Research on Key Issues of Enterprise Practice of Postgraduates with Professional Degree

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Abstract: In view of the short development time and inadequate practice experience, this paper comprehensively analyses the background and significance, investigates the research status of various countries, discuss the existing difficulties, and further give suggestions on enterprise practice of postgraduates with professional degree. The research results will promote the establishment of enterprise practice system, improve the effect of enterprise practice, and accelerate the reform of training scheme for postgraduates with professional degree in universities.

1. Introduction

Most of the scholars study the professional degrees of specific majors. And there is relatively little research on the differentiated training of postgraduates with professional degree. Some countries have adopted some advanced and effective teaching methods in the cultivation of postgraduates with professional degree. Universities cooperate with some scientific research institutions, actively guide students to carry out scientific research and practice activities, and improve their own scientific research ability and innovation ability. Therefore, some advanced universities mainly adopt the way of cooperation with enterprises and introduction of high-quality faculty in the process of cultivating students.

The main task of cultivating postgraduates with professional degrees is to train their creative ability and application ability to solve practical problems. The creative ability embodies the creative thinking and innovation ability, and the application ability to solve practical problems is the ability to flexibly apply the learned knowledge. Today, with the rapid development of information technology, the application of professional technology will become an important symbol of the competitiveness of talents. The cultivation of postgraduates with professional degree needs to always pay attention to the changes of internal and external environment and respond quickly. Postgraduates with professional degree entering into enterprises meets the talent training objectives of the new era, which is conducive to the combination of theoretical teaching and practical application and can promote the innovation spirit and application ability of postgraduates with professional degree. Therefore, this topic of the paper has a wide application prospect.

2. Research Status of Various Countries

The famous international scholar Burton R. Clark comprehensively discussed the higher education in Germany, Britain, Australia, Japan and the United States, and gave a detailed overview of the historical development and current situation of postgraduates with professional degree in each country [1].

The training period of full-time postgraduates with professional degree in British is usually 1 year, while the training period of part-time postgraduates is usually 2-3 years [2]. In order to give full play to the advantages of postgraduates with professional degree, British universities pay more and more attention to the joint training of postgraduates with professional degree, and cooperate
with their major enterprises, social organizations and public construction departments in different aspects and degrees. For example, Birmingham colleges have cooperated with the British Professional Golf Association to carry out the project of training and teaching senior golf coaches, specifically providing professional knowledge and skills to comprehensively cultivate the overall skills and quality level of golf coaches [3]. Nottingham University vigorously promotes the internationalization strategy. In the academic year 2013-2014, there were 2754 overseas students among 5036 postgraduates with professional degree, accounting for 54.69% [4].

The training of postgraduates with professional degree in the United States developed relatively early and began in 1993, so a relatively sound training system has been established [5]. Taking postgraduates with nursing degree as an example, the training goal is to cultivate postgraduates to master nursing professional technology and have solid professional knowledge and strong practical ability to solve practical problems in nursing specialty field [6]. Cultivation focuses on training senior nursing talents who have the skills and methods to solve difficult problems in clinical practice and the ability to independently undertake nursing [7]. The training plan is jointly formulated by universities and enterprises to combine teaching and practice, which is one of the characteristics of postgraduate education in the United States.

The university-enterprise training mode in Japan takes the combination of industry with universities as the core, and pays attention to jointly training high-level professionals with enterprises. Through the cooperation of scientific research projects with social research institutions, enterprises and private units, the quality of applied talent training has been greatly promoted.

The training of postgraduates with professional degree in Australia is to highlight the cultivation of practical ability in the curriculum system and add experimental and practical courses to compulsory links. Combined with the characteristics and requirements of each major, the practical application courses are reasonably set according to the type of students [8]. At the same time, diversified teaching methods are adopted, such as group discussion, case teaching, online education, and distance education. Students like this diversified teaching methods very much and have achieved good teaching results [9].

One of the main features of German is “plate”, that is, when setting the curriculum system, curriculum learning modules are established. Each curriculum learning module is composed of several courses related to the topic. The span of a course section is up to two semesters [10]. ASIIN is currently the only authority in Germany qualified to certify engineering, electronic and information engineering, computer science and technology, material science and engineering and mathematics. It is advocated by VDI, the largest German engineer Association.

3. The Obstacles to Enterprise Practice

There are many obstacles to the university-enterprise joint training. In the actual joint training process, some enterprises do not fully understand the training tasks of postgraduates with professional degree, or the enterprises themselves have no research needs and only serve as post internship, which do not achieve the purpose of joint training of postgraduates. Some enterprises are concerned about whether postgraduates can bring economic benefits to enterprises, and easy to ignore the cultivation of professional practice ability and scientific research ability of postgraduates. Some enterprises even regard postgraduates as cheap labor, which leads to the lack of real exercise and improvement of professional practice ability.

There are still some problems from universities in the enterprise practice of postgraduates with professional degree. The universities are the main sector for cultivating postgraduates and play a leading role in cultivating postgraduates. The faculty, laboratory conditions and practice bases in the universities can not keep up with the growing needs of postgraduates, which leads to the lack of practical ability training of postgraduates with professional degree. However, some tutors are unwilling to send students for internship, and the quality of some postgraduates’ dissertations do not meet the requirements of innovation and theoretical depth. The topics of the dissertations for the joint-training postgraduates often come from enterprises. Their tutors may not understand the content of the dissertations, and there are risks of the lack of the quality control of postgraduates’
dissertations.

In addition, tutors undertake heavy scientific research tasks in universities, and enterprise practice of postgraduates may make the loss of scientific research strength and affect their own scientific research tasks. The postgraduates guided by tutors show a downward trend in universities. Tutors need postgraduates to complete projects and are unwilling to send students to practice in enterprises.

At present, the system of university-enterprise joint training is not perfect. Improving the application ability and innovation ability of postgraduates not only depends on the guidance and education of tutors in the universities, but also benefits from a perfect practice base. Due to the insufficient number of professional practice bases and the lack of corresponding management system, the quality of professional practice activities cannot be guaranteed. Postgraduates only stay in the stage of theoretical cognition, and the role of practice bases is not obvious.

4. Suggestions on Enterprise Practice

4.1 Literature Research

Relevant literature should be studied. The educators should understand the training characteristics, current progress and latest achievements of postgraduates with professional degree in universities in detail, and summarize the successful experience of professional training. The management in universities should appropriately study and introduce the main teaching modes adopted by top universities in developed countries on the cultivation of postgraduates with professional degree, summarize the experience in successful cases, and make innovative improvement and adjustment in combination with the own actual situation in the cultivation of postgraduates with professional degree.

4.2 Experience Absorption

Through investigation, questionnaire survey, tutors' discussion and data analysis, the management in universities should master the current enterprise practice situation of postgraduates with professional degree, understand the confusion and concerns of teachers in the universities, consult experts on measures for differentiated training, investigate postgraduates' expectations for classified training and joint training, analyze the existing problems and contradictions, investigate the successful experience, and conduct face-to-face exchanges with representative universities and enterprises to learn their successful practices in classified training, joint training and different evaluation standards for professional dissertations.

4.3 Key Issues Investigation

Key issues of enterprise practice of postgraduates with professional degree should be sorted out, and practical measures suitable for the actual situation of postgraduates with professional degree should be put forward, including practice requirements, joint training mode, evaluation standards and so on. Through the methods of literature research, investigation, expert interview and practice, the management can sum up the key issues such as management system construction, enterprise selection, faculty building, talent training mode optimization, talent training scheme reform, enterprise-university cooperation, process management and quality monitoring.

4.4 Theory and Practice Combination

Theory and practice should be combined to verify the feasibility and effect of enterprise practice in the process of implementing. With the full implementation of quality education as the goal, the management in universities should actively carry out the exploration of the enterprise practice mode of postgraduates with professional degree, and effectively improve the application ability and innovative spirit of postgraduates with professional degree through enterprise practice.

5. Conclusions
The number of postgraduates with professional degree is increasing year by year. According to the training objectives of postgraduates with professional degree, enterprise practice has become one of the important ways to cultivate postgraduates with professional degree. This paper combles through the key problems of enterprise practice of postgraduates with professional degree, and the research results on the topic will lay a theoretical foundation for the enterprise practice of postgraduates with professional degree. So it has high popularization and application value.

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References