. Existing shortcomings in the professional development of higher vocational college teachers

Based on interviews with participating teachers and multi-case analysis of provincial Teaching Competence Competitions, in contrast to the requirements of the Professional Standards, the current development of higher vocational college teachers has the following prominent problems.

2.2.1. Vague cognition of professional philosophy and insufficient depth of practice

- (1) The implementation of fostering virtue through education is superficial: some teachers position themselves as “pedagogues”, focusing on knowledge transmission while neglecting value guidance, the excavation of curriculum ideological and political elements is not in-depth and the integration is rigid, failing to realize the whole-link education of “cognition, emotion, will and behavior”^[5-7].
- (2) The implementation of student-centeredness is formalistic: classrooms are dominated by teacher lectures, ignoring the cognitive characteristics of higher vocational college students, such as “strong visual thinking and high practical demand”, with insufficient differentiated teaching and personalized guidance.
- (3) The understanding of competence-oriented is one-sided: some highly educated teachers confuse “professional knowledge” with “teaching competence”, lacking the instructional design ability to transform theories into practical skills, and being deficient in “double-qualified” accomplishment.
- (4) The awareness of lifelong learning is weakened: some teachers are satisfied with their existing knowledge reserves, lag in updating industrial new technologies and educational new methods, and are divorced from enterprise practice and the teaching needs of the digital age^[8].

2.2.2. Structural shortcomings in professional accomplishment, knowledge and competence

- (1) Professional accomplishment: Weak ability in team cooperation and school-enterprise communication, making it difficult to adapt to the needs of project-based teaching, inaccurate analysis of students’ learning situation, failing to implement the principle of teaching students in accordance with their aptitude, lack of guidance methods for students’ exploratory spirit and autonomous learning habits^[9].
- (2) Professional knowledge: Inadequate mastery of vocational education teaching theories and students’ cognitive laws, in-depth interpretation of curriculum standards is lacking, and the integration of teaching content with posts, courses, competitions and certificates is insufficient, weak digital literacy and a lack of application ability of technologies such as virtual reality and big data^[10].
- (3) Professional competence: Insufficient enterprise practice experience, with professional skills divorced from industrial needs, the application of action-oriented teaching methods is just a label, lacking substantive implementation, academic evaluation is still dominated by result evaluation, and the system of process evaluation and value-added evaluation has not been established.

3. The coupling logic between the teaching competence competition and the development of higher vocational college teachers

The Teaching Competence Competition is not a simple “competitive activity”, but an “ecosystem” that forms a deep coupling with teachers’ professional development through goal alignment, process coordination and result mutual promotion^[11,12]. This coupling is reflected not only in the high alignment between the competition plan and the

Professional Standards, but also in the accurate solution of teachers' competence shortcomings by the competition process.

3.1. Goal coupling: Resonance between competition orientation and teachers' development needs

The competition plan of the Teaching Competence Competition is optimized year by year, and its core orientation forms a "trinity" goal alignment with the requirements of the Professional Standards and the development needs of teachers.

- (1) Policy alignment: Requiring teachers to thoroughly implement the relevant policy documents of vocational education reform, integrate the concepts of industry-education integration and school-enterprise cooperation into instructional design, and promote teachers to grasp the reform direction.
- (2) Education-oriented: Emphasizing the implementation of "holistic education for all students" and "curriculum ideological and political education", forcing teachers to change the concept of "focusing on teaching while neglecting education".
- (3) Standard compliance: Based on national teaching standards and post practice standards, helping teachers consolidate the professional knowledge of "teaching based on standards".
- (4) Technological prospectiveness: Adding the assessment module of "teachers' digital literacy" to promote teachers to improve their information-based teaching ability^[13].

3.2. Process coupling: Collaborative progress between competition preparation practice and teachers' competence improvement

The three-level selection mechanism of the Teaching Competence Competition, namely "school competition - provincial competition - national competition", forms a complete "tempering chain" for teachers' competence. There is a significant process coupling between the competition preparation process and the improvement of teachers' professional competence^[14].

- (1) Improving accomplishment through team cooperation: The competition requires teams of 3-4 teachers of different ages to complete various tasks by division of labor, which effectively cultivates team cooperation and communication abilities, and meets the needs of project-based teaching.
- (2) Consolidating competence through practical polishing: The competition preparation experience covers the whole process of "learning situation analysis - scheme design - classroom implementation - evaluation and reflection", which specifically solves the shortcomings such as "rigid teaching methods" and "single evaluation".
- (3) Updating philosophy through benchmarking and improvement: The expert comments in the review of provincial competitions enable teachers to intuitively recognize their own deficiencies and promote the renewal of philosophy and iteration of methods.

3.3. Case empirical evidence: Coupling effects of teachers' development in provincial competitions

Based on the case analysis of 12 award-winning teams in provincial Teaching Competence Competitions from 3 higher vocational colleges in Jilin Province (including 2 national "Double High Plan" construction units), the coupling effect of teaching competitions and teachers' development is remarkable.

- (1) Philosophical transformation: 100% of the award-winning teams have changed their understanding of

“fostering virtue through education” and “student-centeredness” from “passive acceptance” to “active practice”, with more natural integration of curriculum ideological and political education.

- (2) Competence improvement: 83.3% of the teams formed a curriculum system integrating posts, courses, competitions and certificates after the competition, 75% of the teachers mastered digital teaching technologies, 66.7% of the teams established a comprehensive evaluation system.
- (3) Team growth: All teams formed stable teaching innovation teams, 6 teams took the lead in completing school-level and above teaching and research projects, the school-based teaching materials developed by 4 teams were selected into provincial planned teaching materials, realizing a virtuous circle of “promoting research through competitions and promoting construction through competitions”.

4. Construction of the coupling mechanism between teaching competitions and the development of higher vocational college teachers

Based on the above coupling logic and case empirical evidence, it is necessary to construct a long-term coupling mechanism between teaching competitions and teachers’ development from three aspects: “exploring alignment points, activating power sources, and gathering synergy”, so as to realize the sustainable development of “empowering teachers through competitions and promoting growth through competitions” [15].

4.1. Precise positioning: Exploring the “Three Key Points” to consolidate the coupling foundation

4.1.1. Anchoring the “Alignment Point”: Constructing a docking framework between competitions and standards

Taking the Professional Standards as the benchmark, the requirements of the Teaching Competence Competition are decomposed into four competence modules: “instructional design, teaching implementation, teaching evaluation, and teaching reflection”, forming a corresponding relationship of “competition indicators - standard requirements - development goals” (see Table 1), guiding teachers to clarify the development logic that competition preparation is the process of “meeting the standards”.

Table 1. Corresponding relationship between the requirements of the teaching competence competition and the professional standards

Competition Competence Modules	Corresponding Requirements of the Professional Standards	Teachers’ Development Goals
Instructional Design	Professional knowledge (interpretation of curriculum standards, design of teaching schemes), Professional philosophy (student-centeredness)	Master the curriculum design method integrating posts, courses, competitions and certificates, and form a student-centered instructional design thinking
Teaching Implementation	Professional competence (action-oriented teaching, information application), Professional accomplishment (team cooperation)	Proficiency in using task-driven, virtual simulation and other teaching methods, and improve classroom practice and team cooperation abilities
Teaching Evaluation	Professional competence (comprehensive evaluation), Professional knowledge (learning situation analysis)	Establish an evaluation system of “process + result + value-added”, and possess the ability of learning situations based on data
Teaching Reflection	Professional philosophy (lifelong learning), Professional accomplishment (teaching and research ability)	Form the teaching and research habit of “practice - reflection - improvement”, and improve the ability of independent development and scientific research

4.1.2. Identifying the “Entry Point”: Promoting the competition to benefit all teachers

To address the problems of limited competition quotas and insufficient coverage, a school-level competition system of “full participation and hierarchical progression” is constructed.

- (1) Full coverage: Downscale the competition to secondary colleges and require every teacher to participate in the college-level competition to realize “everyone participates and everyone improves”.
- (2) Special breakthrough: Set up special competitions around teachers’ shortcomings to accurately solve weak links.
- (3) Phased guidance: Based on the “Teaching Field Theory”, guide teachers to transform from “focusing on themselves” to “focusing on courses” and “focusing on students”, and drive phased advancement through competition tasks.

4.1.3. Igniting the “Excitement Point”: Improving the incentive and guarantee mechanism

Establish a multi-dimensional incentive system of “material incentives + spiritual incentives + development incentives” to stimulate teachers’ enthusiasm for participating in competitions.

- (1) Achievement transformation incentive: Organize award-winning teams to carry out demonstration lecture tours and experience sharing sessions, incorporate excellent resources into the school’s teaching resource database, and provide funding rewards.
- (2) Career development incentive: Incorporate competition-related achievements into the assessment indicators for professional title evaluation, merit selection and post promotion, and give priority to recommending participation in training and enterprise practice.
- (3) Process guarantee incentive: Set up special funds for competition preparation, provide expert guidance and technical support, and appropriately reduce the daily teaching workload of participating teachers.

4.2. Synergistic efforts: Gathering the “Three Forces” to strengthen the coupling effect

4.2.1. Taking the reform of competition organizers as the “Tractive Force”

Provincial education administrative departments need to further optimize the competition plan, strengthen the orientation, and increase the weight of indicators such as “school-enterprise cooperation effectiveness” and “student value-added evaluation”, enhance openness and establish a resource sharing platform for award-winning works, pay attention to sustainability, carry out post-competition follow-up guidance, and promote the transformation of competition achievements into normal teaching abilities.

4.2.2. Taking the organizational management of higher vocational colleges as the “Driving Force”

Colleges need to incorporate the Teaching Competence Competition into the overall plan of teaching staff construction, organize school-level competitions regularly, and establish a two-level management organization of “school - college”, provide precise guidance, set up a teaching guidance expert database, and offer one-on-one competition preparation guidance, realize integrated integration, incorporate competition requirements into daily teaching management, and achieve “promoting teaching through competitions and integrating competitions with teaching”.

4.2.3. Taking teachers’ independent practice as the “Executive Force”

Teachers need to take the initiative to transform competition achievements into normal teaching abilities and

integrate the advanced concepts formed in competition preparation into daily teaching, apply the mastered high-quality teaching methods to regular classrooms and carry out teaching reflection regularly, take the competition as an opportunity to actively participate in enterprise practice and teaching and research projects, forming an independent development closed loop of “participating in competitions - reflecting - practicing - improving”.

5. Conclusion and prospect

Under the background of the in-depth advancement of vocational education reform, the coupling mechanism between the Teaching Competence Competition and the development of higher vocational college teachers is a “practical path” to solve teachers’ competence shortcomings and a “key support” to realize the high-quality development of vocational education. Empirical research shows that this coupling forms a virtuous circle of “competition - development - re-competition - re-development”.

In the future, it is necessary to further deepen the practical exploration of the coupling mechanism: first, strengthen the integrated design of “competition - training - teaching and research”, and incorporate competition requirements into teachers’ pre-job training and on-the-job research, second, introduce the coupling dimension of “enterprise participation”, invite enterprise experts to participate in competition review and competition preparation guidance, and promote the accurate alignment of teachers’ abilities with post needs, third, build a “digital coupling platform” and use big data to realize intelligent support for teachers’ development.

In short, only by continuously optimizing the coupling mechanism between teaching competitions and teachers’ development can we truly realize “empowering teachers through competitions and promoting growth through competitions”, cultivate more high-quality “double-qualified” teachers for vocational education, and provide a solid teaching staff guarantee for solving the talent shortage in “bottleneck” fields and serving the high-quality development of the economy and society.

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