

Exploration on Effective Mechanism of University-enterprise Joint Training of Electronic Information Professional Master Degree

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Abstract: Based on the analysis of the current training mode and development status of master's degree in electronic information, this article focuses on how to build a training mode for master's degree personnel in electronic information with a deep integration of "production, education and research", aiming at the problems on campus, such as lack of mentor project experience, lack of guidance experience for enterprise mentors, lack of system support for practice base construction and imperfect evaluation system. In this paper, a talent training mode which is suitable for the training objectives of electronic information major graduate students in local universities has been established from the aspects of building a team of double tutors, perfecting the management mechanism of practice base and establishing the quality supervision system.

Keywords: School-enterprise Joint Education; Professional Master Training; Personnel Training Mechanism; Higher Education.

1. Introduction

With the rapid development of electronic information technology represented by the Internet of Things, the new generation of mobile communication technology, artificial intelligence, robots, drones, etc., the demand for high-level applied technical talents in the field of electronic information is also growing day by day, and the society's requirements for master's degree in electronic information also show new characteristics. Students are not only required to have a solid theoretical professional knowledge, but also to have better practical ability and the ability to deal with the actual project, but also to have a broad knowledge structure and more cutting-edge knowledge [1]. In view of the current social and economic construction of the new requirements for professional master degree graduate students, as well as the current professional master degree graduate training of many deficiencies [2], combined with the needs of the national electronic information industry and the environment of the school, the electronic information professional master degree graduate education belongs to the local colleges to explore a new talent training mode [3].

2. Some Problems Need to be Recognized and Solved in Cultivating High-Quality Professional Masters

At present, China's professional degree graduate education has entered a period of leapfrog development [4]. The rapid expansion of the professional degree graduate education in various universities has promoted the transformation of the graduate education from academic personnel training mode to applied personnel training mode [5]. At the same time, the problem of weak practical ability and career development ability of professional degree graduate students have become increasingly prominent [6]. It has become an urgent task for universities to train professional degree postgraduates to adapt to the development of social economy, to train them

into applied high-level specialized talents to meet the needs of specific industry or occupation, and to improve the training quality of professional degree postgraduates [7]. Through the investigation and analysis of the education and training mode of electronic information major graduate students in many local colleges and universities in China [8], combined with the ability requirements of the country and the current society for the professional degree graduate students in this field, we find some problems in the training.

2.1. The Project Guidance Ability of School Tutors is Weak

The engineering practice, research content and dissertation mode of professional graduate students are quite different from those of academic graduate students. Therefore, new requirements are put forward for the engineering guidance ability of tutors on campus. At present, tutors in most universities in our country are mainly academic researchers, most of whom are academic master or doctor. They do not have enterprise work experience and lack practical experience and professional practical teaching experience. Many tutors have not changed educational philosophy and are still cultivating professional degree students in accordance with the training mode of academic degree graduate students. Most of the training evaluation indicators are published academic papers, and the subjects that students participate in are mainly basic research, but not many applied subjects jointly with enterprises. Students' professional practical ability has not been fully trained, resulting in the homogeneity of the training model of academic degree and professional degree graduate students.

2.2. Corporate Tutors Lack Teaching Experience

Most corporate tutors lack the teaching experience to guide graduate students, which will not only affect the quality of graduate training, but also affect their choice and grasp of research topics. On the other hand, due to the lack of incentive mechanism, business mentors often regard the guidance of

professional degree students as an extra task assigned by enterprises and universities, which will generate negative emotions. In addition, enterprise supervisors are not willing to let graduate students participate in enterprise project development for fear of risks such as technology leakage and interruption of research and development process.

2.3. The Management Responsibilities of the Off-campus Practice Base are Difficult to Define

Professional practice is the extension of professional degree graduate training work to the society. Off-campus practice base is an important place for professional degree graduate students to understand and adapt to the society and improve their independent working ability and professional skills. At the same time, graduate students should complete the dissertation topic selection, proposal, dissertation research and writing, mid-term examination of the dissertation and other links in combination with the practical production of practical units in practice. Therefore, the organization of daily safety management and on-site teaching in off-campus practice base will directly affect the effectiveness of professional practice. However, the off-campus practice bases of Chinese colleges and universities mostly rely on enterprises with joint research and development cooperation basis, or rely on the personal relationships of alumni of colleges and universities, for the construction of off-campus practice bases lack of motivation, unwilling to manage or unclear how to manage the graduate students who enter the off-campus practice bases. Moreover, the enterprise has serious doubts and worries about the ownership of the achievements of graduate students in the practice base and the intellectual property rights.

2.4. The Evaluation System is not Perfect

At present, the same academic performance evaluation system as academic postgraduates cannot effectively evaluate students' knowledge and ability. It is not only unfavorable to encourage students to strengthen the cultivation of practical ability while focusing on the study of professional knowledge, but also to a certain extent, it will discourage students' enthusiasm in the cultivation of engineering practical ability.

3. Practice Exploration of Training Professional Master in Tianjin Agricultural College in Recent Years

In order to meet the demand of modern enterprises for high-level applied talents, the comprehensive reform of professional degree postgraduate education with the reform of training mode as the core has been comprehensively promoted. According to the training objectives and characteristics of professional degree talents, various measures have been taken to establish a professional degree postgraduate talent training system based on the joint training system of production, university and research.

3.1. Strengthen the Construction of Dual Mentors

A high level of supervisors is a prerequisite for cultivating high-quality research talents. The university attracts high-quality talents through multiple channels and arouses the enthusiasm of enterprise tutors. The university makes beneficial attempts in the incentive mechanism of enterprise

tutors, and strengthens the construction of both the university and the enterprise tutors to ensure the cultivation of graduate students' engineering practical ability.

The school should build a double tutor team in both hands. For tutors, on the one hand, in combination with various talent projects and teacher training measures, support tutors to carry out academic exchanges. On the other hand, in order to improve young teachers' engineering practice ability, cultivate and improve their engineering application and scientific research ability, and strengthen the communication between the industry, the university and the university and the enterprise, each college sends a certain number of young teachers to large-sized enterprises for training and training every year according to the actual situation by means of school planning, school selection and enterprise assessment. Young teachers are required to go deep into the grassroots during the training period of the enterprise to understand the production process, technology design and research and development process of the enterprise. If conditions permit, can also participate in enterprise management and technical work. For business mentors, the school regularly sends senior professors to the joint training base to teach, improve the theoretical level of business mentors. At the same time, increase the role of enterprise tutors in enrollment, training plan formulation, course teaching, paper research. It mainly encourages enterprise tutors to guide graduate students by issuing remuneration to enterprise tutors, inviting enterprise tutors to participate in the development of training programs for graduate students of professional degrees, giving lectures or setting up special lectures, participating in the opening of graduate papers, mid-term assessment, pre-defense, defense and other links, and rewarding the tutors inside and outside the school for the excellent academic dissertations of graduate students of professional degrees. Secondly, after determining the topic with the tutor, the university and the tutor sign a cooperative development agreement according to the type of topic and the primary and secondary status of the tutor inside and outside the university during the guidance process, which defines the ownership of the intellectual property generated by the cooperation between the two parties and stipulates the scope of technical confidentiality. Establish a complete management system for off-campus tutors. The university has revised the recruitment criteria and assessment system of off-campus tutors, employed postgraduate tutors based on the principle of proximity, and took the ability to solve engineering problems on site as the evaluation criteria and assessment mechanism, so as to prevent the guidance of postgraduate students from becoming an empty talk. Off-campus graduate supervisors must study the evaluation documents carefully and clarify their rights and obligations in order to effectively carry out the guidance work.

3.2. Relying on the Joint Construction of Industrial Enterprises to Build the Innovation Practice base Inside and Outside the Graduate School

Improve the operation and management mechanism of off-campus practice bases. The university should not only take multiple measures to promote the construction of innovation practice platform on campus, but also combine the characteristics of the electronic information industry to jointly build the off-campus practice base of graduate students with enterprises in the industry. By combining the construction of

innovation platform with the construction of disciplines, we will build a high-level public innovation practice platform with characteristics in competitive disciplines, and set up a variety of postgraduate innovation practice research funding projects to provide support for the independent innovation of postgraduate students. With regard to off-campus practice bases, the university has formulated the management method of university-enterprise joint construction of graduate practice bases in line with the purpose of "improving the practical ability of graduate students and enhancing the ability of graduate education to serve local economic construction". For the daily management of graduate practice bases, the university takes the management of tutors, training units and practice bases as the main body. A management system combining school, department and practice base.

3.3. Establish a Scientific and Perfect Quality Control System

The university conducts whole-process quality control over the quality of graduate education from multiple links in the process of graduate education, establishes a working group for the evaluation and guidance of graduate education quality, and forms a multi-channel whole-process quality control system based on feedback mechanism with the quality assessment group as the core. In the aspect of course teaching, the quality assessment team is given full play to monitor and evaluate the teaching effect through various methods such as questionnaire survey, symposium and online teaching evaluation. In terms of thesis quality control and evaluation, it implements the mechanism of centralized proposal, centralized pre-defense, blind review and centralized review for postgraduate students. The experts of the quality assessment team participate in the whole process of quality control of the centralized proposal, centralized pre-defense, defense and other links. For the practical topics completed in the off-campus practice base, the on-campus tutors and off-campus tutors are jointly assessed. The on-campus teachers mainly evaluate students' theoretical level, project scheme and project design, and the off-campus teachers evaluate students' practical ability, ability to deal with engineering problems, project optimization and innovation.

4. Summary

Under the new normal background of university-enterprise cooperation in cultivating professional masters, how to effectively and accurately cultivate a large number of highly qualified professional masters urgently needed by the society is a major issue that needs to be solved urgently in front of

relevant training units at present, as well as an important issue that the competent government departments need to explore and solve. This paper is based on the author's years of higher education work in the process of professional master training mode and mechanism to explore. However, summarizing experience and facing the future, find out a way to training professional master which conforms to our country truly. In fact, there is still a lot of work to do, a lot of problems need higher education workers to explore further.

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References

- [1] Jingyun Li. A Research Review on Professional Master's Education and Its Education Mode[J]. *Frontiers in Educational Research*,2022,5.0(1.0).
- [2] Fang N, Zhu Y, Wang B, et al. Research and Practice on the School-enterprise Joint Training Mode of Students [C]// *Institute of Management Science and Industrial Engineering. Proceedings of 2019 3rd International Conference on Economics, Management Engineering and Education Technology (ICEMEET 2019)*.Francis Academic Press, 2019: 1749-1752.
- [3] Ying Wang. Research on Education and Teaching Innovation of Accounting Professional Master's Degree under the Background of Internet+[J]. *Frontiers in Educational Research*, 2022, 5(16).
- [4] Liguang Wang, Changqing Yu, Luhui Xu, Jiong Zhao. Exploration and Practice of Professional Degree Graduate Student Training Method Based on Industry-University-Research Collaboration[J]. *Adult and Higher Education*, 2023, 5 (2).
- [5] Reading•Writing•Practice: The Trinity of Postgraduates Study in Education Professional Degree.
- [6] Ji Changpeng, Dai Wei. Mode Construction of Cultivating Professional Degree Postgraduate by Industry-Education Integration [J]. *SHS Web of Conferences*,2023,152.
- [7] Research on the Practice Base Construction for the Engineering Ability Improvement of the Professional Degree Postgraduate.
- [8] WANG Yachen. Research on the Construction of Ecological Teaching Mode of Oral English for Professional Degree Postgraduates [J]. *Higher Education of Social Science*, 2022, 23 (1).