Research on the Cultivation of Practical Abilities for Applied Professional Master's Graduates

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Abstract. In recent years, the scale of training for professional master's degree graduates has been continuously expanding, making the development of professional degrees a focal point of national graduate education reform. The cultivation of practical abilities is at the core of training for professional master's degree graduates. This article analyzes some of the training issues faced by local universities in training professional master's degree graduates, including outdated training models, single methods, poor implementation of the 'off-campus mentor system,' low utilization of practical value in research projects, disagreements in university-enterprise cooperation, and lack of internship experience for graduate students. Corresponding solutions are proposed to address these issues, thus improving the cultivation of practical abilities for professional master's degree graduates.

Keywords: Professional Master's Degree; Applied; Practical Ability; Cultivation Mode

1   Introduction

A professional degree possesses two characteristics: academic and vocational[1]. It requires students to have a certain level of innovative ability, to be capable of solving practical problems, and to independently undertake technical or managerial work related to their field. The Ministry of Education explicitly stated the training objectives for full-time professional master's degrees in 2009, emphasizing the importance of practical training[2]. The goal is to orient graduate education towards professional practice, strengthen students' practical and applied abilities, while also ensuring their learning of theoretical knowledge in relevant fields. This aims to cultivate graduates who can meet the specific demands of various industries as highly skilled professional specialists.

2   The Challenges in Cultivating Practical Skills for Professional Master's Degree Students

The professional degree education system has been implemented in China for nearly 30 years[3]. However, it was not until 2009 that China began to enroll full-time professional master's degree students. Therefore, compared to the gradually matured training model for academic master's degree students, local universities face many issues that need to be addressed in the training of professional master's degree students.

2.1   The Training Mode for Professional Master's Degree Students is Outdated and Lacks Innovation

Despite the active promotion of the importance of training professional master's degree students by the country in recent years, in remote areas, local universities still adhere to traditional graduate training models, focusing more on academic research and neglecting the cultivation of practical abilities for professional master's degree students[4]. Local universities tend to mimic the academic graduate training model in terms of curriculum, research learning, teaching philosophy, etc., lacking an independent training system for professional master's degree students. This results in graduate courses being primarily focused on knowledge impartation, lacking practical courses and assessment methods tailored to practical skills. At the same time, graduation requirements are also similar to those of academic master's degree students, lacking an independent system for cultivating practical abilities for professional master's degree students.

2.2   The Implementation of the 'External Mentor System' in the Training of Professional Master's Degree Students is Inadequate

Local universities still take the lead in graduate education, while the involvement of external teachers, cooperating enterprises, and industries remains limited to paper agreements, lacking detailed implementation plans and effective organization of relevant cooperative institutions. The overall implementation is poor. Adopting the "dual-supervisor system," both internal and external supervisors fail to comprehensively support students. Internal supervisors focus on imparting theoretical knowledge without integrating practical aspects, while external supervisors provide inadequate practical guidance, often serving as nominal supervisors and lacking enthusiasm for student development. With internal supervisors overseeing three to four students and external supervisors being busy, they lack the time and energy to cultivate students' practical abilities.

2.3   The Research Project Arrangements are Unreasonable, Failing to Fully Realize the Practical Value of the Projects

Local universities' graduate education model differs significantly from undergraduate education plans[5]. While the latter includes extensive practical education alongside basic classroom teaching, aimed at fostering practical skills for research innovation and future professional work, local universities encounter numerous challenges in graduate practical training. Firstly, the allocation of research funds and projects irrationally affects students' enthusiasm. Secondly, discrepancies in project tasks result in uneven skill development, with some tasks failing to fully utilize students' abilities or being merely repetitive. At times, mentors prioritize theoretical training over practical training. These issues impede students' innovation and practical abilities, necessitating measures from universities to address them.

2.4   The Collaboration Between Universities and Enterprises is Difficult, With Existing Cooperation Disagreements

Local universities lack innovation in the training system for professional master's degree students, leading to fixed thinking patterns that struggle to adapt to new training methods. Difficulties exist in cooperation between enterprises and universities, hindering the realization of "industry-education integration"[6]. The primary issue stems from differing priorities between enterprises and local universities, with enterprises focusing on cooperative benefits while local universities emphasize graduate education, resulting in inconsistent cooperation objectives. Additionally, disagreements between local universities and enterprises regarding research results, intellectual property, and other aspects often prevent deep collaboration, leading to a lack of practical experience for graduate students, an inability to meet enterprise needs, and the failure to achieve win-win outcomes.

2.5   The Lack of Internship Experience Among Professional Master's Students

During their studies, most professional master's students spend the majority of their time at the university, with short internships in companies. However, these internships often lack clarity in terms of market demand and are insufficient in providing research and technical skills. Some students actively seek internship opportunities, but companies tend to prefer candidates with prior experience. Interning students may find that the actual work does not align with their expectations, thereby affecting their learning outcomes.

3   The Solutions

3.1   Innovate the Training Model and Improve the Postgraduate Curriculum System

To distinguish between the training models for professional and academic master's students and enhance the practical abilities of professional master's students, reforms are proposed in both the training model and the curriculum system. Firstly, clear training objectives should be established, categorizing academic and professional master's students and devising training programs specifically for professional master's students. In training professional master's students, industry experience should be drawn upon to understand industry demands, establish a school-enterprise cooperation learning model, and facilitate discussions among internal and external mentors to enhance student engagement. Additionally, various extracurricular activities such as practical innovation competitions and research societies should be conducted to broaden students' horizons, enhance innovation and practical abilities, stimulate student enthusiasm, and deepen understanding of industry-related fields. Secondly, adjustments should be made to the curriculum system for professional master's students, emphasizing the cultivation of practical abilities through case-based teaching and inviting industry elites to give lectures to enhance students' understanding of the industry. Mentors should provide personalized guidance to students, and practical thinking should be enhanced through discussions on practical problems in the classroom.

3.2   Revise Traditional Mentorship Ideologies and Enhance Mentor Selection Systems

Local universities should establish a comprehensive dual mentor system to address issues related to dual mentorship. Internal mentors need to change their mindset and focus on practical training, imparting hands-on experience through classroom teaching, case analysis, and other methods, while increasing practical courses to enhance students' practical abilities. As for external mentors, there should be strengthened selection criteria, prioritizing those with extensive practical experience and available time, while abolishing the lifetime tenure system for mentors. Additionally, enhancing communication and exchange between internal and external mentors lays the foundation for graduate student training.

3.3   Establish an Integrated Platform for Innovative Practical Experiences Among Graduate Students, Combining Competitions, Academic Studies, and Research

To fully leverage the role of practical projects and cultivate the practical innovation capabilities of graduate students in local universities, a platform for graduate student practical innovation can be established. The design principles of the platform are centered around human-oriented approaches, respecting students, and stimulating their enthusiasm and innovation capabilities. Enhancing the model for cultivating professional

master's degree students, integrating resources from schools, mentors, and enterprises, strengthening platform construction, and providing innovative practice opportunities are essential. Local universities can leverage the advantages of scientific research projects and competition activities, collaborating with enterprises and governments to create platforms for education, research, exchange, and practice, thereby forming an environment conducive to innovative practice. This platform promotes students' practical innovation capabilities, fosters research and training abilities, and enhances competitiveness through scientific research projects and competitions. It deepens understanding of knowledge, promotes further innovation through discussion and exchange, achieves integrated learning, competition, and research, and fully realizes the value of scientific research and practice projects.The system of innovative practice system for graduate students is shown in **Figure 1** below.
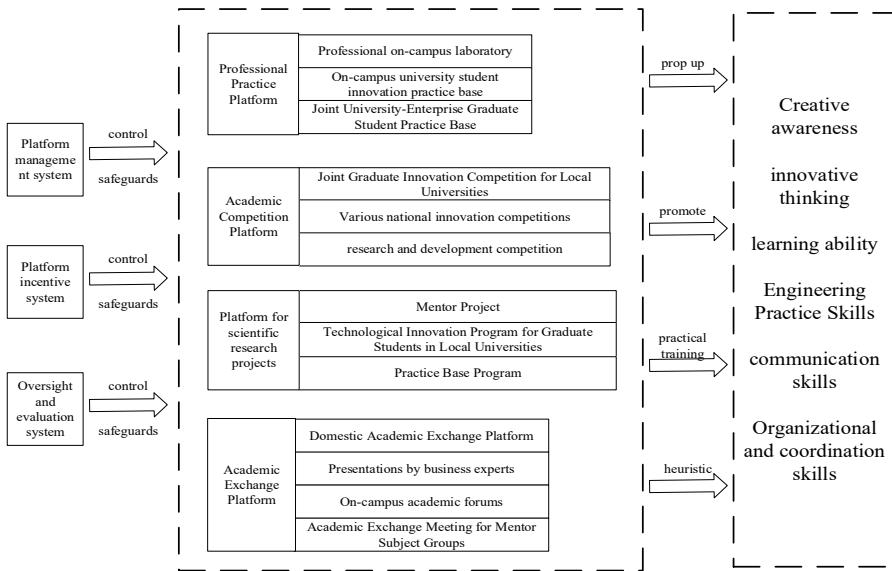

Fig. 1. Graduate Student Innovation and Practice Platform System

3.4   Strengthen University-Enterprise Cooperation to Enhance the Quality of Education

Key Measures for School-Enterprise Cooperation:①Establishing a Regular Communication Mechanism: Set up regular meetings where leaders from both schools and enterprises, along with relevant representatives, discuss the progress, issues, and solutions of cooperation to ensure smooth communication and information sharing.②Formulating Cooperation Agreements: Clearly define the cooperation content, objectives, responsibilities, resource allocation, and outcome sharing to establish a basis of mutual trust, standardize the cooperative relationship, and prevent disagreements.③Establishing a Mechanism for Intellectual Property Rights Sharing: Specify the research results and intellectual property rights sharing methods during cooperation periods, establish

a mechanism for sharing outcomes, resolve intellectual property disputes, and promote outcome sharing and transformation.④Establishing Practice Bases: Collaborate with enterprises to establish practice bases, providing students with practical opportunities to enhance their practical abilities, promote industry-university cooperation, and achieve complementary advantages, mutual assistance, and win-win cooperation between enterprises and local universities.

3.5   Establish Internship Plans with Companies to Enhance the Practical Experience of Graduate Students

Suggestions for the Lack of Student Internship Experience:①Formulating Internship Plans: Local universities should establish internship plans, requiring graduate students to undergo at least one semester of internship and collaborate with enterprises to provide internship opportunities.②Internship Guidance and Training: Provide pre-internship training, supervision and guidance during the internship period, and feedback after the internship to help students understand internship objectives and gain more practical experience.③Organizing Internship Experience Sharing Sessions: Conducted before the first internship experience for graduate students, allowing experienced students to share their experiences and insights, helping other students understand the value of internships, and providing guidance for first-time interns.

3.6   Introduce A Feedback Mechanism to Improve the Assessment System

The new training model requires the introduction of a new feedback and assessment system. Local universities should submit research results to experts and mentors for evaluation of their reliability, effectiveness, and practicality, providing feedback on the quality of graduate student training based on these results. The assessment system should adopt new approaches, focusing on practical operations and innovative designs, integrating theoretical and practical assessments to enhance students' practical abilities.

4   Conclusion

The training of professional master's degree focuses on practical abilities and innovative thinking. This paper explores the cultivation of practical abilities from six aspects: the training model, curriculum system, mentor selection, project practice, university-enterprise cooperation, and graduate internship plans at local universities, aiming to enhance the practical abilities of professional master's students.

(1)In terms of training model, it involves changing the traditional approach to cultivating professional master's students by integrating with enterprises, internship bases, and academic competitions. This integration employs various practical methods to enhance students' innovative thinking and practical abilities;

(2)Optimize the curriculum system and reform the curriculum structure. Change the traditional approach of theoretical lectures by mentors, incorporate analysis of practical

cases into classroom teaching, and organize students to visit and learn in actual experimental sites;

(3)Establish a strict mentor selection system, departing from the traditional lifelong appointment system, and removing mentors who lack responsibility, are not proactive in teaching, or lack capability. Select mentors who are highly proficient in their field, enthusiastic in teaching, and responsible. Assess external mentors to ensure their competence. Encourage students to consult mentors promptly when encountering problems, thus enhancing their theoretical knowledge and practical skills;

(4)Establish an integrated practice platform of 'learning through competition, study, and research', integrating resources from universities, enterprises, and government to provide experimental opportunities for graduate students. Through research projects and competitions, consolidate knowledge, enhance practical skills, conduct post-competition reviews, set up reward mechanisms, and inspire students' enthusiasm for learning;

(5)Strengthen collaboration between universities and enterprises to eliminate differences. Develop cooperation agreements, establish communication mechanisms, and implement intellectual property sharing mechanisms to enhance trust and achieve mutual assistance and win-win cooperation;

(6)Develop internship plans to enhance the practical abilities of graduate students. Improve graduate students' understanding of external internships and enhance internship experience through internship guidance training, internship plans, and experience sharing meetings.

Funding

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