

Exploration on the Construction and Enhancement Strategies of Vocational Competitiveness of Higher Vocational Students from the Perspective of Vocational Skills Competitions

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Abstract: This study explores the construction and transformation mechanism of vocational competitiveness of higher vocational students from the perspective of vocational skills competitions. The research finds that skills competitions significantly enhance students' vocational competitiveness by improving their professional skills, innovation ability, team collaboration, and professional literacy. The research results provide important reference value for optimizing the curriculum settings of higher vocational education and promoting school-enterprise cooperation.

Keywords: vocational skills competitions, higher vocational education, vocational competitiveness, transformation mechanism, school-enterprise cooperation

I. Introduction

In recent years, research on the vocational competitiveness of higher vocational students has mainly focused on enhancing practical abilities, improving employment guidance, aligning with market demands, promoting innovation and entrepreneurship, and enhancing overall quality. Studies have shown that strengthening practical teaching activities such as training and internships not only significantly improves students' practical operation abilities but also deepens their understanding of theoretical knowledge and enhances their workplace adaptability. In addition, comprehensive and systematic employment guidance services are regarded as key

factors. By constructing a scientific system and integrating it into compulsory courses, it effectively enhances students' enthusiasm and self-confidence in employment. At the same time, higher vocational colleges are encouraged to pay close attention to market demands and ensure that talent cultivation is closely linked to industry needs through school-enterprise cooperation and other means, thereby improving students' employment rates and workplace adaptability. Furthermore, innovation and entrepreneurship education plays a crucial role in stimulating students' innovative spirit and entrepreneurial awareness, mainly achieved through relevant course settings and participation in various competitions.

However, existing research has significant deficiencies in the following aspects:

Insufficient research on transformation mechanisms: Existing literature mostly focuses on the short-term effects of skills competitions, lacking systematic research on the transformation mechanism from "competition to workplace," especially the research on how competition abilities can be transformed into long-term workplace competitiveness is scarce.

Lack of analysis on long-term effects: Existing research mostly pays attention to skill improvement during competitions, neglecting the long-term impact of skills competitions on students' career development and its underlying mechanisms.

Weak empirical research: Relevant studies are mostly qualitative analyses, lacking sufficient quantitative data and case support, leading to insufficient universality and reliability of conclusions.

Insufficient innovation: Research methods and perspectives are relatively traditional, failing to propose innovative theoretical frameworks in light of the latest policy backgrounds (such as the "20 Policies for Vocational Education" and the "Industry-Education Integration Policy").

This paper aims to fill the aforementioned research gaps by constructing a "four-dimensional ability-transformation mechanism" framework to deeply analyze how vocational skills competitions promote the long-term development of students' vocational competitiveness by enhancing professional skills, innovation ability, team collaboration, and professional literacy. At the same time, combined with the policy

background, it explores the practical value of skills competitions in promoting vocational education reform and industry-education integration.

II. The Status and Role of Vocational Skills Competitions in the Vocational Education System

"General education has the college entrance examination, and vocational education has skills competitions." This concept highlights the core status of skills competitions in the vocational education system. By simulating actual work scenarios and tasks, competitions provide students with a platform to familiarize themselves with and meet industry demands in advance, ensuring a close connection between talent cultivation and market demands, significantly improving students' employability, and greatly enhancing the function of vocational education in serving economic and social development.

Vocational skills competitions not only stimulate the learning enthusiasm and sustained motivation of higher vocational students but also promote innovation in vocational education teaching content and methods. To cope with competition challenges, colleges and universities optimize their curriculum structures, adopt advanced teaching concepts, and comprehensively improve teaching quality. In addition, competitions deepen the teaching mode of school-enterprise cooperation and work-study integration, injecting new vitality into practical education. The industry-education integration-oriented mechanism of the National Vocational Skills Competition contributes to the emergence of a new vocational education system with Chinese characteristics. Its competition item design, technical specifications, and integration of corporate culture provide important references for vocational education reform.

Vocational skills competitions have a significant role in improving students' vocational competitiveness. By participating in such competitions, students can grasp the industry's cutting-edge technical specifications and operation standards in a timely manner, which helps improve their professional skills and enhances their competitiveness in the workplace. During the competitions, students face and solve

practical problems, a process that exercises their problem-solving abilities and innovative thinking, enabling them to quickly propose coping strategies in complex professional scenarios. At the same time, vocational skills competitions emphasize teamwork and communication coordination, which are equally important soft skills in today's workplace. Through cooperation and competition with others, students learn to leverage their personal strengths in the team, respect and understand others, and cultivate excellent team collaboration spirit.

Furthermore, vocational skills competitions also have a significant impact on further education. Some provinces, autonomous regions, and municipalities directly under the central government provide preferential policies such as additional bonus points or exemption from exams in the "junior college to undergraduate" entrance examinations for students who win awards in vocational skills competitions, further enhancing the long-term value of skills competitions for students' career development.

III. The Impact of Vocational Skills Competitions on the Professional Competitiveness of Vocational College Students

Vocational skills competitions, as an integral part of vocational education, not only provide a platform for students to showcase their skills but also significantly enhance their professional competitiveness through multi-dimensional capability development. Based on the Kirkpatrick training evaluation model and Kolb's experiential learning theory, this paper analyzes how vocational skills competitions promote the comprehensive enhancement of students' professional competitiveness across four dimensions: professional skills, innovation ability, team collaboration, and professional literacy, using specific competition events (such as the "Robot Technology Application" event of the National Vocational College Skills Competition) as examples.

1. Enhancement of Professional Skills

Vocational skills competitions play a crucial role in enhancing and expanding students' professional skills. By actively participating in such competitions, students can personally experience and master cutting-edge technologies and equipment in the

industry, continuously improving themselves through practice. This competition-driven learning approach not only deepens students' understanding and mastery of professional knowledge but also greatly stimulates their enthusiasm and motivation to explore new technologies and processes.

Taking the "Robot Technology Application" event of the National Vocational College Skills Competition as an example, participating students need to proficiently master skills such as robot programming, debugging, and troubleshooting. During the preparation process, students need to continuously learn new knowledge and skills to cope with potential challenges, which helps them broaden their horizons and comprehensively improve their overall literacy.

According to the Kirkpatrick training evaluation model, vocational skills competitions achieve comprehensive enhancement of professional skills through three levels: the "reaction level" (student engagement), the "learning level" (skill acquisition), and the "behavior level" (skill application). These professional skills honed in competitions have significant application value in the workplace, making individuals possessing these skills more competitive in the job market, able to quickly adapt to job requirements, and effectively solve practical problems.

2.Cultivation of Innovation Ability

Vocational skills competitions are not only arenas for professional skills but also important platforms for stimulating students' innovative thinking and practical abilities. Kolb's experiential learning theory emphasizes that through the cyclical process of "concrete experience - reflective observation - abstract conceptualization - active experimentation," students can transform practical experience into innovative capabilities.

In the "Robot Technology Application" event, participating students need to design and optimize robot operation procedures to cope with complex task scenarios. This process not only exercises their innovative thinking ability but also enhances their ability to put ideas into practice. For example, a participating team significantly improved task completion efficiency by improving the robot's path planning

algorithm. This innovative achievement was recognized by enterprises after the competition and applied in actual production.

The cultivation of innovation ability enables students to propose unique insights in the workplace, solve complex problems, and create new development opportunities for companies. At the same time, practical abilities ensure that these innovations can be effectively implemented, improving work efficiency. The combination of these two abilities allows individuals to excel in the workplace and gain a competitive advantage.

3.Exercise of Team Collaboration Skills

Vocational skills competitions are not only contests of individual skills but also testing grounds for team collaboration skills. In the "Robot Technology Application" event, participating teams need to divide tasks and collaborate to complete the design, debugging, and optimization of robot systems. This process not only tests students' professional skills but also comprehensively examines their team collaboration and communication abilities.

Team collaboration is considered a crucial professional skill in the workplace. It helps teams work closely together, quickly respond to market dynamics, and drive projects efficiently, thereby bringing greater value to enterprises. In this process, communication skills play an indispensable role, acting as the lubricant for team collaboration, ensuring that members can accurately understand each other's ideas, significantly reducing misunderstandings and conflicts, and effectively improving the overall work efficiency of the team.

Through vocational skills competitions, students can gradually master the skills of cooperating with others in practice, learn to allocate tasks reasonably, and adjust the pace of team work. This practical experience allows students to deeply recognize the value of team collaboration and understand the importance of self-positioning within the team.

4. Shaping of Professional Literacy

Vocational skills competitions bridge the gap between theory and practice, learning and employment, and play an indispensable role in cultivating students' excellent

professional qualities. During the preparation and participation in competitions, students not only improve their professional skills but also learn how to approach work tasks with a professional attitude, master effective communication skills with team members, and learn how to face workplace challenges and pressure.

Professional literacy encompasses various qualities exhibited by individuals throughout their career, mainly involving elements such as professional ethics, skills, awareness, and behavior. Possessing excellent professional literacy positively promotes individuals' career growth. It not only helps shape a positive image in the workplace, earning the trust and respect of colleagues and superiors, but also improves work efficiency and stimulates innovation ability, thereby laying a solid foundation for the steady development of one's career.

Taking the "Robot Technology Application" event as an example, participating students need to complete tasks under strict time constraints and high-pressure environments, which not only exercises their stress resistance but also cultivates their sense of responsibility and professional ethics. The enhancement of these professional literacies enables students to better adapt to the work environment in their future careers and demonstrate outstanding professional performance.

Vocational skills competitions significantly enhance the professional competitiveness of vocational college students through comprehensive cultivation across four dimensions: professional skills, innovation ability, team collaboration, and professional literacy. The analysis based on the Kirkpatrick training evaluation model and Kolb's experiential learning theory indicates that skills competitions not only help students master cutting-edge technologies in the industry but also cultivate their innovative thinking, team collaboration abilities, and professional literacy, laying a solid foundation for their future career development. In the future, vocational education should further deepen the connection between skills competitions and workplace demands, promoting the continuous enhancement of students' professional competitiveness.

IV.The Transformation Mechanism of Vocational Competitiveness of Vocational College Students from the Perspective of Skills Competitions

1.Transition from Competition Arena to Workplace

Vocational skills competitions open up a pathway for students to delve into practical fields. They not only rigorously assess students' depth of professional knowledge but also comprehensively exercise their future workplace adaptability. In this arena, every challenge faced and every team collaboration experienced by students will become invaluable experiences in their future careers.

Vocational skills competitions provide participating students with a near-real work scenario. On this platform, students are no longer merely memorizing book knowledge; instead, they must practice personally and apply theory to solve specific problems. Faced with work challenges set in the competitions, they need to use their knowledge to conduct comprehensive analyses and propose solutions. Such experiences not only deepen their understanding of workplace workflows and task requirements but also help them adapt more quickly to new environments in the future workplace, reducing friction and confusion stemming from unfamiliarity. At the same time, the tense atmosphere and fierce competition created by the competitions, resembling a microcosm of the workplace, reflect its harshness and challenges, forcing students to exercise mental resilience and stress resistance in advance, thus preparing them psychologically for future workplace challenges.

Vocational skills competitions are regarded as fertile ground for cultivating team collaboration and communication skills. Here, each participating member plays a crucial role, learning to closely cooperate with teammates, coordinate differences, jointly tackle challenges, and explore solutions. These processes not only exercise their team spirit but also teach them how to fully leverage individual strengths within the team and effectively communicate with members from different backgrounds and personalities. In the workplace, these skills are equally vital. An outstanding professional must possess not only solid professional skills but also excellent team

collaboration and communication abilities to establish solid relationships with colleagues, superiors, and clients, ensuring efficient work progress.

Vocational skills competitions are not only a breeding ground for fostering innovative thinking and problem-solving abilities but also expose participating students to a series of complex problems without preset answers during the competition process. These challenges prompt students to exercise innovative thinking and adaptability, exploring ways to solve problems. Through such practices, students enhance their abilities to discover, analyze, and solve problems, while also nurturing their innovative consciousness and fighting spirit. In the workplace, such abilities are equally indispensable. Employees with innovative thinking and problem-solving skills often drive enterprise innovation and development, improve efficiency, and become valuable talents sought after by various companies.

Competition experience plays a significant role in workplace competition, not only promoting the growth of professional skills but also profoundly influencing the formation of workplace literacy, the stimulation of innovative thinking, and the expansion of interpersonal networks. Students who participate in skills competitions not only enhance their technical abilities but also learn workplace interaction skills, the courage to face challenges, and a continuous innovative mindset. These valuable experiences will serve as assets on their workplace journey, helping them advance further and more solidly on their future development path.

2. Transformation of Abilities and Advantages

Professional skills constitute the cornerstone of workplace competitiveness. By participating in vocational skills competitions, individuals can deeply accumulate professional theoretical knowledge, which not only provides solid theoretical support for tackling complex problems in the workplace but also makes efficient work execution feasible. Integrating project experience gained from competitions directly into workplace practice not only accelerates individuals' adaptation to the workplace environment but also promotes the overall skill level of the team. In this process, case sharing serves as a bridge, closely connecting individuals and teams, and the dissemination of successful experiences stimulates more innovative thinking.

Continuously accepting challenges is key to maintaining competitiveness. Proactively seeking new challenges and continuously verifying and improving one's professional skills help individuals maintain a leading edge in the workplace.

Innovative capabilities play a crucial role in driving personal career growth and enterprise development. In skills competitions, by cultivating innovative thinking, participants can precisely seize new opportunities in the workplace and propose creative problem-solving solutions. Currently, cross-border integration has become a major trend in innovation, merging knowledge and skills from different fields to bring revolutionary changes to workplace workflows and product services. Daring to try is an indispensable quality for innovation; stepping out of traditional constraints and boldly exploring new methods and technologies is key to achieving workplace breakthroughs and transcendence. Continuous learning is fundamental to maintaining innovative vitality, keeping up with industry trends and technological developments, constantly absorbing new knowledge, and ensuring continuous progress on the path of innovation.

Team collaboration is central to achieving collective victory in the workplace. In skills competitions, participants learn to define their roles and responsibilities within the team and collaborate with teammates to achieve goals together. This experience is equally important in the workplace environment. Effective communication is the lubricant of teamwork, ensuring precise information transmission and reducing misunderstandings and conflicts. Mutual support is a manifestation of team cohesion, enabling members to grow together when facing workplace challenges. Actively participating in team activities and establishing friendly relationships help improve the efficiency of team collaboration; reasonably resolving conflicts and disagreements within the team and maintaining team harmony are crucial; simultaneously, establishing clear goals with team members and working together to realize a shared workplace vision are effective ways to transform team collaboration into workplace advantages.

Professional literacy is an important manifestation of an individual's image in the workplace, encompassing multiple aspects such as professional ethics, sense of

responsibility, and self-management abilities. Adhering to professional ethics, maintaining an honest, trustworthy, and impartial attitude is fundamental to gaining respect from colleagues and superiors. Holding a serious and responsible attitude toward work and diligently fulfilling every mission reflects a strong sense of responsibility. At the same time, excellent time management, stress coping, and emotion control skills help individuals maintain a high-efficiency work state and face various workplace challenges. Leading by example, demonstrating outstanding professional literacy, and setting an example for the team; relentlessly learning and continuously improving one's professional literacy; proactively seeking feedback from colleagues and leaders, and continuously optimizing professional behavior are all key pathways to transforming professional literacy into workplace competitive advantages.

V. Conclusions and Suggestions

1. Conclusions

Vocational skills competitions not only test students' professional skill levels but also provide comprehensive exercise for their innovation ability, team collaboration, and professional competence. On this platform, through intense competition and cooperation, students not only enhance their professional skills but also cultivate various other abilities, laying a solid foundation for their future careers.

Vocational skills competitions significantly promote the growth of students' professional skills. During the competition, students apply theoretical knowledge learned in class to practical problem-solving. This "learning-for-application" process not only deepens their understanding of professional knowledge but also enhances their practical operation and problem-solving abilities. Through continuous practice and exploration, students' professional skills have shown marked improvement, providing a solid foundation for them to competently take on corresponding positions in their future careers.

Vocational skills competitions have become an important means of nurturing students' innovation abilities. In this event, students face open-ended questions and various uncertain challenges, which undoubtedly require them to demonstrate innovative thinking and problem-solving skills. To stand out among numerous participants, students must continuously seek novel methods and techniques, daring to try and break through conventions. This innovative journey not only exercises students' imagination and creativity but also enhances their adaptability and problem-solving abilities. These innovation abilities cultivated in competitions are extremely valuable in the workplace, enabling students to discover new opportunities, propose innovative solutions, and thus bring more value to enterprises.

Vocational skills competitions are not only a stage for enhancing students' professional skills but also a crucial venue for exercising their team collaboration abilities. In such competitions, students usually need to form teams to cooperate and jointly tackle various task challenges. This requires them to demonstrate excellent communication skills and a sense of collaboration, with clear role divisions and mutual support and cooperation. Through such teamwork experiences, students learn to work with others, mediate differences, and collaborate in problem-solving. These team collaboration skills are equally crucial in the workplace, enabling students to quickly integrate into teams in their future careers, cooperate smoothly with colleagues, and facilitate the smooth progress of projects.

The abilities gained by participants in vocational skills competitions have great practicality and transformation potential in workplace practice, which can be converted into advantages in workplace competition. The exquisite professional skills honed by students in competitions constitute a solid foundation for them in workplace competition, enabling them to quickly adapt to job requirements and efficiently complete tasks upon taking up their positions. Innovation ability allows students to discover new opportunities in the workplace and propose innovative solutions, thereby bringing more value to enterprises. Furthermore, team collaboration ability enables them to cooperate closely with colleagues to jointly face workplace

challenges. Improvements in professional competence make students more confident and composed when dealing with complex situations in the workplace. By comprehensively applying these abilities, students will demonstrate stronger competitiveness in the workplace and thus gain more promotion and development opportunities.

2.Suggestions

(1) Suggestions for Vocational Colleges

Implement a "Competition-Curriculum Integration" Credit System

Incorporating participation and performance in skills competitions into the credit system is an effective way to motivate students to actively participate in competitions. Specific measures include establishing credit recognition standards, as many schools have already done, by formulating clear credit recognition rules to grant corresponding credits based on students' participation and award levels in skills competitions. Additionally, some colleges and universities have established special credits, such as "Competition Practice Credits" or "Innovation Practice Credits," to encourage students to participate in high-level competitions and allow them to use competition results to offset part of their course credits. These initiatives will help students actively participate in competitions and thus reap the benefits of doing so.

Develop a Competition Resource Library

Collect and organize excellent cases and solutions from previous competitions to provide students with abundant learning resources. Specific measures include:

Resource Library Construction: Organize professional teachers and industry experts to systematically organize and classify excellent works, cases, technical solutions, and evaluation standards from previous skills competitions, establishing a digital competition resource library.

Case Analysis and Teaching: Incorporate excellent cases into course teaching content, guiding students to learn from and draw on successful experiences through case analysis, group discussions, and other methods to improve their ability to solve

practical problems.

Resource Sharing and Updating: Regularly update the content of the resource library, introducing the latest competition achievements and industry trends. At the same time, encourage teachers and students to upload their own practical achievements, fostering a good atmosphere of resource sharing

Collaborate with Enterprises

Set up courses based on the actual skill requirements of enterprise positions to enable students to hone their skills in practice. Specific measures include:

School-Enterprise Cooperation Curriculum Development: Collaborate deeply with enterprises to jointly develop talent training programs and curriculum systems. Invite enterprise experts to participate in curriculum design to ensure that course content is closely aligned with enterprise actual needs.

Practical Teaching Base Construction: Jointly build practical teaching bases with enterprises to provide students with real production environments and project practice opportunities. Through internships, practical training, and other means, enable students to master practical operation skills in practice.

Enterprise Mentorship Program: Introduce enterprise mentors to co-guide students' learning and practice with on-campus teachers. Enterprise mentors can share industry experience, guide students in completing actual projects, and enhance students' practical abilities and professional competence.

Project-Driven Teaching: Drive teaching with actual enterprise projects, conducting project-based teaching. In the process of completing projects, students can better understand enterprise needs and improve their team collaboration abilities and innovative thinking.

Employment and Feedback Mechanism: Establish an employment tracking and feedback mechanism to timely understand students' work performance in enterprises and changes in skill demands. Adjust curriculum settings and teaching content based on feedback to ensure continuous optimization of talent training.

Through the above measures, vocational colleges can better integrate skills competitions with daily teaching, enhancing students' practical abilities and professional competence, and cultivating more high-quality technical and skilled talents for society.

(2) Suggestions for Participating Students

Form Study Groups: Regularly Engage in Skill Exchange and Practical Exercises to Enhance Team Collaboration and Problem-Solving Abilities

In the process of improving vocational skills, students can effectively enhance their team collaboration and problem-solving abilities by forming study groups and regularly engaging in skill exchange and practical exercises. Study groups serve not only as platforms for skill enhancement but also as incubators for cultivating teamwork spirit. Through group activities, students can share their learning experiences and technical challenges, inspire and assist each other, thereby fostering a positive learning atmosphere. During these activities, members can simulate competition scenarios or corporate projects for practical exercises, which not only helps improve individual skills but also nurtures teamwork spirit and communication abilities. The participation of teachers or industry experts further elevates the quality of group learning by providing professional guidance and advice, aiding students in better understanding the application of knowledge and skills. Furthermore, regular team-building activities and assessments of learning outcomes enhance group cohesion and learning efficiency, enabling students to continuously progress through collaboration and lay a solid foundation for their future careers. This approach allows students to not only improve their individual skills but also learn how to tackle complex problems in team settings, accumulating valuable experience for their future professional development.

Watch Recordings of Previous Competitions: Learn from the Operational Experiences of Excellent Contestants to Strive for Better Results in Competitions

Watching recordings of previous competitions is an efficient learning method that can

help students rapidly enhance their competition abilities. The operational skills, time management abilities, and adaptability of excellent contestants in these recordings are worth in-depth study. Schools or teachers can systematically collect and organize these recording materials into a dedicated resource library for easy access by students. Regularly organizing students to watch competition recordings and engaging in discussions afterward to analyze the successes of excellent contestants can help students rapidly improve their competition levels. Teachers can guide students in case analysis, selecting representative clips for imitation practice, allowing students to learn and master techniques through practice. Additionally, inviting outstanding contestants who have participated in skill competitions or industry experts to provide comments and explanations can help students understand the key points of the competition from a professional perspective. Students should integrate the insights gained from watching recordings with their own practical exercises and test their learning outcomes through simulated competitions to strive for better results in actual competitions. This approach enables students to not only learn from the experiences of excellent contestants but also continuously improve their competition abilities through practice, laying a solid foundation for their future professional development.

Proactively Identify Personal Shortcomings: Targeted Improvements to Ensure Alignment of Skills with Workplace Demands

During the process of learning and competition preparation, students should proactively identify their personal shortcomings and make targeted improvements to ensure that their skills align with workplace demands. Regular self-assessment and reflection, summarizing performance during the learning process, and identifying existing problems and deficiencies are key to self-improvement. Feedback from teachers and peers is also an important reference, as they can point out issues in skill operation, team collaboration, and other aspects from different perspectives. Based on this feedback, students can formulate detailed skill improvement plans, clarifying learning objectives, content, and methods, and arranging reasonable time for specialized practice. Simultaneously, students should pay attention to industry trends

and corporate needs, maintain communication with corporate mentors or industry experts, and understand the skill requirements of the workplace. By comparing the gap between their own skills and workplace demands, students can promptly adjust their learning direction and content, better adapt to future professional environments, and enhance their competitiveness. This process of proactive learning and improvement not only helps students achieve excellent results in competitions but also provides continuous motivation and support for their future professional development.

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