

The Training Methods of Innovative Talents in Oil and Gas Storage and Transportation Major in Higher Vocational Colleges

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Abstract: The goal of the revision of the talent training program in higher vocational colleges is to meet the needs of the society and embody the characteristics of higher vocational colleges. In order to meet the current social demand for high-quality oil and gas storage and transportation professionals, all vocational colleges are reforming teaching methods and developing innovative training mode for oil and gas storage and transportation professionals. This paper discusses the personnel training objectives of oil and gas storage and transportation major in higher vocational colleges. First of all, this paper analyzes the disadvantages of the current talent training program of oil and gas storage and transportation specialty in higher vocational colleges, and constructs the guiding principle of the talent training mode of oil and gas storage and transportation specialty, which focuses on the cultivation of students' professional innovation ability. It puts forward the training methods of implementing this strategy on this basis, including reforming the curriculum system, attaching importance to the construction of practical training, strengthening practical teaching, and improving the evaluation system of students' ability, so as to achieve the goal of talent training with scientific orientation.

1. Introduction

With the development of China's economy and the improvement of people's living standards, enterprises put forward higher requirements for the cultivation of high skilled talents, which means the construction of higher vocational education is imperative [1]. As an important part of China's education, higher vocational education shoulders the task of popularizing higher education in China, and trains a large number of technical and applied talents for the society every year [2]. Wu [3] discusses the necessary steps to start the reform of vocational education, puts forward a training strategy based on students and centered on industrial vocational ability, establishes the educational goal of optimizing students' innovation and entrepreneurship ability and the teaching mode of "in school education factory". The current education mode and personnel training program adopted in mainland China is the key link of the personnel training mode, which is directly related to the success or failure of the reform and the quality of personnel training. Based on the analysis of the establishment of civil engineering application-oriented personnel training system, Yong [4] has studied the key issues such as training objectives, training specifications, credits and curriculum

system, so as to maximize the role of local undergraduate colleges and higher vocational colleges in personnel training. Through the questionnaire survey on the corresponding reform of teaching content, methods, means, assessment methods and the effect of tracking training courses of the existing talent training mode, Xu [5] explored the vocational education of pharmacology training mode to adapt to the new situation, so as to meet the needs of high-quality technical talents in the new situation. According to the requirements of the training objectives of community pharmaceutical service personnel in higher vocational colleges, Qin [6] has carried out teaching reform in terms of personnel training mode, curriculum structure system, training base construction, teaching methods, etc. The cultivation of College Students' innovation ability is one of the important problems in modern education.

This paper expounds the basic composition of the development of innovation ability, the level of the development of college students' innovation ability and the teaching conditions [7]. Universities around the world are increasingly trying to become more entrepreneurial to stay competitive and create new sources of income through licensing or contract research [8]. Researchers and stakeholders of entrepreneurship education have had a long-term impact on whether entrepreneurship education programs really affect participants' entrepreneurship. They believe that when the previous entrepreneurial risk exposure is weak or does not exist, the positive role of entrepreneurship education is more significant [9]. Schmitz [10] discusses the organizational style, main terms and definitions, theoretical framework and empirical model in the field of innovation and entrepreneurship in the academic context to guide future research.

Combined with the current problems in the training of oil and gas storage and transportation professionals in this paper, we have carried out active exploration and optimization in the training of professional talents. Based on the characteristics of oil and gas storage and transportation specialty, this paper explores the construction of a variety of collaborative personnel training system under the background of innovative education, so as to provide reference for the personnel training of oil and gas storage and transportation specialty in higher vocational colleges.

2. Method

2.1 Problems in the current talent training program of oil and gas storage and transportation in higher vocational colleges

At present, China is speeding up the construction of the belt and road, and the demand for oil and gas storage and transportation professionals is very urgent. There are about 20 universities in China have opened oil and gas storage and transportation majors. As a major of oil and gas storage and transportation in higher vocational colleges, the main purpose is to cultivate higher skilled talents. Therefore, we should focus on the characteristics of our school and combine the principle of student-oriented when formulating talent training programs. The following problems exist in the personnel training of oil and gas storage and transportation major in higher vocational colleges presently.

1) The talent training objectives and characteristics of the oil and gas storage and transportation specialty are not clear, and the talent training program focuses on theory rather than practice. The orientation of training high skilled talents is not clear and the training mode of talents is not prominent, which cannot cultivate innovative talents to meet the requirements of economic and social development.

2) The overall course structure system of oil and gas storage and transportation specialty is incomplete, the innovative courses offered lack of sense of hierarchy, and the courses are mostly in the form of elective courses, which can only meet the needs of some students' course selection, which is not conducive to improving the teaching quality of the specialty and realizing the optimization and reform of the education and teaching system.

3) The current teaching content and curriculum setting of oil and gas storage and transportation

specialty are out of line with the requirements of oil and gas industry for technical talents, just the training content and objectives of innovative talents are inserted into some teaching projects. The innovation and entrepreneurship curriculum has not formed a perfect curriculum system, and the combination of production and learning is weak.

4) Many higher vocational colleges are still in the exploratory stage for the cultivation of innovative talents. For the major of oil and gas storage and transportation, they have not fully developed and utilized the practical resources and projects of related industries, and they have not paid attention to the practice and practice education of students. The practice program and Practice of the major still need to be optimized and adjusted.

2.2 connotation of innovative personnel training of oil and gas storage and Transportation Specialty

With the development of economic globalization and information technology, deepening the reform of innovation education is an urgent need for our country to implement the strategy of innovation driven development and promote the upgrading of economic quality and efficiency. To cultivate innovative and entrepreneurial talents, we should also cultivate students' innovative consciousness, spirit and ability, which can play a continuous role in the future career development of higher vocational college students. The so-called innovative education and practice is an important link and effective way to cultivate students' innovative consciousness and spirit. In order to meet the development of the times and social needs, vocational colleges have begun to implement innovative training mode and reform the corresponding teaching methods. The main problem faced by the cultivation of innovative talents in higher vocational colleges is how to combine the innovative education with the cultivation of application-oriented talents, and finally realize the students' innovative consciousness and ability, and organically combine them with the students' practical operation ability to form professional characteristics.

The major of oil and gas storage and transportation is an interdisciplinary technical subject which studies the storage, transportation and management of oil and gas. Facing the development opportunities of the belt and road initiative in China, vocational colleges have gradually accelerated the training of professional and practical abilities of gasoline storage and transportation professionals. The focus of this paper is need to integrate innovation and entrepreneurship courses into professional talent training programs and integrate innovation education with professional education and to further promote the organic combination of innovation education and talent training in this major, and effectively improve the quality of innovation education and talent training. Talents are one of the core elements to drive innovation and development. The cultivation of talents for oil and gas storage and transportation in higher vocational colleges should pay attention to the cultivation of students' practical ability and practical ability. Higher vocational colleges should make full use of the employment advantages of the oil and gas storage and transportation specialty when formulating professional talent training programs, and strengthen cooperation with cooperative enterprises to explore innovative talent training programs. Based on the premise of fully considering the needs of students' career to determine the professional curriculum and curriculum structure, the innovative talent training program should determine the relevant professional curriculum content, teaching methods, internship training program and internship program based on the characteristics of the professional position. The students have stronger application and innovation ability finally.

3. Design Principles of Personnel Training Mode for Oil and Gas Storage and Transportation Specialty under the Background of Innovation

With the in-depth development of oil and gas reserve discipline, the talent training plan of students should also keep pace with the times. In order to improve the teaching quality and overall quality education, higher vocational colleges should constantly optimize the professional talent

training program. The talent training program must have a reasonable target orientation for the professional characteristics, make full use of the employment advantages of the oil and gas storage and transportation specialty, and promote the innovative talent training mode. The main principles of talent training are as follows:

1) scientific positioning of talent training objectives based on professional characteristics

The goal of personnel training for oil and gas reserve specialty in higher vocational colleges should be oil and gas reserve talents with strong practical application ability and practical ability. The talent training plan makes full use of the employment advantages of the oil and gas storage and transportation specialty, and promotes the training mode of alternating engineering and learning so that students can quickly adapt to job needs and solve practical problems.

2) develop students' main ability to cultivate students' innovation consciousness fully

Cultivating talents with innovation consciousness is to develop the main ability of students. Higher vocational colleges should combine the characteristics of students to stimulate their innovation consciousness and train their basic innovation ability. Encouraging students to use innovation bases to form teams and conduct innovative practical training. Students can form the student teams under the guidance of cooperative enterprises and school mentors while they are in school, which can make full use of the resources of cooperative enterprises, conduct in-depth innovation exploration and research, and cultivate students' basic innovation abilities.

3) the goal of professional curriculum is to meet the development of professional disciplines

Integrate the curriculum, update the teaching content and teaching methods, and appropriately adjust and modify some courses in line with the development of the oil and gas industry, construct a project-oriented, layered and progressive professional teaching system, and innovate the concept of entrepreneurship education so that the professional knowledge system can better meet the development requirements of the discipline.

4) promote school enterprise cooperation to promote the combination of production and learning

Higher vocational colleges should understand the actual needs of the oil and gas industry and discuss scientific talent training programs with partner companies, actively explore various types of oil and gas companies, and establish and maintain stable cooperative relationships with them to jointly develop students' e-commerce practices. The project also actively realizes the combination of production and education to jointly determine talent training programs, curriculum content and internship training projects.

5) pay attention to the construction of training base and strengthen practical teaching

The characteristics of oil and gas storage and transportation specialty and social demand orientation determine that the process of talent training should pay attention to practical teaching links. The training process of innovative talents in oil and gas storage and transportation specialty must pay attention to the practical teaching link, and establish a practical teaching base closely linked with the enterprise and society.

4. Personnel Training System Design of Oil and Gas Storage and Transportation Specialty in Higher Vocational Colleges Based on Innovative Education Background

Guided by strengthening students' innovation ability, this paper designs an innovation mechanism and talent training mode based on oil and gas storage and transportation specialty. That is to say, training students' awareness of innovation and competition based on competition; training students' innovation ability based on practice and employment guidance, integrating the concept of innovation and entrepreneurship education into the talent training of oil and gas storage and transportation specialty, and building and improving the three-tier system talent training structure of "Teaching-Skills Practice- Actual Combat" for the innovative talent training of oil and gas storage and transportation specialty, which is shown as figure 1. To enhance students' innovative thinking and potential.

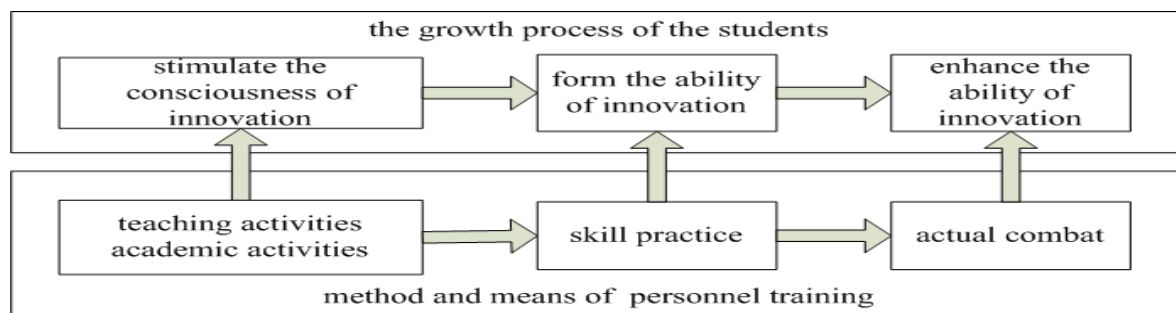


Figure1 Training mode of innovative talents

4.1 Build a teaching practice system for training innovative talents

The following teaching practice system is formed in Figure 1 based on the innovative talent training mechanism of oil and gas storage and transportation specialty:

- 1) enhance students' ability to innovate through projects and competitions

Professional teachers should lead students to carry out various practical activities and urge students to actively participate in project practice and professional skills competition.

- 2) establish the training of innovation ability based on the two-level training mechanism of “school and major”

Higher vocational colleges should combine the theoretical guidance and orientation of teaching reform, and focus on the cultivation mode of innovative talents. The major should optimize the curriculum system and curriculum to meet the market demand.

- 3) improve the evaluation system of innovative personnel training,

The basic requirement for the cultivation of vocational college students is to improve the practical operation ability of students with learning as the center presently. Therefore, it is particularly important to establish and improve the evaluation system of students' comprehensive ability. Combine the evaluation of teaching effect with the improvement of students' ability, reasonably set up diversified evaluation system and evaluation mechanism to evaluate students' comprehensive ability, so as to stimulate students' innovation awareness and practical application ability. Increase the proportion of operation and practice scores in the total scores in normal time appropriately to make the knowledge learned more comprehensive and practical, which is shown as

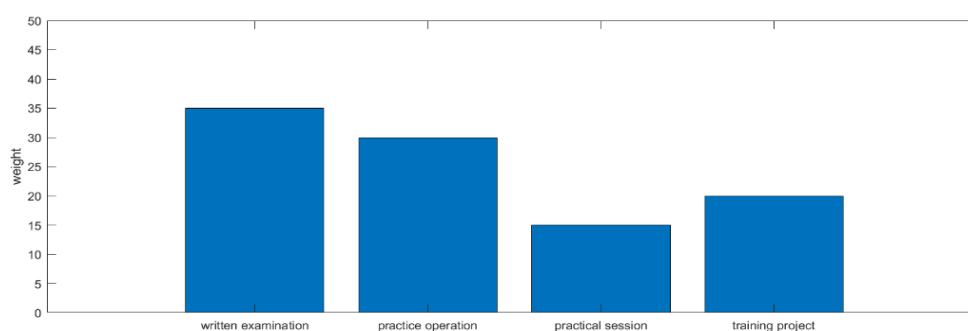


figure 2.

Figure 2 proportion of students' assessment system

4.2 Practice results

On the basis of this talent training system structure, the oil and gas storage and transportation major trained by a vocational college organizes students to participate in innovation and entrepreneurship skills competitions in order to master the relevant knowledge and skills required

for the innovation of this profession. The students applied for and were approved for 11 innovation and entrepreneurship projects in 2017-2018, 2 of which were concluded with outstanding results. Among the teachers participating in this teaching practice research work, 1 instructed the students to win the second prize of the 2018 Vocational College Skills Competition 1 item. Many students have won the "Technical Innovation Competition of Higher Vocational Colleges", which is shown as table1 . This paper has found that by guiding students to participate, they cannot only improve students' ability to innovate and start business, but also test the training effect of oil and gas storage and transportation professionals. Organically combine the school's innovation and entrepreneurship education with vocational skills competitions to consolidate and improve students' ability to innovate and entrepreneurship.

Table 1 index system of university innovation education

project name	winner	the number of projects
The innovation and Entrepreneurship Projects of the college	students	11
The Skills competition of Higher Vocational Colleges	students	4
	teacher	1
professional skills competition	students	3
Technical innovation competition of Higher Vocational Colleges	Students	5

5.Conclusion

Under the premise of precise education, higher vocational colleges need to implement the training of innovative vocational and technical talents. Based on the existing problems and reasons in talent cultivation in higher vocational colleges, this article aims to improve the training of innovative talents in higher vocational colleges. The education model further promotes the reform and development of innovative talent training programs. This paper provides a reference for the personnel training programs for oil and gas storage and transportation majors in other vocational colleges through continuous innovation, optimization, and reform of the personnel training program for oil and gas storage and transportation majors, and allowing students to undergo internship practice tests. Through the application of this innovative talent training program, this paper finds that under this talent training system, teachers and students compete to participate in various types of competitions and receive multiple innovation awards at different levels. It shows that in this talent training program, students can finally realize the spirit of innovation, innovation awareness and innovation ability in the process of cultivating innovative talents, promote the organic integration of oil and gas storage professional education and university students' creative education, and solve the current vocational oil and gas storage and transportation specialty. This training program can solve the major bottlenecks in the cultivation of innovative talents in the oil and gas storage and transportation specialty of higher vocational colleges, and drive college students to apply their knowledge through innovation.

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