The Reform of the Training Mode of Engineering Applied Talents Under the Background of Application Transformation

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Abstract. Under the background of the application transformation of universities and colleges, cultivating applied talents with innovative ability, ability to adapt to and support industrial transformation and local economic development has become the fundamental task of higher education in China. Based on the transformation and development of local universities and colleges, the paper focused on the ideas and main measures of the training mode reform of high-quality engineering applied talent.

Introduction
At present, China's higher education has entered the stage of popularization, and China has established the world's largest higher education system. Among which local undergraduate universities and colleges account for the largest proportion. And also local undergraduate universities and colleges are an important force in the cultivation of higher talents. Under the background of accelerating the implementation of innovation-driven development strategy and increasing industrial transformation and upgrading in China, the position of local universities and colleges has undergone a fundamental change. It is necessary to change the traditional academic or research-oriented orientation, follow the training concept of applied talents, professional talents and industry demand orientation, and realize the transformation to cultivate applied talents.

New Problems Encountered by Local Universities and Colleges in the Training of Undergraduate Talents in Recent Years
In recent years, local undergraduate universities and colleges have encountered some new problems in the process of talent cultivation. With the continuous restructuring of economic structure and industrial transformation and upgrading in China in recent years, industrial demand has changed rapidly. The difficulty of employment and the difficulty of recruiting workers exist simultaneously. The popular majors of local undergraduate universities and colleges in the past few years have gradually appeared to be difficult for graduates to find employment. And the first employment rate and the job suited rate have all shown a downward trend partly.

From a deeper perspective, these problems have revealed that the structural contradictions of higher education in China are more prominent and the homogenization tendency is very serious. The main cause is that the talent supply of higher education in China is not matched with the demand of new industrial and employment market. China's higher education somewhat deviates from the actual needs of China's current social and economic development, and it also reflects that the structure of talent cultivation and the quality of China's higher education are not well adapted to the requirements of restructuring of economic structure and industrial upgrading.

The Reform of the Training Mode of High-quality Engineering Applied Talents and Specific Measures
The ultimate goal of the reform of the training mode of applied talent is to cultivate applied technical talents that adapt to the strategic adjustment of the economic structure and the upgrading
of the industrial structure in the new era of our country. The construction of the training system for high-quality applied technical talents needs to focus on the combination of local economic development, industrial development and integration, new technology, new economy and employment market demand. When constructing talent training modes of different majors, it is necessary to accurately locate the talent training goal of various majors by combining with market orientation, industry development needs, professional needs, application ability requirements, professional competence requirements, innovation and entrepreneurship requirements and comprehensive quality requirements. We should refine talent specification requirements and reformulate talent training programs. In the process of constructing the training mode of applied technical talents, the application-oriented curriculum and curriculum system based on the CDIO education concept should be built as the main line, which not only emphasizes the acquisition of knowledge, but also emphasizes that knowledge is transformed into the practical application ability of students through experiment, practice, training or internship.

**Constructing the Collaborative Education Mechanism and Platform for the Integration of Production and Education and School-enterprise Cooperation**

The cultivation of high-quality applied talents should break the traditional mode of education and school-running that is entirely based on universities and colleges. It is necessary to gather the strengths and educational resources of society, adopt an innovative and open-ended talent training mode, and focus on introducing well-known enterprises to carry out in-depth school-enterprise cooperation to establish the collaborative education mechanism and platform. The company's technical courses, equipment platforms, talent training concepts and business operation experience should be introduced into professional education and innovation and entrepreneurship education. The two sides jointly set up teaching teams, jointly carry out professional teaching, curriculum construction, innovation and entrepreneurship education and vocational education.

Through in-depth school-enterprise cooperation, professional characteristics and talent training advantages are able to be created. The students should be educated according to the characteristics of the industry. The curriculum should be updated according to the changes in employment needs, and vocational skills training should be carried out according to the job requirements. The students should participate in various certification training, and obtain relevant professional qualification certificates. The research and production bases of cooperative enterprises should be introduced to set up large-scale off-campus practice bases for students. By jointly carrying out the construction of practice teaching conditions, the sharing of teaching resources and the complement of each other's advantages are able to be realized, which is able to further lay a solid educational foundation for the cultivation of applied talents for the major.

**Constructing the Application-oriented Curriculum System for the Major**

The construction of application-oriented curriculum is the core carrier and key element for the cultivation of applied talents, and the reform of application-oriented curriculum system should be driven by social economic development and industrial technology advancement. The professional basic courses, professional core courses, professional direction courses and experimental or practice courses should be integrated thoroughly for cultivating students’ application ability and innovation ability. At the same time, the innovation and entrepreneurship education should be integrated into the whole process of talent cultivation, so that professional education and innovation and entrepreneurship education are able to be organically combined.

(1) Focusing on the development of application ability, the reform of the teaching content of professional courses should be carried out. In combination with the curriculum implementation plan from the National Teaching Steering Committee or other related teaching guidance institutions, the correspondence between the chapter content or knowledge unit of each professional course and the training system of students’ application ability should be studied to make the training of application ability truly implemented from the theoretical level to the specific teaching implementation process.

(2) It is necessary to carry out in-depth exploration of teaching methods and instructional design suitable for the training of application ability. In the process of teaching implementation, it is
necessary to flexibly use various forms of teaching such as classroom teaching, practice teaching, online teaching, flip class, real-life teaching, the second classroom teaching and self-learning. All teachers are required to use the PBL teaching method and the real case teaching method in combination with the content of the knowledge unit, and focus on the design of interaction, discussion, practice and training. The real working environment and the construction of real R&D projects should be highlighted. And students should be guided to focus on and pay attention to practical application problems, so that the training of logical thinking and innovative thinking in the process of solving practical application problems are able to be strengthened.

**Constructing the Comprehensive Experimental and Practice Teaching System for the Training of Application and Innovation Ability**

It is necessary to reconstruct the experimental and practice teaching system and courses in combination with the construction of application-oriented curriculum. The experimental and practice teaching can be combined with task-driven teaching and real development projects. Focusing on the main application problems or core application points in the major, through general or special tools commonly used in the major, the problems of professional application are solved in combination with the corresponding design of software or hardware. The design of the experimental project should emphasize the solution to the problem of professional application, and highlight the training process of logical thinking and innovative thinking, so that the students are able to complete a series of experimental tasks step by step.

**Conclusion**

In the process of application transformation of local universities and colleges, it is the objective requirement for higher education and talent cultivation in social development and economic construction to cultivate applied talents with innovative ability and ability to adapt to industrial transformation and local economic development. It is also necessary to further increase the exploration practice and reform efforts of the training mode of engineering applied talents.

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**References**

