Research on Talents Training Mode of Local Applied Undergraduate Universities under the Background of New Engineering

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Abstract: With the double wave of the new industrial revolution and the new economic revolution, traditional engineering education faces unprecedented challenges. The traditional engineering training model and the cultivated talents cannot adapt well to the needs of the industrial revolution under the new situation. Under the background of new engineering construction, the development of local applied universities has ushered in tremendous development opportunities. This paper studies the talents training mode of local applied universities, and proposes the integration of deep production and education, enterprise modular practice training, and multi-faceted training mode. Reform. "Reform and Development Education First," China's engineering education must seize the opportunities of new industry development and new technology innovation, take into account the recent and long-term development needs of the engineering field, and vigorously promote the reform of the talent training model, thereby promoting the national and regional human capital structure. The upgrade will help transform the economic model from a traditional economy to a new economy.

1 Introduction

With the historical collision between the new economic era and the development of the world economy, and the rapid development of China's engineering field, the world's higher engineering education is standing at an important historical node seeking development and transformation. The Ministry of Education has met several times. In the discussion on the development of higher education in the new era, the Fudan Consensus clearly proposed the construction of new engineering. In fact, for most universities, the most urgent task in the construction of new engineering is to change the shortcomings of traditional engineering disciplines, to promote cross-disciplinary integration among disciplines, to strengthen the cultivation of composite engineering talents, and to explore the talents of engineering education. New model; update teaching content and curriculum system, innovative teaching methods, teaching models, improve academic challenges, “return to common sense”, integrate professional education with general education, and build “new quality” and “new system” for engineering majors.

In the Fudan Consensus, the schools are divided into: superior universities, comprehensive universities, and local colleges. Under the premise of respecting the independent development of
colleges and universities, universities are encouraged to implement diversification and complexity. There are more than 1,200 undergraduate colleges in China, and half of them are local colleges and universities. Local universities play a supporting role in regional industrial economic development and transformation and upgrading. Local colleges and universities are cultivating engineering and technical talents in combination with their own development advantages, and innovating products and services based on actual technology development technologies required for local industrial structure adjustment or enterprise technological advancement. Compared with traditional engineering talents, under the guidance of new industries such as Internet of Things, artificial intelligence, big data and new economy, it is urgent to cultivate high-quality compound talents with strong innovation ability, strong engineering practice ability and international competitiveness.

The key to cultivating new engineering talents is teachers, which must focus on creating cross-border development of teachers, engineering practice, innovation and entrepreneurship training, and a life-cycle development training system. Deeply explore the reform of the talent training model under the strategy of integration of production and education, integration of science and education, and school-enterprise integration. Promote the development of students' engineering ability, learning ability, and ability to use knowledge transfer. To build a new platform for school-enterprise collaborative education, establish a school-enterprise laboratory, set modular teaching according to actual industrial production needs, and use the OBE concept as a guide to cultivate compound talents that can solve practical engineering problems.

2. Problems in local applied universities under the background of new engineering

Under the development of new industries such as artificial intelligence, Internet+, industry 4.0, virtual reality and Internet of Things, and the scientific and technological revolution, China's engineering education is under tremendous pressure. The development of new engineering mainly includes two aspects: the first is to integrate and optimize traditional engineering majors to realize the transformation of traditional engineering; the second is to develop new engineering majors according to the development of new industries and new economy, so as to plan ahead and cultivate A combination of innovative entrepreneurial capabilities and cross-integration capabilities.

2.1 Teacher's lack of engineering practice ability

The new engineering concept is not a refurbishment and synonymous repetition of the previous concepts but a positive exploration of engineering education in China to adapt to the development of new economy and new industry. It is a new form of engineering education. Engineering education should adjust and optimize disciplines, transform existing engineering disciplines, and actively develop and adapt to the frontiers of the new economic development and the shortage of majors. The previous engineering education was a fragmented reform. In engineering education, teachers' professional structure, knowledge system, engineering education methods, engineering education resources and engineering education standards were all missing, leading to engineering education and economic society. The coupling of development is out of touch.

The teachers who are engaged in front-line teaching are the masters and doctors who have just stepped out of the school. The professional structure is single, the theoretical knowledge is relatively solid, the professional knowledge of engineering practice is weak, and the reform of engineering education resources and engineering education standards should be standardized. The attributes of the local high line determine that its main social function is to engage in the design, planning, and decision-making work that is directly related to society. Local universities are mainly based on the technological development, technological innovation and services required for the adjustment of local industrial structure or the technological advancement of enterprises. Local colleges and universities have been inaccurate in the reform of engineering education, and have not targeted local economic and social development, and have contributed to the lack of stamina for industrial institutions.
2.2 The lack of collaborative education platform for deep integration of school and enterprise

In the practice of running a school, the school implements a school-running model of collaborative education, collaborative education, and collaborative innovation; the school has insufficient communication in the implementation of collaborative education with the enterprise industry, and the education model of industry-university cooperation is insufficient; the school meets the regional economic development school. The service function has not been highlighted. In the development of the layout of degree disciplines in universities, there is no such thing as “being born of industry, growing by industry, and prospering with industry”. In the deepening of the integration of production and education, the concept of collaborative education, collaborative education, and collaborative innovation has not been put in place. The school does not provide policy support for school-enterprise cooperation in the system. The teachers themselves mainly focus on the promotion of titles, and the teachers are not deeply involved in seeking deep cooperation between schools and enterprises.

2.3 Single talent training model

Local application-oriented colleges mainly use the study in the talent training mode. The theoretical knowledge during the school period occupies a large amount of time. In practice teaching and engineering teaching, the task-oriented modular teaching is insufficient. Although the students themselves can't satisfy the knowledge learning under the current system, they can't get the knowledge they need to develop, mainly because the goal is not clear, which makes it impossible to arrange in time; and the school is still the old model when formulating the training outline. The lack of consideration of the growth environment of existing students and the source of learning knowledge make students have no interest in the development of the outline knowledge developed by the school. The above-mentioned teacher talent training has not been fully exerted, and the quality of its own engineering education is not high, resulting in the improvement of the comprehensive ability of the students.

3. Research on the Training Mode of Local Applied Universities under the Background of New Engineering

Under the background of new engineering, local colleges and universities should vigorously improve the comprehensive quality of the teaching staff; through deep participation in the integration of production and education, cultivate students' ability to solve specific problems in actual engineering production and analyze the ability to encounter problems in new situations, through the enterprise module. Guide to improve the ability to solve practical problems; at the same time, while formulating the training outline, consider the new situation, the industrial structure characteristics under the new economy, and promote the ability of students to learn independently and solve problems through various discipline competitions such as innovation and entrepreneurship.

3.1 The construction of the "double-skilled" faculty

Teachers are crucial in the process of cultivating new engineering talents; the school itself must formulate a system of evaluation and recruitment, improve the construction of a double-teacher team, and rely on excellent engineering teachers to train excellent engineering teachers. According to their own development, the school can introduce high-quality engineering experts with strong engineering practice ability. As a teacher of practical teaching, students can even carry out the engineering practice courses of students in the enterprise and conduct on-the-spot learning. In-depth cooperation with enterprises will distribute teachers in batches. When the company is stationed, understand the actual needs of the company, and cultivate the engineering practice ability of the teachers, ensure that in the construction of the double-skilled team, we will deepen the limited identification of teachers in the front line of the enterprise, and at the same time give preferential treatment in other aspects.

3.2 Formation of mentor guidance + enterprise project module training + effect evaluation

Through the formation of the enterprise tutor system and the specific module training mechanism of the enterprise, the students' engineering practice ability is cultivated. The practical teaching system of knowledge, technology, project and professional ability is used to create a group of teachers with
high comprehensive quality. The complex and comprehensive talents that new engineering needs.

3.3 Local college professional training programs and curriculum systems

Local colleges and universities should be characterized by the development and upgrading of weak local industrial structure, and develop appropriate training programs and curriculum systems, so that students can switch freely in theoretical study and practical learning; according to the development of students themselves and the training programs formulated by the school and The curriculum system completes its own career planning; it forms a new training mode of cooperation in production and education of new engineering, and an innovative and entrepreneurial education and training mechanism that integrates innovation, entrepreneurship and various professional competitions, making local colleges and universities actively adapt to the region during the development process. Economic development, explore a set of professional training programs and curriculum systems that are compounded by their own development.

4. Summary

This paper expounds the problems existing in the development process of local applied universities by the teachers' engineering practice ability, the collaborative education platform of school-enterprise cooperation, and the diversification of talent training mode. At the same time, the methods proposed in the above aspects are proposed. Under the new industrial structure and the development of the new economy, the importance of training new talents and the specific implementation practices of training new engineering talents were discussed.

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