

Research on the Cultivation of Engineering Application Talents by School-enterprise Cooperation

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Abstract: In order to adapt to the development of the times, many colleges and universities adopt the school enterprise cooperation mode to cultivate engineering applied talents. In order to improve the training quality of engineering application-oriented talents, first of all, the paper analyzes the problems existing in the current school enterprise cooperation education model in colleges and universities in China; Secondly, it discusses the necessity of the educational mode of school-enterprise cooperation in training engineering applied talents; This paper mainly discusses the basic contents, existing problems and solutions of the cooperation between schools and enterprises in training engineering applied talents. The "2+1" semester system is put forward in order to become a new model of school-enterprise cooperative training; It puts forward the scientific research orientation of "standing on top of the earth" to support and encourage teachers to improve their practical ability.

Keywords: Engineering Application Talents; School-enterprise Cooperation

1. INTRODUCTION

School enterprise cooperation in running a school means that, with the financial input and policy support of the government, universities and enterprises have established a productive teaching practice base that integrates classroom teaching, practical operation, training base and production by introducing factories into the school and providing places for enterprises. The production teaching practice base on campus is dominated by the school and aims to cultivate engineering application-oriented talents. The educational circles, including colleges and universities, are conducting in-depth research, active exploration and reform.

It is generally believed that school-enterprise cooperation is the essential requirement of engineering education and an effective way to improve the training quality of engineering applied talents. This paper discusses the content, existing problems and reform ideas of school-enterprise cooperative training based on the actual work. With the rapid development of social economy, the demand for engineering applied talents is increasing, and colleges and universities have unclear positioning and objectives in the training of applied talents. In the training program for application-oriented talents, the proportion of theoretical and practical courses is unreasonable, the curriculum arrangement focuses on theoretical teaching, and the public basic courses occupy a large number of class hours, so that the practice link is often ignored, resulting in the lack of targeted teaching, students' practical ability is not strong, and it is difficult to meet the needs of society.

Since 2010, many college educators have realized that students' theoretical basis must be combined with practice, so various forms of practical teaching bases have been assembled and played a very positive role. However, because this teaching mode is still in the trial operation stage, there are still great drawbacks: there is no effective and normative operation standard, most of which are due to the personal relationship between the university head and the relevant leaders of the enterprise. First of all, the school and enterprise jointly revise the professional curriculum content with employment-

oriented and practical operation ability as the goal, and take the post needs and professional standards as the teaching objectives of classroom practice, According to the actual work task, work process and work situation, the professional course content is simulated and set, with the ultimate goal of training students to become application-oriented talents to adapt to engineering professional positions, and to adapt to social and economic development and scientific and technological progress.

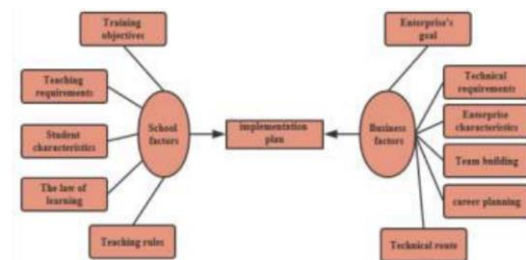


Figure. 1 The influencing factors in implementation of the school-enterprise cooperation program.

2. THE PROPOSED METHODOLOGY

2.1 The Necessity of the Educational Mode of Training Engineering Applied Talents by School Enterprise Cooperation

The "Committee" is responsible for the research of training objectives, the formulation of training standards, the reform of organizational model and operating mechanism, etc; The "professional expert group" is responsible for the formulation of talent training plan, the optimization of curriculum system, the reform of teaching mode, as well as the teaching objectives, teaching contents, teaching methods, training standards, assessment methods, etc. of students in the enterprise learning stage. In the real society, there must be differences between the school's internal management and the enterprise management system.

(1) At present, the goal of deepening education reform in China's colleges and universities is to further promote quality

education to cultivate all-round talents. However, in fact, the university education management has not completely got rid of the traditional idea of teaching as the main task, and insisted on the management mode of teachers, textbooks and classrooms as the training of talents.

(2) What are engineering talents? This concept has been discussed and disputed internationally for a long time, and the American Engineering and Technology Certification Commission has published 11 evaluation criteria for it. For these 11 criteria, the author believes that the engineering practice ability, learning ability and social responsibility ability can match the actual situation in China.

(3) As the core of teaching reform in China's colleges and universities, the best way to cultivate engineering practice ability is to learn and practice in the actual environment. Secondly, set up an internship production training base. Colleges and universities provide sites to build factories, carry out daily training management, enterprises provide production equipment and technical guidance, and enterprises become the main force in organizing training bases.

2.2 The guarantee mechanism of school enterprise cooperation training

The production training base is an important carrier for colleges and universities to cultivate engineering application-oriented talents. Schools and enterprises jointly provide students with major practical opportunities in the form of production training base and internship. In the construction of teaching staff, teachers and scientific and technological personnel with both theoretical and practical experience shall be employed as instructors, and their respective responsibilities and rights shall be clarified; teaching construction and research, actively reform the content, methods and means of practice teaching, and compile or update the teaching materials for practice and practice guidance; Management work, including system construction, regular or irregular meetings, research base construction tasks, coordination of the work of both parties, reasonable arrangement of teaching tasks, etc.

The evaluation system of student practice effect is not perfect, and there is no clear evaluation standard. It is only based on the enterprise's practice appraisal form and student's practice report. It can neither comprehensively evaluate students' practical work ability, nor can it really encourage students to actively and actively participate in enterprise practice.

The imperfect evaluation system is difficult to meet the talent training needs of contemporary enterprises, and the purpose of school-enterprise cooperation mode to cultivate the practical ability of engineering application talents cannot be effectively achieved. Implement "3+1" or "3.5+0.5" mode. That is, for the four-year college education, formal theoretical teaching can be carried out in the first three years or three and a half years to complete the semester based curriculum tasks. In the last year or the last semester, students can participate in enterprise internship activities in the society to complete their graduation design from the real post work.

3. CONCLUSION

The school-enterprise cooperation mechanism is the only way for colleges and universities to adapt to social and economic development. School-enterprise cooperation in training engineering application-oriented talents can not only improve the quality of higher education and achieve school-running characteristics, but also provide the society with innovative

and practical engineering application-oriented talents. School-enterprise cooperative training is not only an inheritance work, but also a pioneering work. With the continuous changes in the form of social and economic development, its mode, connotation, methods and means are correspondingly characterized by dynamic changes. How to promote this work more effectively is an important issue facing universities, enterprises and governments.

4. ACKNOWLEDGEMENT

Project: "Research on the Integration Mechanism of Production and Education in Local Undergraduate Universities Based on Regional Development", Jiangsu Province University Philosophy and Social Science Research Project (No. 2022SJYB2013).

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