Discussion on the Popularization and Application Mode of TRIZ Technology Innovation Method in Higher Vocational Colleges

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Abstract: In this new era of rapid development of science and technology, it is the embodiment and guarantee of China’s comprehensive strength to strive to create an innovative country, in which the cultivation of innovative talents plays an important role. Higher vocational colleges bear the responsibility and obligation of transporting high-quality talents for the country and society. The popularization and application of TRIZ technology innovation method in higher vocational colleges can have a good guiding role for the cultivation of students’ innovation ability and consciousness. This paper makes a simple analysis of the concept of TRIZ technology innovation method and its popularization significance, and then puts forward suggestions on the popularization and application of TRIZ technology innovation method in higher vocational colleges according to different aspects, aiming at promoting the cultivation of innovative talents in higher vocational colleges.

Keywords: TRIZ technology innovation method; Higher vocational colleges; Innovation consciousness; Application mode

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In October 18th, 2017, comrade Xi Jinping pointed out in the nineteen major reports that the construction of an innovative country should be accelerated. We should aim at the forefront of science and technology in the world, strengthen basic research, achieve forward-looking basic research and lead major breakthroughs in original achievements. With the establishment of an innovative country as China’s basic strategy, independent innovation has become the strategic basis for the development of science and technology in China. All walks of life begin to put forward higher requirements for high-quality talents, and colleges and universities also begin to attach importance to the cultivation of innovative talents.

At present, TRIZ technology innovation method has not been introduced into our country for a long time. Relevant scholars and education circles in our country are still in the stage of theoretical study and familiarity with TRIZ technology innovation method. However, in order to improve the quality of personnel training in higher vocational colleges, it is of great significance to actively promote the application of TRIZ technology innovation method in higher vocational colleges.

1. The Concept of TRIZ Technology Innovation Method

TRIZ means to invent the problem-solving theory. It is a problem-solving theory founded by a former Soviet scientist (GenrichAchschuler), also known as “wisdom theory”, and is the most representative innovation. Through the analysis of human high-level invention patents, he summarized the law of the development process of technological systems and formed a systematic methodology system, aiming at guiding people to innovate and solve engineering problems. With China’s entering a new stage of development, industrial upgrading and economic restructuring are accelerating. TRIZ, on the other hand, is a knowledge-based and human-oriented systematic methodology for solving inventive problems. In the final analysis, the purpose of learning TRIZ is to improve the ability to solve problems. However, this can be not only a technical problem, a management problem, but also a special problem existing in some societies. Through the study and application of TRIZ theory, we can greatly reduce the research and development process of science and technology, improve the level of technological innovation, and promote the development and progress of China from an innovative country.
2. The Significance of the Promotion of TRIZ Technology Innovation Method in Higher Vocational Colleges

In this era of economic globalization, scientific and technological innovation has become the core and key to the competition of the country’s comprehensive national strength. With the State Council issuing the "Implementation Plan of National Vocational Education Reform", the differences between vocational education and general education have been mentioned, and it has also been pointed out that the main educational goal of vocational education is to provide strong talents and intellectual support for China’s economic and social development. Therefore, with China’s entering a new stage of development, all walks of life need to achieve their own innovation and development. At the same time, enterprises also need more and more skilled personnel. Under such circumstances, in order to improve the training quality of their own talents and undertake the historical responsibility of training national skilled talents, higher vocational colleges need to pay more attention to the cultivation of talents’ innovative consciousness and ability.

Nowadays, innovation has become an inexhaustible driving force in the field of manufacturing. Countries all over the world attach importance to the development of science and technology, as well as the innovation and progress of technology. Therefore, the significance of learning TRIZ proposes to improve one’s innovative thinking ability and the ability to quickly solve difficult problems in work and life. The key to cultivating innovative scientific and technological talents lies in the cultivation of basic independent innovation consciousness and independent innovation ability for professional talents. Promoting the study of TRIZ innovative methods in higher vocational colleges can play a great role in students’ participation in innovative methods competitions, application of scientific research projects, professional and patent research and other activities. In order to meet the urgent needs of the society and enterprises in the new era, higher vocational colleges attach great importance to the cultivation of innovative talents. As the main organization of cultivating and transporting talents, higher vocational colleges are the main position of cultivating innovative talents, and the large numbers of students they contain are the main components of scientific and technological innovative talents. They should conform to the trend of the times in training high-quality talents. They should conform to the trend of the times in training high-quality talents. Through the combination of TRIZ technology innovation methods in the teaching field, the goal of improving and cultivating students’ innovative thinking and innovative skills can also be realized, which has certain practical significance for comprehensively promoting quality education and promoting social development.
3. Suggestions on the Popularization and Application of TRIZ Technology Innovation Methods in Higher Vocational Colleges

(1) Multi-channel Promotion of TRIZ Technology Innovation Methods

In order to realize the application of TRIZ technology innovation method in higher vocational colleges, we should first actively improve students and teachers’ understanding of TRIZ technology. Higher vocational colleges can organize some research associations that are mainly learning TRIZ technology innovation methods through the colleges and sub classes. Through various media channels in schools, such as WeChat official account, micro-blog, radio and other forms, introduce TRIZ technology innovation methods to teachers and students, so as to achieve the absorption of students and teachers who are interested in learning and understanding. Establish associations and organizations to realize the small and fine size of the overall team ensure the learning efficiency and quality of the teachers and students covered, and laid a solid foundation for expanding the size and number of the team.

In addition, higher vocational colleges can regularly organize seminars and lectures on TRIZ technology innovation methods. By inviting some research scholars or senior experts in the field of innovative methods to give special lectures, share new discoveries in the field, and share some case experience of combining TRIZ technology innovation methods with practice, so as to let all teachers and students to have a basic understanding of TRIZ technology innovation methods and learn the latest TRIZ theoretical knowledge, thus realizing continuous improvement of TRIZ cognition. In this process, students can also be encouraged to discuss and communicate with each other, so that students can share their feelings about what they hear, and promote their thinking collision. Or they dare to ask questions about the knowledge points they don’t understand. After the help of teachers or scholars, to solve doubts, you can have a profound and accurate understanding of relevant knowledge, which can also enable generate to come up with a new understanding and comprehension, making students “reasonable to follow” in the subsequent scientific research period, and better realize the innovation and progress of scientific and technological research.

(2) Combining TRIZ Technology Innovation Methods to Promote Teaching Mode Reform

With the continuous integration of TRIZ technology and education, many related curriculum arrangements and training contents have also been born in major higher vocational colleges. At this time, not only students need to improve the application awareness of TRIZ technology innovation method, but also the school should reform and develop the relevant teaching mode reform. Schools should take
the lead in the training of teachers, let teachers have the opportunity to selectively participate in the relevant knowledge training of TRIZ technological innovation methods, and encourage teachers to obtain relevant certificates of TRIZ technological innovation methods, thus providing students with better teaching content arrangement schemes and enabling students to understand and master by going up one flight of stairs about TRIZ technological innovation methods.

In addition, in order to improve teachers and students’ attention to TRIZ technology innovation method learning, schools should arrange certain credit rewards for the course study of TRIZ technological innovation methods according to the training plan, so as to enrich their theoretical knowledge, so as to encourage students to pay more attention to TRIZ technology innovation method learning. Finally, in the teaching process, teachers should focus on the cultivation of students’ innovative technology and consciousness, further promote the cultivation of relevant theoretical systems, and improve the teaching mode of TRIZ technology innovation methods with all kinds of excellent resources. The modern teaching concept and TRIZ technology innovation method are organically integrated to create a diversified and multi-dimensional teaching mode to help students develop their thinking and learn to analyze and solve problems from an innovative perspective.

(3) Using TRIZ Technology Innovation Method to Improve Students’ Innovation Practice Level

The development of innovation ability is to accumulate experience through practice. In order to better improve the application level of students for TRIZ technology innovation method, higher vocational colleges can regularly hold TRIZ innovation method competition within the scope of the college according to their actual situation, so that students can actively participate in the form of individual or team, constantly learn new knowledge in the process of competition, and enrich their practical experience through mistakes and practical operation. By participating in the competition, students can deepen their understanding and learning of TRIZ’s technological innovation methods, realize their own knowledge system and skills and technologies, promote teaching through competition, promote learning through competition, and combine competition with learning, so as to comprehensively improve students’ professional ability and innovation ability.

The talents trained in higher vocational colleges are mainly to improve the application of professional knowledge and skills. Therefore, schools can fully mobilize personal connections to realize school-enterprise linkage, extend TRIZ technological innovation methods to enterprises, so that students can feel the actual benefits and advantages brought by TRIZ technological innovation methods in ac-
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tual jobs, thus speeding up and increasing the application of innovative methods and realizing the ultimate goal of applying TRIZ technological innovation methods.

4. Summary

TRIZ technology innovation method plays an important role in guiding the cultivation of innovative talents in higher vocational colleges. How to further improve the innovative consciousness and ability of students in Higher Vocational Colleges and lay a solid foundation for scientific research and innovation is a research hotspot in the development and reform of higher vocational colleges. Through the multi-channel promotion of the application of TRIZ technology innovation method in higher vocational colleges, it can better help teachers and students understand the TRIZ technology innovation method, so as to increase the opportunities for students and teachers to transform the theoretical knowledge of TRIZ technology innovation into practical operation experience, which provides a good theoretical basis for the cultivation of innovative talents.

Works Cited