

Exploration on the Cultivation Model of Professional Master's Degree Postgraduate under the Collaborative Cultivation System between Universities and Enterprises

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Keywords: Universities-enterprises Collaborative, Professional Degree, Postgraduate, Cultivation Model.

Abstract. Collaborative cultivation of professional master's degree postgraduates by universities and enterprises is of great significance to the cultivation of advanced applied and compound talents in China. The paper analyses the situation and problems of postgraduate cultivation model under the current collaborative training system between universities and enterprises from the perspective of universities-enterprises collaborative training. Innovating and optimizing the collaborative cultivation system between universities and enterprises for professional degree postgraduates in China and to cultivate more high-quality application-oriented professionals who meet the needs of enterprises for the society.

Introduction

On May 2, 2014, the State Council promulgated the Decision on Accelerating the Development of Modern Vocational Education, proposing "Guiding a batch of ordinary undergraduate universities to transform into applied technology type universities, focusing on undergraduate vocational education", which fully reflects the great importance our country attaches to the cultivation of professional talents [1]. As a new concept of education, universities-enterprises collaborative training aims at strengthening the construction of joint training bases. In the process of personnel training, we should make full use of the platform of universities-enterprises cooperation and through the joint guidance of universities and enterprises to accomplish the various training links of students, so as to effectively improve the quality of personnel training and management efficiency. Coordination refers to the process or ability to achieve a certain goal by coordinating the positions, goals and behaviors of two or more different resources or individuals. Universities-enterprises collaboration is the cooperation and mutual promotion between academia and industry. Its essential attribute is the innovation of universities-enterprises cooperation education, which promotes the sharing of resources and complementary advantages between universities and enterprises, realizes the co-development and common development of universities and enterprises, and promotes students' engineering practice ability and develops innovation ability. Universities-enterprises collaboration is different from general universities-enterprises cooperation, which is to explore a talent cultivation model that integrates practical, applied and innovative abilities. It emphasizes that each of them is an independent subject, and combines their respective goals and target resources, so as to coordinate and complement each other's advantages and resources. Focusing on the innovation of collaborative cultivation model between universities and enterprises and promoting the

development of postgraduate training in universities, we need to clarify the significance of universities-enterprises collaborative training for postgraduates with professional degrees, firmly grasp the elements of universities-enterprises collaborative training, correctly analyze the existing problems and main contradictions in the reality of universities-enterprises collaborative training, so as to optimize the collaborative training system between universities and enterprises for professional degree postgraduates.

The Significance of Universities-Enterprises Collaboration in Training Master's Degree Postgraduates

Universities-enterprises collaboration is an important way to solve the problem of the disconnection between scientific research work and production practice in universities. It is also an important channel to cultivate the innovative ability and social adaptability of postgraduates with professional degrees. Through collaborative training, students' innovative ability and technological application ability can be greatly improved by integrating disciplines and professions. It is of great significance to improve the quality of postgraduate training and enhance the core competitiveness of enterprises. It is an inevitable choice to achieve win-win situation among students, universities and enterprises.

Higher education in China has changed from elite education to popular education. Postgraduate education has shown a rapid growth trend since 2008. The growth rate was relatively fast from 2008 to 2011 and the number of graduate students in school increased by 362.8 million with an average annual increase of 90.7 million in the four years [2]. While the number of graduate students is increasing sharply, the problems of "difficult employment" and "difficult recruitment" are becoming more and more serious [3], and the competition among universities is becoming more and fiercer, which undoubtedly puts forward higher requirements for the cultivation model of graduate students. Universities must explore and optimize the collaborative cultivation system between universities and enterprises as soon as possible to promote the construction of innovative personnel training mechanism. As shown in Fig. 1, universities-enterprises collaborative training can increase students' practice opportunities, improve students' practical ability, innovation ability and cooperation ability. Universities-enterprises collaborative training can improve the quality of postgraduate training, promote the transformation of scientific research achievements, and enhance the core competitiveness of postgraduates in the employment market for universities. Universities-enterprises collaborative training can promote enterprise technological innovation, optimize enterprise production and management processes, and transport high-quality professional talents for enterprises, which is conducive to the rapid and sustainable development of enterprises for enterprises.

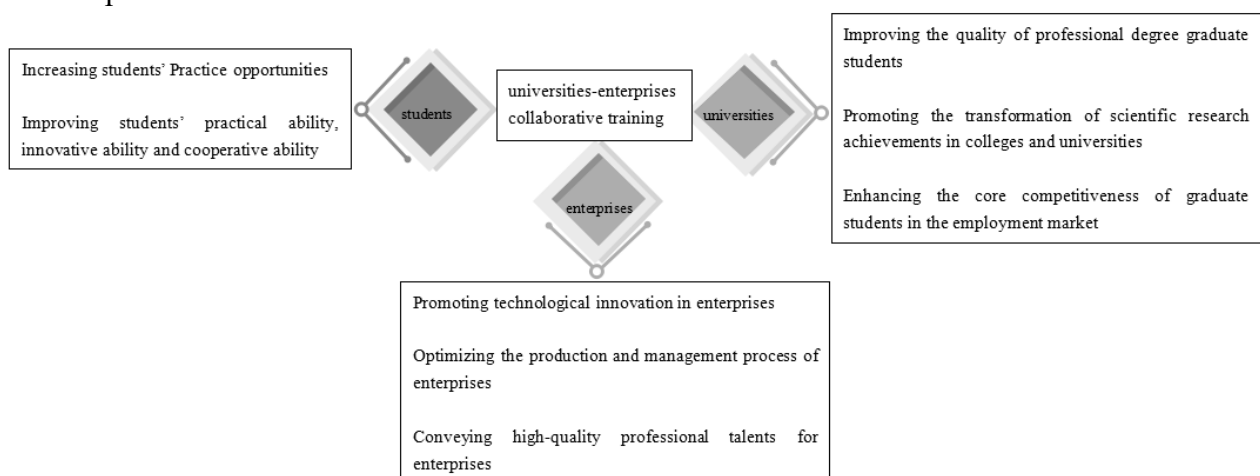


Fig. 1, The significance of universities-enterprises collaboration training

The Situation and Problems of Professional Master's Degree Postgraduates Training under the Current Collaborative Cultivation System between Universities and Enterprises

Master of professional degree is a form of postgraduate education in China. Its purpose is to cultivate high-level applied talents with solid theoretical basis and to meet the needs of specific industries or occupations. The Ministry of Education has implemented the policy of transforming postgraduate education from training academic talents to training applied talents, realizing the historic transformation and strategic adjustment of postgraduate education structure since 2011. Professional degree is guided by professional practice, attaches importance to practice and application, and cultivates high-level talents who have received formal and high-level training in specialty and specialized technology. The criteria for awarding degree should reflect the characteristics of the specialty field and the requirements of high-level talents in specialized technical work ability and academic ability. However, most universities still adopt the traditional training model of training academic and research-oriented talents. This training model often makes the engineering practice of graduate students limited in the production and management of enterprises, and it is difficult to adapt to the requirements of graduate training in local universities. Inadequate adaptability to enter the enterprise. In addition, graduate students lack the ability to adapt to enterprises after graduation.

At present, there are three main modes of universities-enterprises collaborative training in China [4-5]. The first is the "order-based" training model, which mainly focuses on enterprises. Enterprises focus on their own development needs and sign talent training plans with universities, and then universities carry out customized training according to the types of talents needed by enterprises. The second is the teaching model of "work-study alternation", which mainly carries on the repeated circulation through the "practice-study-practice" way, thus enhances the student to the theory knowledge practice application ability. The third is the training model of project cooperation. This model also adopts the "learning-practice-learning", but its practice process is to bring students into specific projects, through training and learning in specific projects, so that the professional knowledge learned in school can be effectively utilized and digested. After the end of the project practice, in view of the problems encountered in the process of practice, and then return to school for further study.

The problems faced by the current collaborative cultivation system between universities and enterprises include insufficient cooperation depth between universities and enterprises, insufficient participation of teachers and students, and the lack of stability and sustainability of universities-enterprises cooperation. Specifically, from the perspective of universities, along with the process of transition from planned economy to market economy and the reform of higher education system, local universities are gradually separated from the background of running schools in the industry and from the natural connection with enterprises in the system, so that it is difficult to cooperate in depth in personnel training [6]. From the teacher's point of view, universities have not put the important position of performance appraisal of universities-enterprises cooperation teachers. Teachers are busy with daily teaching tasks and scientific research projects, and most of them are PhD graduates who "out of school and then in school", lacking social experience. From the perspective of enterprises, the purpose of enterprises is to make profits, while enterprises lack experience in personnel training, and there is no clear goal in the process of universities-enterprises collaborative training. In addition, due to the lack of national policies and financial support, enterprises are not very enthusiastic in universities-enterprises collaborative training. From the student's point of view, most students do not pay attention to practical courses and production practice links, the phenomenon of one person completes practical work and the whole class will through is widespread. Therefore, we should actively explore the model of universities-enterprises collaborative training for professional master's degree postgraduates, encourage enterprises to participate in the cultivation of university postgraduates in depth, cultivate students' practical and innovative abilities according to the needs of enterprises and industry standards, and jointly construct the model of universities-enterprises collaborative training for professional degree postgraduates.

Construction of the Training Model of Professional Master's Degree Postgraduates under the Collaborative Cultivation System between Universities and Enterprises

Perfecting the Cultivation Plan

With universities as the main body and enterprises as the subsidiary body, a “Universities-Enterprises Cooperative Training Group for Master's Degree Postgraduates” should be set up in universities, and relevant professional teachers and relevant enterprise experts should be recruited as members of the group. The steering group should investigate the actual social needs of different majors every two years^[7], understand the social demand standards for talents in time, follow up the employment situation of graduates, and seek the ideas and opinions of graduates in professional knowledge, curriculum design, employment concept and so on. After the postgraduate enrollment, the steering group should organize a postgraduate exchange meeting to fully understand the students' motivation for postgraduate study and their future career planning. According to the above-mentioned data, the “Universities-Enterprises Cooperative Training Steering Group for Master's Degree Postgraduates” can improve the training program for Master's Degree Postgraduates in terms of curriculum, teaching methods, professional practice forms, assessment criteria and graduation requirements, so as to cultivate the practical talents with strong foundation, wide caliber and practical ability required by the society.

Establishing the Double Tutors System

Teachers play an important role in the growth of students. Establishing a team of “double tutors” of college professional and off-campus practical instructors with high teaching and guiding abilities is the key to achieve the training of professional talents. In-school tutors have obvious advantages in professional theoretical knowledge and teaching methods, while out-of-school practice tutors have rich practical experience and strong ability to solve practical problems. In terms of training assignment, in-school tutors focus on teaching theories and principles, while out-of-school practice tutors focus on explaining the content of applying professional theoretical knowledge to practical engineering cases, taking advantages of each other, giving full play to their respective advantages, so as to achieve the effect of “ $1 + 1 > 2$ ”. In addition, the “Universities-Enterprises Cooperative Training Steering Group for Master's Degree Postgraduates” should actively organize the post-graduate tutors to study the training plan and training program of the postgraduates in this major, clarify the professional orientation, training objectives, curriculum outline, and master the theoretical knowledge teaching and training system as a whole. The teaching plan of out-of-school practical instructors should be checked and checked by the guidance group, inspected and supervised by supervisors at both school and enterprise levels, so as to ensure the quality of classroom teaching and fulfill the training task.

Perfecting the Evaluation System

The training goal of professional master's degree is to improve students' practical ability and to train high-quality professional talents for enterprises. Therefore, the training units should pay attention to the assessment of students' practical ability. In the stage of production practice, the guiding model should be based on out-of-school practice and supplemented by in-school tutors. “Universities-Enterprises Cooperative Training Steering Group for Master's Degree Postgraduates” should organize and formulate production practice guidelines, objectives, contents and effective management assessment methods. The graduation project of postgraduate students is guided and graded by “double tutors”. In-school tutors evaluate students' theoretical learning ability and thesis completion. Out-of-school tutors mainly evaluate students' comprehensive performance during internship and the practicability of graduation design. In addition, we should strengthen the guidance of practical application of graduation project, improve the quality of graduation project, and reflect the results of graduation project in the production of enterprises in time, so as to contribute to the production of enterprises. Joint assessment of graduation design by teachers outside and in-school can not only make up for the regret that teachers in universities have excessive theory and insufficient practice, but also avoid the blind practice that enterprises only rely

on experience without considering its principles, which will play a two-way complementary role for students.

Establishing the Reward and Punishment System

With the intensification of market competition, enterprises pay more and more attention to their reputation, brand and social image. Therefore, enterprises are encouraged to provide experimental equipment for universities, to invest in the establishment of internship bases in universities, to establish scholarships and grants for postgraduates, to strengthen project cooperation with university tutors, and to provide funds for teaching and scientific research. It can mobilize the enthusiasm of university teachers and encourage graduate students to participate in scientific research projects. On the other hand, it can help enterprises to base themselves on the market, improve the visibility and market competitiveness of enterprises, and promote the cooperation between universities and enterprises in the training of professional master's degree postgraduates. For those students who fail to meet the standards of practical assessment and production practice, they shall be given retraining measures. For those teachers who fail to meet the standards of assessment in the co-training of schools and enterprises, the qualification of graduate tutors will be canceled next year and no students will be admitted.

Summary

Universities-enterprises collaborative training of professional master's degree postgraduates is a new model of education and training. It can effectively improve the quality of higher education, promote the overall development of postgraduates, and realize seamless docking between the output of university talents and the input of enterprise talents. Therefore, the "Universities-Enterprises Cooperative Training Steering Group for Master's Degree Postgraduates" should actively explore, constantly innovate, give full play to the advantages of schools and enterprises, make the teaching content of schools keep pace with the development and changes of the market, and ensure the smooth and healthy operation of the school-enterprise cooperative training mode.

Acknowledgement

This research was financially supported by the Tianjin Agricultural University major education reform bidding project (2017-B-00) & the Introduction to Agricultural Electrification and Automation - (2017YAL002) Construction Project of Case Teaching Course for Professional Degree Postgraduates in 2017 & the Graduate Student Innovative Cultivation Project of Tianjin Agricultural University (2017YPY020).

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