

Exploration on the School-enterprise Collaborative Training Mode of High-level application-oriented Talents in Local Colleges and Universities

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Abstract—The mode of school-enterprise cooperation and collaborative education is the inevitable means of training the application-oriented undergraduate talents. However, due to the constraints of the basic conditions, such as policies and regions, etc., it is difficult for the local colleges and universities to carry out school-enterprise cooperation. In this paper, the in-depth analysis is conducted from aspects of school-enterprise cooperation goals, entry point and normalization factors, etc., by taking engineering as an example. And the methods and ideas for establishing long-term effective school-enterprise cooperation and collaborative education mechanism is explored.

Keywords—school-enterprise cooperation, talent training, application type, training mode

I. INTRODUCTION

Dualsystem in Germany is a form of training apprentice by the master that has rooted hundreds of years ago. In 1897, Dualsystem was formed gradually, which was a kind of school running system supported by national legislation and built based on school-enterprise cooperation. “Sandwich Education” mode in the UK is a talent training mode of “theory-practice-theory”. “Cooperative Education” model in the USA mainly regards the combination of labor and teaching and the alternation of work and study as the principle. “TAFE” mode (Technical and Further Education) in Australia means “Technology and Further Education Institute”. Since 1980, the Australian Government has worked with the industry to establish a national vocational education and training system based on competency standard under the national training framework and training package as the basis of course development.

The Fifth Plenary Session of the 18th Central Committee took innovation and development as the top of the five development concepts and placed innovation at the core of the overall national development. It is urgent to accelerate the training of application-oriented technical talents and promote the formation of scientific and rational educational structure and human resource structure to implement the major national strategies, such as innovation-driven development, Made in China 2025, Internet +, mass entrepreneurship and innovation, and “One Belt and One Road” and so on. In recent years, with the support of the ever-changing modern communication technology and the rapid development of mobile commerce, the competition in the industry has become increasingly fierce, so it is of great significance to deeply conduct organic integration of school-enterprise cooperation.

II. ANALYSIS OF THE PROBLEMS EXISTING IN THE TRAINING OF HIGH-LEVEL APPLICATION-ORIENTED TALENTS IN LOCAL COLLEGES AND UNIVERSITIES

The school-enterprise collaborative education model can realize the complementary advantages of the resources of universities and enterprises, while universities have professional advantages and enterprises have production advantages. Therefore, complementary resources not only can enhance students' practical innovation ability, but also can cultivate the application-oriented talents that are more in line with the needs of industry. There are many ways for universities and enterprises to coordinate education, such as industry-university research, joint construction of practice teams, and technology projects union, etc. With the diversified development of education, local colleges and universities do not have sufficient experience in school-enterprise collaborative education and there is a mismatch phenomenon between talent cultivation and enterprise demands.

A. The Unclear Positioning of Talent Training Program Makes it Difficult to Match the Needs of Enterprises

The formulating principle of talent training programs shall reflect the professional characteristics with clear goals and positioning, which shall take the students first, adhere to the principle of “broadening (major) caliber, strengthening (subject) foundation, encouraging (subject) crossover and repeatedly selecting (major), build a diversified and individualized talent training system and cultivate the outstanding innovative talents who have coordinated development in knowledge, ability and quality, sound personality and critical thinking ability, and have the social caring and international vision, and can master the basic theories, basic knowledge and basic skills in related fields after undergoing strict scientific thinking training, and have the potential of leading role in relevant basic disciplines or engineering fields after trained by solid professional theories and professional skills when meeting the needs of future national development. However, many colleges and universities do not have the talent training programs with clear positioning and the characteristics of the program are not obvious. Therefore, the students’ ability to relate theory to practice is poor, and the seamless connection between talent delivery and enterprise demands cannot be achieved.

B. The Shortage of “Double-Qualified” Teachers Makes it Difficult to Guarantee the Quality of Talent Training

“Double-qualified” teachers are required to have high theoretical teaching level, proficient operational skills, innovative ability and industry experience. There is a shortage of “double-qualified” teachers in local colleges and universities, so they should formulate “double-qualified” teachers training program based on their own actual conditions. In order to meet the needs of educational development and professional construction, it is necessary to establish a “double-qualified” teacher group with strong teaching ability, high level of knowledge and good practical operating ability, so as to promote the school-enterprise collaborative application-oriented talents training towards to the fast, healthy and sustainable development direction, and promote the education and teaching reform of the school.

C. The Insufficient Depth of Cooperation between Schools and Enterprises Makes it Difficult to Guarantee the Quality of Personnel Training.

In order to achieve deep cooperation between schools and enterprises, it is necessary for the two sides to build a training base in multiple channels and multiple forms, and formulate the corresponding management plans and effectively improve students’ practical ability. At present, although many colleges and universities have signed the school-enterprise cooperation base with many enterprises, they do not perform in-depth cooperation in practice, but only superficial. For example, they have signed the internship base, but the students are not arranged to accept internship training within a certain period of time, and it is only in the form to arrange someone to be trained, without strict standardization management to form a long-term mechanism, so that the problem of school-enterprise collaborative education cannot be solved fundamentally.

D. Unreasonable Curriculum System Structure Makes it Unable to Match the Needs of the Company

The setting of the curriculum system is also very important in the talent training mode, including curriculum system structure, curriculum coverage range, curriculum relevance, teaching methods and practice links and so on. It is a problem to bother many colleges and universities that how to give full play to the advantages of school-enterprise cooperation and truly implement it. The curriculum is not reasonable, there are many difficulties for students to practice in enterprises and it is difficult for enterprises to guide students to quickly adapt to their jobs, so it is especially important for the colleges and universities to set the professional courses in line with the needs of the business.

III. EXPLORATION ON THE SCHOOL-ENTERPRISE COLLABRATIVE TRAINING MODE OF APPLICATION-ORINTED TALENTS IN LOCAL COLLEGES AND UNIVERSITIES

A. The Core Concept of School-Enterprise Collaborative Education

The research on the school-enterprise collaborative training system of undergraduate application-oriented talents in local colleges and universities is oriented by social needs and aims at cultivating abilities to construct a scientific and sustainable university personnel training system with advanced concepts and distinctive features. The ultimate goal is to realize the effective connection of enterprise and talent demands, professional guidance, industry guidance, unification of learning and training, integration of entrepreneurship and employment and the completion of the effective docking of professional talents and the markets, so as to finally realize the undergraduate application-oriented training mode of local finance and economics universities with “school-enterprise cooperation and collaborative education”. At the same time, the colleges follows the core concept of “teacher-led, student-oriented, competency-based and employment-oriented”.

B. Optimize Talent Training Program to Meet the Needs of Enterprise

In order to scientifically and rationally set the objective of talent training, it is necessary to optimize and improve the talent training program and further improve the quality and level of application-oriented talents in our college to better meet the needs of economic and social development, and strengthen the same frequency, same resonance and same peers between talent development and local development. To optimize talent training program, the relevant industry research and exchanges shall be conducted firstly to obtain the needs of industry employers and job capability, increase the applicability of talent training, as

well as lay a foundation for deep cooperation between schools and enterprises. The talent training program includes personnel training objective and requirement, curriculum provision, teaching contents, teaching methods, practical teaching and teaching schedule arrangement.

It is an important measure for colleges to further promote open education and deepen the reform of application-oriented talent training mode to jointly formulate the talent training program by the colleges and enterprises, which will lay a good foundation for solidly carrying out in-depth cooperation between schools and enterprises and realizing the integration of production and education.

C. Innovative Practice System Curriculum is in Line with Industry Job Requirements

To take social needs as the guide, innovation consciousness and ability cultivation as the main purpose, starting from the goal positioning of professional talent cultivation, colleges and universities need to introduce the practice of enterprises into the professional talent cultivation system. Therefore, it is necessary to conduct reform of the practical curriculum system and teaching methods. Pay attention to the cultivation of practical ability and innovation consciousness, and establish an innovative practice curriculum system with distinctive and school-enterprise fusion characteristics. The purpose is to achieve the improvement from students' basic professional ability to innovation and entrepreneurship ability and vocational ability.

The professional curriculum system is the key to determine how to cultivate students and what kind of students to cultivate, and also the feature of professional education. Therefore, it is necessary to go deep into the industry, comprehensively analyze the needs of vocational posts, reconstruct the content of the curriculum, and set up the internship training curriculum system.

D. Set up Determine Post Internship to Improve Students' Practical Ability.

Following the students' cognitive rules of "learning-practice-re-learning-re-practice", in the second semester of junior year, students can apply voluntarily and enterprises enroll the outstanding ones, in order to make students conduct determine post internship throughout the whole senior year.

Establish an innovative practice system curriculum with the school-enterprise fusion characteristics, to take social needs as the guide, innovation consciousness and ability cultivation as the main purpose, starting from the goal positioning of professional talent cultivation, colleges and universities need to introduce the practice of enterprises into the professional talent cultivation system. Therefore, it is necessary to conduct reform of the practical curriculum system and teaching methods. Pay attention to the cultivation of practical ability and innovation consciousness, and establish an innovative practice curriculum system with distinctive and school-enterprise fusion characteristics. The purpose is to achieve the improvement from students' basic professional ability to innovation and entrepreneurship ability and vocational ability.

E. Establish a high-quality "double-position" teacher team

For the needs of talent cultivation innovation model and curriculum reform, with dynamic combination and school-enterprise cooperation as the organizational model, through professional leader cultivation, backbone teacher cultivation, industry "master" studio construction, part-time teacher team building, create a high-quality "double-position" teacher team with a combination of full time and part time, reasonable age structure and professional title structure. Each student has two tutors, one focusing on theoretical knowledge and the other focusing on practical ability, so that the trained engineering talents can better combine professional knowledge with practical practice.

F. New model of "order-oriented" talent cultivation

It is necessary to speed up the school-enterprise fusion, set up a bridge of open, flexible and interactive information from the school to the enterprise, and set up a new model of "order-oriented" talent cultivation that what type of talents the enterprise needs, colleges and universities will cultivate and output such type of talents. Through the multi-level combination of school and enterprise, we will build a good growth platform for students and transform them into technical backbones. Through project development and training of professional skills, comprehensive professional quality is enhanced. Students complete the "role change" here to realize the status transformation from students to people in workplace, thus realizing the integration of internship and employment.

IV. CONCLUSION

School-enterprise cooperation is an important way for local colleges to adapt to the needs of economic and social development and effectively cultivate high-quality application-oriented talents. It can better solve the contradiction between talent supply and demand between universities and enterprises, provide available talents for the development of enterprises, maximize the realization of resource sharing and improve the quality of personnel training and the scientific and technological strength of enterprises. Local colleges and universities should strengthen their close relationship with enterprises, while the enterprises should deeply participate in the construction of application-oriented talent training system. The students' practical skills will be improved, the innovation and entrepreneurship education will be strengthened and the sustainable development of local economy can be promoted through strengthening the practical teaching links.

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