

The Role of Skills Competitions in Improving Professional Knowledge Learning in Vocational Education

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Abstract: A skills competition is an activity that showcases students' skills, practical ability, and innovation in the form of a competition. Skills competitions not only allow students to showcase their professional and practical skills but also cultivate their innovation skills and enhance their interest in learning. This paper reviews the research results of previous scholars and proposes that skills competitions play an important role in enhancing professional knowledge learning. The benefits of skills competition participation in learning are studied from four dimensions. Six targeted suggestions are then proposed to enhance the effectiveness of skills competition preparation. The research results of this paper can be used as a reference for the preparation of the skills competition.

Keywords: Skills competition; Teaching; Professional knowledge; Vocational education

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1. Introduction

Skills competition is an activity that improves the skills of participants in a specific field in the form of a competition. Skills competitions has been widely used method in various fields, especially in vocational education, vocational training, and other fields, and skills competitions are regarded as a very effective way of learning and training ^[1]. Through participating in the skills competition, the participants are exposed to practical and challenging tasks, which force them to actively analyze and solve problems. In order to obtain excellent results in the skills competitions, students would try to improve their professional knowledge during the preparation process and gradually improve their skills ^[2, 3]. During the competition, participants will also get to interact with other participants, and the interaction between students can help them further deepen their understanding of their expertise. For example, for automotive maintenance students, participating in the vehicle maintenance skills competition will be very beneficial. On one hand, it can help students understand the professional knowledge more deeply in practice, especially the mechanical structure of the vehicle and the functions of each equipment. On the other hand, the students can exercise their operational, communication, and teamwork skills ^[4].

As an effective way to improve students' vocational skills and practical abilities, skills competitions are highlighted by major vocational institutions. In this paper, we reviewed the research results of previous

scholars and propose that participation in skills competitions plays an important role in improving professional knowledge learning. Based on an in-depth analysis of the role of skills competition in enhancing learning, six targeted suggestions are put forward to enhance the efficiency of skills competition preparation. The research results of this paper can be helpful for the preparation of skills competition in vocational colleges.

2. Research status

Many studies have been done on skills competition. Qi ^[5] studied the effects of vocational skills competition on the improvement of students' hands-on skills. He considered it important to adjust teaching contents and reform teaching methods. Wan ^[6] analyzed the effect of vocational skills competition on the development of higher vocational education. He thinks that building a reasonable teaching system and changing teaching evaluation ideas help develop higher vocational education. Wang ^[7] believed that participation in skills competition improves the employability of students in higher education institutions. He found through practice and analysis that skills competition can enhance students' sense of teamwork. Liu ^[8] analyzed skills competitions on agricultural products quality and safety testing in vocational colleges and universities. He believed that the competitions on agricultural products quality and safety testing have an important role in improving the teaching agricultural products quality and safety testing. Zu ^[9] took electronics as an example and proposed the skills competition as an important model to test the comprehensive quality of electronics majors. The model improved students' hands-on ability while increasing their interest in the profession. Wang ^[10] studied the role of skills competition in enhancing the professional learning ability of secondary vocational students. He found that skills competitions are very helpful in developing students' learning ability and their future development. Li ^[11] used parts mapping and computer-aided design (CAD) drawing technology project competitions in secondary vocational schools as an example to discuss the improvement of teaching methods in schools. He argued that the creation of the component mapping and CAD project competition indicates that the teaching direction of the mechanical profession has changed. Therefore, it is necessary to explore the ways of integrating component mapping and CAD mapping technology projects into the curriculum. Wu ^[12] analyzed the role of skills competition in improving the metalworking internship curriculum in a school as an example. He argued that the skills competition could enhance students' understanding of the course content and their practical skills. Zhai ^[13] compared the clerical stenography competition of China with international shorthand contests. He argued that it is necessary to suggest the precautions and points of emphasis in the preparation of domestic contestants, and to explain the inspiration of the international shorthand contest for Chinese contestants and the significance of Chinese contestants' participation in the international shorthand contest. Wan ^[14] discussed the key technologies of the "modern electrical control system installation and commissioning" competitions. He put forward the application of tag programming and other methods for this competition and shared some coping strategies to achieve good results in the competition.

In summary, scholars have analyzed skills competitions from different perspectives, and have formed a consensus on the importance of skills competitions for the development of vocational education. Therefore, it is necessary to analyze the problems in skills competitions and propose targeted reform measures.

3. Effect of competition on learning

3.1. Deeper understanding of professional knowledge

Skills competitions are usually competitions for a specific occupation or skill, and participants are required to have certain professional knowledge and skills. Therefore, participating in skills competition can both allow students to have a deeper understanding and mastery of professional knowledge and allow them to

better understand the connection between theoretical knowledge and practical application. Through learning and training in competitions, students can better master their professional skills and improve their overall quality. For example, participating in robotics competitions can give students an in-depth understanding of mechanical design, control systems and electronics. For example, students can have a better understanding of architectural planning, structural design and construction techniques, etc through participating in architectural design competitions. Skills competitions allow participants to practice and apply their professional knowledge, and they can gain a deeper understanding of relevant knowledge.

3.2. Identifying and solving problems

In the skills competition, students need to complete tasks within a certain time frame and are required to think and act quickly, which puts high demands on their learning and operational abilities. In the process, students may encounter some problems and difficulties, which can prompt them to identify and solve problems in learning and enhance their independent learning and problem-solving skills. In the competition, participants can communicate and compete with people from different fields and backgrounds. Therefore, they can learn the strengths of others and understand their own weaknesses and improve them. This way of communication and learning can help participants to better grasp and apply their professional knowledge and thus continuously improve their skills.

3.3. Cultivating students' practical ability

Participating in skills competitions not only improves students' theoretical knowledge, but also promotes their practical skills. By participating in the competition, students can perform practical operations, exercise their practical abilities, improve their operational skills and improve their professional quality. The topics and assessment methods of the competitions are usually related to actual working scenarios. Participants are required to design, operate, or solve problems according to the requirements of the topic within a certain time limit. This simulated environment allows participants to better understand the application of their professional knowledge in reality, and their knowledge can be further consolidated through practice.

3.4. Enhancing students' self-confidence

Students can have a better understanding of their abilities and potential and boost their self-confidence through participating in skills competitions. The winners of the competitions usually receive certain awards or honorary titles. These titles not only create a sense of achievement and pride among the participants, but also set a learning goal for them to pursue excellence and continuous improvement. A skills competition is a highly professional and competitive process for the students. Therefore, it can make the students more competitive and stimulate their enthusiasm and motivation to learn.

In conclusion, skills competitions play an important role in enhancing the learning professional knowledge, promotes the improvement of students' overall quality, and lays a solid foundation for their career development.

4. Specific suggestions

4.1. Develop a reasonable preparation plan for the competition

Vocational institutions should help students to make a reasonable preparation plan according to the duration and requirements of the competition, including lesson contents and schedule, and practical exercises, to ensure that students are prepared for the competition. At the same time, teachers should also help students develop preparation strategies according to the content and scoring criteria of the competition. Teachers can establish a practice group to help students communicate and learn from each other and share relevant experience and skills. Through this practice group, students can encourage and supervise each other, thus

improving the efficiency and results of preparation.

4.2. Multi-channel access to preparation materials

During the preparation process, students can obtain competition-related information through various channels such as the Internet, books, and professional publications to gain a deeper understanding of the competition. Students can also refer to the questions and scoring standards of previous competitions to better understand the requirements and evaluation criteria of the competition. While preparing for a competition, students should also focus on strengthening their basic knowledge so as to ensure their skill level meets the requirements of the competition.

4.3. Focus on practical operations

For projects that require practical operation, students must be fully prepared. Students should master the use of various tools and equipment and perform several practical operations to improve their operating skills and proficiency. For example, if students are participating in a competition related to cooking, they can practice chopping and cooking skills in the preparation process; if students are participating in an electronic technology competition, they should familiarize themselves with electronic circuit design, soldering and other related knowledge. For complex competition items, students should undergo vigorous training. During training, students should observe and identify problems and make timely reflection and focus on practical results in order to achieve the best results.

4.4. Participating in more simulation exercises

During the preparation period, students must attend more simulation exercises organized by their schools or professional associations. By simulating the real competition environment, students have a better idea of the actual competition. During the simulation exercises, students can discover their shortcomings and improve them in time. Participants should communicate with their teachers and classmates more frequently to obtain more suggestions and opinions and share their insights and experiences to others. Through repeated simulation practice of competition items, their theoretical knowledge and improved their practical operation skills can be improved, laying a solid foundation for participation.

4.5. Cultivating a good mindset

Competitions are not only a battle of strength, but also a competition of psychological quality between competitors. Students should have a positive and optimistic attitude and be patient and determined to improve on their shortcomings, while also having enough rest to maintain their physical and mental health. Teachers should always pay attention to students' psychological changes, such as lack of confidence, burnout, stage fright, and nervousness. Teachers should guide students who are facing these problems. Students can also maintain a good mental state through self-motivation and psychological adjustment to meet the competition with a healthy mind.

4.6. Seeking professional guidance

Students can seek guidance and advice from teachers or industry experts to gain inspiration and learn from their experience to help them better prepare for the competition. Schools can also invite students who have won awards in previous years to provide more targeted guidance to the contestants. Students can ask them about the skills needed and their experience in competitions. Students can also ask previous winners to guide them in their problems and shortcomings, thus promoting further improvement of students' skills in the competition.

In conclusion, skills competition in vocational colleges requires adequate preparation, focusing on

practical operations and attending more simulation exercises, as well as maintaining a good mindset and seeking professional guidance.

5. Results

In conclusion, skills competition is a great way of improving students' professional knowledge learning. Through skills competition, participants can be exposed to practical problems and challenges to improve their skills. On the other hand, they will also be more motivated in self-learning and further deepening their understanding and mastery of professional knowledge. Skills competitions have become a very popular way to learn and train, and it can provide better learning and development opportunities for people from all walks of life. Teachers in vocational colleges should guide more students to participate in skill competitions.

6. Conclusions

Participating in skills competitions is of great importance to students in vocational institutions. It can help students better adapt to their future careers, improve their competitiveness and professional qualities, as well as enhance the reputation of the school. Participating in skills competition can help students in vocational colleges to better master the skills they learn, enhance their self-confidence and teamwork skills, and also lay a more solid foundation for future employment. In order to help students better prepare for the competition, we summarized the research status of previous scholars and analyzed the challenges faced in current skill competitions in vocational colleges. Finally, we proposed six targeted suggestions, which can act as a reference for leaders of skills competition in vocational colleges.

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Author contributions

S.W. and M.L conceived the idea of the study and wrote the first draft of the article. F.P. revised the format of the paper.

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