

Research on the Talent Training Mode of “School-Enterprise Cooperation” in Local Applied Undergraduate Colleges

—Taking the Engineering Management of Eastern Liaoning University as an Example

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Abstract—Combined with the training objectives of applied talents in engineering management, this paper analyzes and summarizes the existing problems in the current school-enterprise cooperation, proposes the significance of implementing the talent training mode of school-enterprise cooperation, and constructs a talent training mode of school-enterprise cooperation that is suitable for the engineering management of Eastern Liaoning University.

Keywords—*applied undergraduate; engineering management; school-enterprise cooperation; talent training mode*

I. INTRODUCTION

In order to adapt to the needs of economic and social development, solve the structural contradictions of higher education, reverse the homogenization tendency, ease the employment difficulties of local ordinary undergraduate college graduates, and cultivate applied, compound and innovative talents who are in short supply in the production service line, on November 3, 2015, “Proposal of the Central Committee of the Communist Party of China on Formulating the 13th Five-Year Plan for National Economic and Social Development” proposed to optimize the layout of disciplines and professional personnel and talent training mechanisms, and encourage qualified ordinary undergraduate universities to transform into applied universities. The Ministry of Education states that local common undergraduate colleges should focus on training applied talents in the document “Guiding Opinions on Guiding Some Local Ordinary Undergraduate Universities to Transform into Applied Universities”. It can be seen that the state attaches great importance to the construction of applied undergraduates and the cultivation of applied talents. Engineering management is an interdisciplinary subject of engineering technology and management established in the 1980s, which has strong applicability and practicality, and its talent training objectives are more consistent with the undergraduate training goals of applied talents [1].

As a place to serve regional economic and social development and cultivate high-quality technical applied talents, local colleges and universities focus on “application”.

They should pay more attention to the cultivation of applied talents, especially explore various ways in the practical ability training of talents to better meet the needs of regional economic and social development. The talent training mode of “school-enterprise” cooperation have superiority in effectively promoting the school-enterprise cooperation and the combination of work and learning, which is of great practical significance for innovating applied talents training mode and serving regional economy.

II. APPLIED TALENTS TRAINING MODE OF “SCHOOL-ENTERPRISE” COOPERATION

Applied talents mainly apply knowledge rather than scientifically discover and create new knowledge. The society has a large demand for such talents. In the process of social industrialization and informatization, popular higher education provides a broad space for the development of applied undergraduate colleges. The main characteristics of the applied talent training mode are as follows:

(1) The knowledge structure of applied talents is closely designed around the actual needs of the production line. In the main work links, such as curriculum design and teaching material construction, it especially emphasizes the basic, maturity and usability of knowledge, while relatively ignores the strong pursuit of discipline system and the attention to frontier unknown fields [2].

(2) The competence system of applied talents takes the actual needs of first-line production as the core goal. In the process of ability cultivation, it pays attention to the mastery and application of basic knowledge, but generally has low requirements for scientific research and development capabilities [3].

(3) In the process of training applied talents, we should pay special attention to the combination of practical teaching links and production practice. The applied talents training of school-enterprise is a training mode that gives full play to the respective advantages of universities and enterprises, makes full use of the different educational resources and practical conditions of schools and enterprises, and jointly cultivates the

applied talents suitable for the needs of enterprises. It is a way for both schools and enterprises to jointly cultivate talents based on market and social needs. The applied talent training of school-enterprise cooperation is of great significance to both universities and enterprises. It can maximize the efficiency of resource utilization, promote the construction of practical teaching faculty, stimulate the creativity of students, improve the popularity of schools and enterprises, establish a good corporate image, cultivate product market, and promote the employment and entrepreneurship of college students [2].

III. THE SIGNIFICANCE OF TALENT TRAINING MODE OF "SCHOOL-ENTERPRISE" COOPERATION

A. *Training Objectives of Engineering Management Talents in Eastern Liaoning University*

Cultivate high-quality applied technology talents that can meet the needs of social and economic development, comprehensive develop abilities in moral, intellectual, physical, aesthetics and labor, master the basic theories and basic knowledge of civil engineering, management science and engineering, receive basic training of engineers, have strong practical ability, and be able to engage in the whole process of engineering management in the fields of construction survey, design, construction, supervision (project management), investment, cost consulting and other real estate enterprises and institutions, and relevant government departments.

B. *The Necessity of Implementing the Talent training Mode of "School-enterprise Cooperation" in Applied Undergraduate Colleges*

The applied undergraduate colleges strengthen school-enterprise cooperation and form a collaborative education mode with the guidance of employment and integration of talent training between industry and education. It is a clear task set out in the "Outline of the National Medium and Long-Term Education Reform and Development Plan (2010-2020)", an effective way to cultivate technical talents for the first line of production, construction, management and service, and a key measure for the applied undergraduate colleges to position their own training orientation, seek self-development, and cultivate first-line technical talents for enterprises. Its purpose is to enable students' colleges and enterprises to achieve an organic combination of posts and to realize complementary advantages and resource sharing of equipment and technology between colleges and enterprises, as to realize the pertinence of education and improve the training quality of skilled talents. Meanwhile, in the face of the technical and talent requirements for the optimization and upgrading of industrial structure of enterprises, only by strengthening and deepening school-enterprise cooperation, can we actively adjust the structure of professional settings, reform the teaching content, and cultivate the talents needed for the positions of enterprises. For industrial enterprises, to realize the transformation from "made in China" to "high-quality manufacturing" and "excellent manufacturing", only through the cooperation and interaction with colleges and universities, can they get the technical skills and talents they need to enhance their core competitiveness.

IV. ANALYSIS OF THE PROBLEMS EXISTING IN SCHOOL-ENTERPRISE COOPERATION OF ENGINEERING MANAGEMENT

Although the engineering management of Eastern Liaoning University had implemented the practice of school-enterprise cooperation, it remained in a shallow level of cooperation, which has not achieved the expected results. The problems analyzed are as follows:

A. *Insufficient Degree of Integration of School-enterprise Cooperation*

Currently, schools still play the dominate role in talents training, and enterprises have not really participated in the talent training links, and have not played their due role in the cultivation of students' professional skills and professional qualities. Schools and enterprises should be an organic whole. Both sides should take responsibility, complete and be in equal relationship but rather than the cooperative relationship of "cooperation", "support" and "help". From the perspective of teaching field, the school and enterprise should be integrated into an educational subject, both take responsibility to complete the whole process of talents training and cultivate the talents needed by the enterprise [4].

B. *Insufficient Depth of School-enterprise Cooperation*

At present, the content of school-enterprise cooperation is less, and most of them stay in the shallow level cooperation of school-enterprise laboratories and practical training bases. Its form is very single, which cannot meet the requirements of applied talents training objectives. The best depth of cooperation is to integrate the whole process of enterprise production and management with the whole process of talent training, closely integrate the production process, production standards, management system, enterprise brand, enterprise culture with the whole process of talent training, and constantly adjust and optimize to form a whole.

C. *Instability of School-enterprise Cooperation*

At present, the school-enterprise cooperative relationship is not stable and is difficult to maintain long-term and good cooperation, which makes it difficult to achieve the goal of training applied talents. The success of school-enterprise cooperation depends on the purpose of the cooperation, that is, motivation. The fundamental purpose of enterprise cooperation is to obtain benefits, which can be the reduction of cost, the acquisition of talents, the acquisition of knowledge technology and social resources, etc. The fundamental purpose of college cooperation is to increase the number of trained talents and solve the problem of students' employment. Only when the respective or common interests of both parties are guaranteed or promoted can they become closely interdependent, and the cooperative relationship be effectively guaranteed. Only in this way can the training mode of school-enterprise cooperation be carried out smoothly.

V. CONSTRUCTION OF THE TALENTS TRAINING MODE OF SCHOOL-ENTERPRISE COOPERATION IN ENGINEERING MANAGEMENT OF EASTERN LIAONING UNIVERSITY

It is of great significance and value to construct the training mode of engineering management talents for applied undergraduate colleges from both theoretical and practical aspects. According to statistics, more than 400 colleges and universities in China have set up engineering management majors, including double first-rate undergraduate universities, traditional undergraduate universities and local undergraduate universities. As the engineering management of local undergraduate colleges, only by strengthening the training of applied talents and increasing practical teaching can we improve the competitiveness of graduates in the market.

A. *Reconstruct the Teaching System and Optimize the Teaching Content.*

Local applied undergraduate colleges should break through the existing disciplinary framework, closely integrate the needs and development trends of industry and enterprises, reconstruct the curriculum system, and allow enterprises to participate in the formulation and teaching of curriculum content. Design and optimize the curriculum structure according to the needs of industry development and professional qualification standards, and integrate the application of relevant professional basic courses, professional courses and professional skills to a curriculum module based on practicality and highlighting the cultivation of students' practical ability. Meanwhile, combined with the requirements of engineering management, make full use of modern information technology to promote the reform of curriculum content and teaching methods [1]. For example, since 2014, BIM technology has been gradually popularized and applied nationwide under the vigorous promotion of the Ministry of Housing and Urban-Rural Development. It is also a practical skill that architectural college students must master and develop at present. Therefore, courses such as "Technology Application of Building Information Modeling (BIM)" and "Practical Training of BIM" have been added to the talent training program.

Moreover, we can also try to actively guide students to enterprises or introduce enterprises into the classroom in the teaching process of theory and practice. In the previous teaching reform, the engineering management has replaced the traditional indoctrination teaching through case interleaving and other methods, and interpenetrated "projects" in different stages of teaching process to train students' practical ability, but these projects are mostly formed by teachers' imagination and are not completely practical. In this stage, the major can gradually introduce the actual project training of the enterprise into the classroom, and provide the regular practice platform for students' internship (cognition internship, production internship, graduation internship, etc.).

B. *Build a Joint Training Platform and Reform the Practical Teaching Links*

Schools and enterprises jointly carry out integrated teaching and education, increase the strength and investment cooperation of enterprises in practical teaching, formulate a

distinctive professional practical teaching training program, and actively explore the talent training mode of "industry-education integration" and school-enterprise cooperation.

According to the specialty setting and curriculum needs, on the basis of "complementary advantages and mutual benefits", establish off-campus practice bases with construction units, supervision units and cost consulting companies that is promising and is willing to cooperate, to provide a platform for teachers and students to contact enterprises. These practice bases provide teachers with a platform for scientific research, and provide students with a platform for curriculum practice, accumulating a large amount of learning materials for students' curriculum teaching and graduation design. In the process of resource construction and student training, both schools and enterprises should adopt "one course, two teachers" that combines university teachers and enterprise engineers. In the teaching process of specialty course, professional teachers are responsible for theoretical teaching, while enterprise engineers are responsible for part of practical teaching.

The school uses the base to cultivate students' professional quality, practical ability and innovation ability. Through observation, enterprises can select excellent students from them and offer them employment invitations [5], so as to achieve a triple-win situation among school, enterprise and students.

C. *Improve the Overall Quality of Teachers, and Enlarge "Double Teachers With Double Abilities" Teachers' Team.*

Local applied undergraduate colleges highlight the applicability of the trained talents, which first requires strengthening the cultivation of teachers' teaching ability, and requires the "double teacher" team that is familiar with theoretical knowledge and has strong professional practical ability. It can organize teachers to practice in the front line of enterprise production, improve teachers' engineering practice ability, and build a team that has both the qualifications of teachers and engineers, and with both teaching ability and engineering practice ability.

Enterprises with school-enterprise cooperation should also occasionally send technical backbones to deliver special lectures and reports or conduct training, so as to transmit the latest development trends of the industry and other relevant information to the teachers and students in the school.

VI. CONCLUSION

It is a "triple-win" choice for schools, students and enterprises to construct the talent training mode of "school-enterprise" cooperation. In order to improve the quality of engineering management talents training and enhance the practical ability and innovation ability of students, colleges and universities must build a talent training mode of "school-enterprise cooperation", consider the needs of enterprises and job requirements, establish a mechanism of mutual benefit, win-win cooperation and collaborative innovation with enterprises and industries, and implement in-depth the reform of innovative engineering management talents training mode from the perspective of the supply side of talents and the supply side of intellectual achievements.

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