Education Reform and Development, 2024, Volume 6, Issue 8
https://ojs.bbwpublisher.com/index.php/ERD
Online ISSN: 2652-5372
Print ISSN: 2652-5364

Research on the Training Model of Internationalized Applied Talents in New Engineering

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Abstract: One of the core elements of the New Engineering reform is exploring a new talent cultivation model. Based on this, the author will start from the three elements of talent cultivation mode: talent cultivation goals, talent cultivation process and talent cultivation quality evaluation. From the perspective of New Engineering disciplines, this paper provides a detailed analysis of the construction process of the current training model for international applied talents in universities, explores the path of engineering education reform and hopes to provide more international New Engineering applied talents for the development of China.

Keywords: New Engineering; Internationally applied talents; Talent training mode

Online publication: August 22, 2024

1. Introduction

To promote innovation-driven development, a new economic model represented by new technologies, new formats, new models and new industries has emerged, which also puts higher requirements on the training of engineering and technology professionals. Therefore, universities should accelerate the innovation and reform of engineering education, providing a solid theoretical foundation for cultivating international applied talents. However, due to the unstable development of many universities, they are hesitant to actively innovate, resulting in a more serious homogenization of the development process. Based on this, universities should take the "New Engineering" as an opportunity to build an international application-oriented talent training model unique to their universities. While meeting students' learning and development needs, it also enhances the industry competitiveness of universities themselves [1].

2. The ability requirements for applied talents in New Engineering

2.1. Having international competitiveness

To enhance the international competitiveness of engineering education in China, educators need to start from

the forefront of engineering education reform, carry out international exchanges and cooperation in engineering education, and improve the international literacy of relevant professional talents. Therefore, in the context of the New Engineering discipline, universities should strengthen the cultivation of international perspectives for professional talents in teaching. In addition, in the construction of a professional knowledge system, it is necessary to ensure that relevant talents have sufficient professional knowledge reserves, as well as international academic knowledge reserves closely related to their profession, to ensure that they can think from a scientific and rational perspective in complex and changing international situations, and comprehensively promote the transformation and upgrading of China's traditional engineering industry. Finally, from the perspective of capability structure, relevant professional talents should possess certain cross-cultural communication abilities, be familiar with various implementation standards in the international industry, and ensure that they can have stronger competitiveness in international development [2].

2.2. Possess interdisciplinary integration ability

From the perspective of New Engineering disciplines, universities should use international engineering education standards as the training standards for applied professional talents, ensuring that the development of teaching work can cultivate professionally applied talents with a certain innovative spirit and strong practical ability. At the same time, it is necessary to enhance the interdisciplinary integration ability of professional talents. By leveraging the educational value of general education, universities ensure that the high-quality composite talents cultivated can meet the current needs of industrial development in China [3].

2.3. Capable of sustainable learning

Sustainable learning ability is a concept that corresponds to passive learning. With the support of sustainable learning ability, students can engage in independent and autonomous learning in daily life. Through problem analysis and exploration, students can deepen their understanding of professional knowledge and continuously improve their professional skills. In the context of the New Engineering discipline, the cultivation process of professional talents needs to highlight the cultivation of students' sustainable learning ability to ensure that professional talents can better face various cutting-edge technologies of continuous innovation in future work and meet the sustainable development needs of students [4].

3. The problems in cultivating applied talents in New Engineering disciplines from an international perspective

3.1. Lack of international educational philosophy

From the perspective of the New Engineering discipline, the cultivation of professional talents in universities should be mainly aimed at internationalized applied talents, and combined with the local industrial development needs of different regions, fine adjustments should be made to talent cultivation work. Through school-enterprise cooperation and the support of the concept of industry education integration, it is ensured that the cultivation of professional talents in universities can meet the needs of local economic development and improve the employment opportunities of students. In recent years, with the reform and development of New Engineering disciplines, higher requirements have been put forward for the training quality of related professional talents. By introducing a large number of high-quality international teaching resources and collaborating with foreign schools, a new path has been opened up for the development of international talent cultivation, and a preliminary pattern of international education has also been formed in China [5].

3.2. Low quality of international teaching staff

As the foundation of teaching work, the professional competence of teachers is directly related to the ultimate effect of teaching work. From the perspective of international talent cultivation, teachers, as creators of international courses, should play a positive role in building international exchange platforms and leading the implementation of international education projects. However, the internationalization literacy of university teachers is currently influenced by various factors such as policy orientation and campus culture, as well as their academic background and cross-cultural communication abilities. Therefore, most universities lack a faculty team with an international perspective and background. At present, there is a lack of teachers with overseas academic experience in the teaching team of Chinese universities, and many universities have a relatively shallow understanding of the construction of international teaching staff, believing that only overseas talents with relevant majors need to be introduced. This leads to the fact that although the introduced teacher team cannot effectively integrate with the current situation of higher education in China, the talent training plan formulated cannot meet the actual development needs of Chinese university students [6].

3.3. The international training system is not perfect enough

The imperfect international training system is mainly reflected in the following aspects.

(1) Many universities in China currently do not attach enough importance to foreign language teaching and have low requirements for foreign language learning, resulting in most students lacking corresponding cross-lingual communication skills and being unable to meet the needs of international talent cultivation;

(2) Many universities currently focus more on imparting professional knowledge in talent cultivation, lacking in cultivating students' ability to analyze international affairs, making it difficult for them to develop international thinking.

(3) Many universities have not established an international curriculum system that is in line with international industry standards, and their teaching is still mainly based on domestic teaching resources, lacking international teaching materials. Therefore, it is difficult to meet the training requirements for international applied talents in the current "New Engineering" strategy [7].

4. Analysis of strategies for cultivating internationally applied talents in "New Engineering"

4.1. Clarify talent development goals

Clarifying the training objectives is the primary link in designing talent cultivation models in universities, playing a guiding role in talent cultivation work. According to the requirements of the New Engineering discipline, universities should establish awareness of international talent cultivation and formulate scientifically effective strategies for it.

4.1.1. Application-oriented

The cultivation of applied professional talents emphasizes the strengthening of students' ability to apply subject knowledge. According to the relationship between education and industry, the cultivation of professional talents in universities should strictly follow the development needs of the industry, with improving students' professional knowledge application ability as the core direction, ensuring that students can have comprehensive abilities in independent design, planning, implementation, management and other aspects after learning.

4.1.2. Composite-type

The cultivation of New Engineering professionals aims to achieve the goal of cultivating versatile talents through the integration of interdisciplinary knowledge and skills such as science, humanities, engineering and management.

With the continuous development of new technologies, industries and models, new occupational forms have emerged in the social field. Analyzing these emerging professions from the perspective of disciplinary knowledge, it is found that the abilities possessed by these new professions generally include multiple disciplinary categories. From this, it can be seen that as an international applied talent, it is necessary to diversify one's knowledge structure, including professional knowledge application ability, professional skills operation ability and team collaboration ability. Regarding knowledge application ability, emphasis is placed on cultivating students' ability to discover, analyze and solve problems. In terms of professional skills and operational abilities, it includes equipment operation ability and on-site service ability in actual production. Team collaboration includes communication and coordination skills with team members [8].

4.1.3. Innovative

The essence of innovation is the organic combination of innovation consciousness and innovation ability. Therefore, the cultivation of innovative talents is an essential aspect. Engineers will face more complex and ever-changing on-site conditions in real work scenarios. Therefore, engineers on site not only need to find the problem quickly but also need to provide accurate solutions in a timely manner. During this period, it tests their innovative consciousness and ability. The cultivation of innovative talents is to ensure that in the process of production and construction, problems can be accurately and timely optimized and improved, which is the core requirement of innovation [9].

4.2. Refine the process of talent cultivation

The process of talent cultivation is the core of the talent cultivation model, which includes two levels: cultivation pathways and cultivation methods. It is necessary to choose based on the direction of talent cultivation.

4.2.1. Emphasize interdisciplinary approaches in professional settings

The professional setting is the starting point of talent cultivation work. The cultivation of applied talents determines that "application" should be the core idea of professional construction. With the emergence of new industries and technologies, many fields have encountered situations where a single disciplinary knowledge cannot solve related problems. In this context, the training of engineers should break away from the traditional situation where a single subject is the main teaching content and improve the interdisciplinary nature of the profession by integrating subject knowledge with current advanced industry technologies [10].

4.2.2. Comprehensive presentation of course construction

Curriculum is the main carrier of talent cultivation in universities. Therefore, the effectiveness of curriculum construction will directly impact the effectiveness of talent cultivation. On-site engineers who are on the front line of projects will face various unexpected problems. Therefore, the professional knowledge it possesses must be comprehensive. Firstly, the construction of professional courses should cover both universities and enterprises, ensuring that the talents cultivated can achieve smooth connections between schools and enterprises and meet the actual needs of job positions. Secondly, curriculum construction should achieve a "comprehensive" approach, focusing on four aspects: curriculum development, system construction, curriculum models and

curriculum evaluation, continuously enriching curriculum content, forming a distinctive curriculum system that belongs to the school and implementing targeted adjustments to address various issues that arise during talent cultivation [11].

4.2.3. Emphasize structured teaching staff construction

Building a scientifically reasonable faculty team is the key to ensuring the quality of engineer training. From the perspective of New Engineering disciplines, the cultivation of engineers requires a team of teachers with diverse disciplinary backgrounds and age stratification. The interdisciplinary background is due to the fact that international applied talents are composite talents. Therefore, in the teaching team, there should be professional teachers with strong engineering theory and teachers familiar with international law and on-site communication management skills to cultivate comprehensive quality professional talents. The multi-level age structure is due to the urgent need for experienced old teachers to lead new teachers to quickly familiarize themselves with job responsibilities in the talent cultivation process, as well as a group of young and middle-aged teachers with strong research abilities and higher sensitivity to cutting-edge technologies for curriculum innovation. On the other hand, schools should also introduce corresponding incentive policies for the internationalization development of teachers, support teachers to study abroad through multiple channels of funding, encourage teachers to participate in international academic exchange conferences and include the internationalization development of teachers in the final evaluation indicators, enhance the sense of responsibility of the teaching staff team, and lay a good foundation for the high-quality development of the engineering teacher team [12].

4.3. Improve talent training evaluation

4.3.1. Whole process quality monitoring

In the process of talent cultivation in universities, the theory of Total Quality Management can be adapted to monitor the entire process of education work. Specifically, different subjects in the teaching process should play their due roles according to their functions. For example, inviting professional talents from the industry to give lectures in universities or inviting relevant enterprises to carry out teaching construction, deepening the cooperation process of talent cultivation, improving the content of talent cultivation, and optimizing the organization of talent cultivation to achieve comprehensive monitoring of talent cultivation work [13].

4.3.2. Evaluation of student learning effectiveness

In addition to graduation certificates and diplomas, the employment quality recognized by employers has also become an important standard for evaluating graduates in current society.

The evaluation of student learning outcomes, also known as the evaluation of student learning outcomes, is based on two dimensions, namely quality and quantity. By collecting various data during the teaching process and combining it with the core goals of talent cultivation, a detailed evaluation of the effectiveness of talent cultivation work is carried out. This method can help teachers accurately understand the learning and development needs of different students and also deepen their understanding and mastery of knowledge [14].

5. Conclusion

In summary, cultivating international applied professional talents from the perspective of New Engineering is the main task that current talent cultivation plans in Chinese universities need to face. Each university should fully recognize the profound significance of this strategy, combine it with the characteristics of China's engineering construction development and explore an applied talent training model that is suitable for the actual

teaching situation of the university itself. By strengthening the construction of an international applied teaching staff team, improving supporting systems and other means, more talent reserve support should be provided for China's industrial development [15].

Funding

Shaanxi Provincial Education Science 14th Five Year Plan Project (Project No.: SGH22Y1800)

Disclosure statement

The authors declare no conflict of interest.

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