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Research On The Cultivation Of Postgraduates' Innovative Ability In The Pattern Recognition And Intelligent System

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ABSTRACT: ***Cultivating innovative talents is not only the tactic demand of the higher education in the new period but also the important duty of our society. This paper analyzes and discusses the main problems existing in cultivating postgraduates' innovative ability in the pattern recognition and intelligent system, such as the simplistic curriculum system and training program, lack of professional innovation platform, imperfect innovation environment, and inadequate evaluation mechanism, which make students' innovative ability has not been substantively improved. In view of these problems mentioned above, some strategies are proposed, which include the innovation of curriculum system and training program, establishment of a more perfect innovation platform, optimization of innovation environment and reform of evaluation mechanism. The research and practice results show that these strategies will improve postgraduates' innovation consciousness, innovation cogitation and innovation skills.***

KEYWORDS: ***education reform, intelligent system, innovative talents, pattern recognition, postgraduate education***

I . Introduction

The pattern recognition and intelligent system[1] which the main research contents include image processing and analysis, pattern recognition, artificial intelligence, network control system and so on, belongs to the second class discipline of control science and engineering. This discipline is engaged in training senior specialized talents with rich experiences and skilled at research and development in this area. Therefore, with the rapid development of automation technology in many fields, it is necessary to strengthen the cultivation of innovative capacity of the professional postgraduates.

This paper, taking the postgraduates whose major on pattern recognition and intelligent system as research objects, pays attention to stimulating their interests in learning, encouraging their creativity and enhancing their practical ability. All these can help students to become high quality innovative talents for social development.

II . Problems of Cultivating Postgraduates' Innovative Ability

To meet the needs of social development for high quality innovative talents, in recent years, many top universities in the world pay more and more attention to the cultivation of postgraduates' innovative ability[2,3].

In the United States, many postgraduates are required to learn subjects as many as possible to broaden their professional knowledge[4,5]. Therefore, many universities are taking some strategies to promote the development of students' professional ability, such as regularly carry out academic exchanges and professional practices, which are conducive to the cultivation of students' creative thinking and creative ability[6,7 and 8].

In China, some universities have carried out a series of researches and also organized some academic exchanges about the cultivation of postgraduates' innovative ability in the pattern recognition and

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intelligent system[9,10 and 11]. For example, China's higher colleges can absorb the advanced experience of the California Silicon Valley Fremont Campus of Devry University, actively carry out teaching reform and practice, and try their best to build a practical and effective learning platform for students' innovative development[4]. However, there are some shortages, such as imperfect school curriculum system and training program, inadequate evaluation mechanism and so on. Thus, we make a concrete analysis through surveys. Presently, the following problems are outstanding in many universities, as shown in Figure 1.

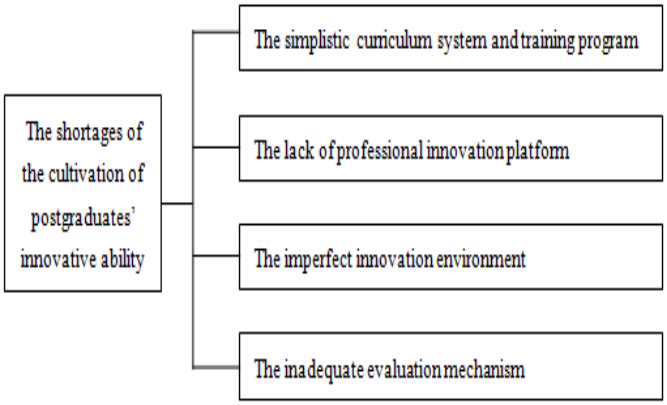

Figure 1: The shortages of the cultivation of postgraduates' innovative ability

(1) The simplistic curriculum system and training program

At present, the basic subjects teaching hours in the pattern recognition and intelligent system major are close to half of the total hours, while the professional degree courses teaching hours account for only about thirty percent. Meanwhile, in the course of teaching, most teachers pay more attention to basic knowledge teaching, but ignore students' innovative ability and professional scientific knowledge. So, many students have poor frontier knowledge, which will lead them not to meet the needs of scientific research and technological development.

(2) The lack of professional innovation platform

The cultivation mode of our universities is closed rather than open. It displays mainly: when students are in the universities, they just study the courses, but do not contact scientific research and hi-tech products, so their science and technology view is not so wide, scientific thought is not active and professional knowledge is disjointed with their work. Moreover, some universities can hardly establish so friendly cooperative relations with each others because of the shortage of funding and other factors, which will lead to postgraduates' innovative ability has not been improved.

(3) The imperfect innovation environment

At present, universities are lack of loose and free study environment, lack of atmosphere formed by students' personalities, potentialities and interests. In the training process, postgraduates have no enough strong academic atmosphere, infrequent academic communication and little of the innovation consciousness. Furthermore, this kind of innovation environment depending on public infrastructures has some disadvantages, for example, library books update efficiency is low and library retrieval mechanism is not perfect, so we should find an effective innovation environment to provide students with more opportunities to learn and practice.

(4) The inadequate evaluation mechanism

Effective evaluation mechanism is an important guarantee for the cultivation of students' innovation ability. Postgraduates focus more on the assessment of their quality and ability than undergraduates who pay more attention to the academic basic knowledge and basic training assessment. The existing quality evaluation mechanism of postgraduates education focuses too much on students' test marks, while ignoring the cultivation of postgraduates' innovation ability, so it is more difficult to discriminate postgraduates' innovation ability and new consciousness.

In many universities, these problems mentioned above have seriously affected the development of postgraduates' innovative ability. Thus, it is necessary to reform the current cultivation plans for postgraduates' innovative ability, so as to lay a solid basis for training high quality innovative talents.

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III . Reform of Cultivation Plans of Postgraduates' Innovative Ability

In the era of rapid development of science and technology, how to cultivate postgraduates' innovative ability is a common problem that many colleges are facing. Based on the problems mentioned above, through the experience on talent cultivation plans in the few years, I think the following aspects should be reformed first.

(1) To innovate the curriculum system and training program

Reasonable curriculum system and training program can make postgraduates have more complete knowledge structure, cultivate postgraduates' innovative ability and inspire their innovation awareness. Therefore, we should not only pay attention to the forefront of basic courses, but also emphasize the importance of professional courses. Moreover, we need to update teaching content in time, widen specialty settings, enhance the pervasion and combination of arts and sciences, reduce the specialty limit, which can ensure that students can have higher comprehensive quality and flexible mind.

(2) To build a more perfect innovation platform

It is a necessary tendency for higher education's development that universities cultivation mode transforms from a closed mode into an open mode. So, first of all, we can set up the intramural innovation platform, and adjust the cooperative relationship between the departments of the school in order to promote the sharing of scientific and technological resources. Then, we can build the innovation platform with other schools to improve collaborative innovation for different researchers in the same goal. Finally, we can construct innovation platform between schools and enterprises to optimize postgraduates' application knowledge network and expand their outlook, which can promote technological innovation and industrial upgrading.

(3) To optimize the innovation environment

Firstly, we should increase students' time to study themselves, discuss with each others, so students have opportunities to think independently and show their ability. Secondly, we should maintain and update the experimental infrastructure in time to ensure that postgraduates have a favorable scientific research environment. Meanwhile, the library retrieval system should be reinforced to set up efficient and smooth channels for information acquisition. Lastly, we should increase the special fund to carry out more science and technology activities, and enlarge reward for the high quality papers published by postgraduates in order to stimulate their innovative ability.

(4) To reform the evaluation mechanism

We must focus more on the assessment of postgraduates' quality and ability, rather than just through students' test marks. In addition, we should pay attention to the diversity of examination form and enlarge the assessment proportion of academic papers, research reports and extracurricular innovation achievement, so that postgraduates can get out of the test-oriented education. Postgraduates can understand and perfect themselves through the continuous improvement of the evaluation mechanism.

IV . Conclusion

Universities are knowledge innovation places and important parts of national innovation system, and they take the mission of knowledge innovation, knowledge teaching and talent training. As the starting point and destination point of postgraduate education, the cultivation of postgraduates' innovative ability in the pattern recognition and intelligent system is a comprehensive and systematic project.

In this paper, the current development situations about the cultivation of postgraduates' innovative ability in the pattern recognition and intelligent system are illustrated and corresponding strategies are pointed out. These strategies are to actively promote postgraduates' innovative ability, constantly improve their cultivation quality.

Through the education reform that is mentioned in

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this paper, postgraduates can understand that the purpose of postgraduate education is the ability training and knowledge innovation, rather than simple accumulation of knowledge and theoretical verification. In conclusion, universities must constantly explore new ways for cultivating talents with interests, personality and ability in order to keep up with the pace of development of the times.

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