The Combination of Competition and Teaching, Study in Competition, Reform and Construction Promotion through Competition

Liu YANG\textsuperscript{1,a}

\textsuperscript{1}Information Technology and Mechatronics Engineering, Shanghai Xingjian College, Shanghai, China

\textsuperscript{a}yangliu094@163.com

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Abstract. Known as the “Skills Olympics,” the World Skills Competition is an important platform for members of the World Skills Organization to display and exchange professional skills. In June 2018, the national trial of the 45th World Skills Competition “Network System Management” hosted by the Ministry of Human Resources and Social Security was held in Shanghai. This event is the first time that Shanghai has successfully hosted the 46th World Skills Competition in 2021 to hold a comprehensive vocational skill competition. It is also an important exercise for the preparation of the World Skills Competition. He Xueyang, a computer network technology major from the Department of Information Technology and Electromechanical Engineering of Shanghai Xingjian Vocational College, participated in the trial of this project on behalf of Shanghai. He was promoted to the Chinese training team and not only set an excellent example for computer network technology students, but also the content involved in the management of the competition is the core technology of the professional field, which is comprehensive. From the perspective of the professional director, the author takes the competition as the wind vane and combines the experience of the professional competition of different scales in recent years to conduct the profession. The practical exploration of the teaching mode of combining teaching and learning, learning in the game, promoting competition in the game, and promoting the game by competition is summarized as follows.

1. Promote Teaching through Competition, Combine Competition with Teaching Integrate Competition Knowledge Points into Teaching Content

Integrate the routing module of the World Skills Competition-Network System Management Project\textsuperscript{[1]} and the National Vocational Skills Competition-Computer Network Application Project Modules 2, 3 and 4 into the "Network Technology Integrated Training" course, Module 2: Network Construction and Network Redundancy Backup Solution deployment, module three: mobile Internet construction and network optimization and module four: export security protection and remote access involved in the knowledge points and the content of this module integration as a regular classroom training task, the content of the whole set of questions as the final assessment and comprehensive training will enable students to complete the full set of questions in the national competition in groups.

Besides, the World Skills Competition-Network System Management Project's Windows operating system module and the National Vocational Skills Competition-Computer Network Application Project cloud platform module content is integrated into the professional core course.
"Windows operating system and application". Linux module content is integrated into "Linux Operating System and Application" Course. World Skills Competition-Information Network Cabling Project, Shanghai "Starlight Plan" Information Network Cabling Project and National Vocational College Skills Competition-Computer Network Application Project integrate wiring planning and design module content into the "network comprehensive wiring" course. Shanghai "Starlight Project" IoT technology application project is integrated into the "Internet of Things Technology Application" course.

The course-related instructors develop teaching standards, syllabuses, and training manuals based on student acceptance.

2. The Teaching Mode Introduces the Second-Class Activity

Organize players in the "1+1" skill training mode. A sophomore or third-year student will be assigned a skills training group with a first-year student. The students will be recommended by the competition's relevant teachers and will be assessed by the professional team. The competition determines the number of selected students in each session. Precisely, each project prepares a participating team. Together with the seniors who have the training experience, they will study and train together and cycle. This model not only maintains the relative stability of the group but also helps mutual learning. The “training camp” assigns responsible teachers according to different modules.

3. Study in Competition

Relying on the student associations to organize intra-school skills competitions, implement the "test-taking" and "credit-replacement" policies, and carry out long-term student skills competitions to promote academic style construction activities, and incorporate students to participate in skills competitions for a comprehensive evaluation of semester and evaluation of students' evaluation. The close integration of joining the party and recommending employment encourages students to form a good learning atmosphere [2].

This major utilizes the skills competition mechanism to effectively mobilize students' enthusiasm for learning and clarify learning motivation. With the 2016 seniors as the benchmark, the network majors are full of enthusiasm for the skill competition. In the eighth Shanghai "Starlight Program" vocational college skills competition, each class student actively registered according to personal expertise, network major participated in three competitions. Due to the popularity of the "Starlight Program", each project involves more than 20 students, as a motivation, the students' enthusiasm for learning is high, and often takes the initiative to self-study after 10 o'clock promotes the professional overall learning style. According to the class teacher, students majoring in the network are obsessed with the study of each subject, and most of the students continue to practice in the classroom after class.

The role of skills competition in promoting learning enables the students to stand out in the actual battle. In 2019 the National Vocational Skills Competition Shanghai trial-computer network application project, the professional team won second place and will participate in the national finals in June.

The skill competition can fully reflect the students' psychological quality, responsibility,
organizational discipline, communication skills, teamwork ability, lifelong learning ability, innovation awareness, and other professional qualities. The Skills Competition is the best training opportunity for students, and it can lay a good foundation for their lifelong learning, further study, and career [3].

4. Improve Teaching Goals

Relying on skills competitions, we should pay more attention to cultivating students' comprehensive practice, independent learning and teamwork ability, and improve students' psychological quality, professionalism, and innovation consciousness. Emphasis is placed on developing students' ability to apply comprehensive knowledge and techniques to solve comprehensive practical problems in a real professional environment.

5. Combine Skill Competition

Increase the depth and breadth of the content of the core curriculum of this major, and revise the talent training program, and move some core courses forward without affecting the relationship between the courses, and increase the proportion of the relevant courses.

6. Optimize Teaching Methods

The skills competition is based on a comprehensive project and focuses on the ability of students to use known theories and skills to solve practical problems. During the teaching process, the instructor can decompose the competition project and combine the single task-driven model with the comprehensive project teaching method to improve students' comprehensive practical ability [4].

7. Training Room Construction

According to the needs of the competition, the competition has continuously improved the construction of the integrated wiring training room, the network complete training room, and the IoT technology application training room, which not only enables the students to have an excellent competitive training environment but also provides updated versions and higher configuration training conditions for classroom teaching. These have laid a solid hardware foundation for the follow-up teaching reform.

8. Faculty Construction

Skills competition requires instructors to have a more comprehensive knowledge and richer practical experience. The process of teachers tutoring students is a process of rapid improvement of knowledge, skills, and experience. It is also the process of curriculum reform and the accumulation of ideas, so the skills competition can effectively promote the teachers' practical operation ability and skill level and promote the construction of the college's "double-type" teacher team. The Vocational Skills Competition is an open platform that provides teachers with an excellent opportunity to show, communicate, and experience. It can exchange professional construction and teaching experience with teachers in the colleges and universities and exchange teaching resources [5].
9. School-Enterprise Cooperation

During the competition, teachers can meet leaders, experts, and teachers in industry, enterprises, and other universities to provide new professional construction methods. Our school has now established an information security studio with the Shanghai Information Security Industry Association's support. The studio is mainly aimed at computer network technology, computer network technology (medium and high vocational education), and software technology students. Recruiting qualified students can participate in the information security network course free of charge, participate in real-life project actual drills, receive relevant skills competition guidance, obtain corresponding competency level certificates, and information security job internship employment recommendations. The studio's successful operation will ease the current situation of information security talents in the market and provide students with expanded professional direction, which is conducive to employment diversion and employment competitiveness [6].

Vocational skills competitions play an important role in vocational education. "General education has college entrance examinations. Vocational education has competitions", it will effectively enhance students' professional practice ability, promote professional curriculum teaching reform and the construction of teaching staff, while vigorously promoting the comprehensive development of the professional in school-enterprise cooperation and training room construction. Promote two-way benign interactions in skills competitions and skills training, improve the quality of skilled personnel training, promote Model Worker's spirit and Craftsman's spirit, and provide enterprises with the skills talents they need.

References