Research on Critical Control Points and Promotion Mechanism of Doctoral Cultivation Quality—a Practice of Management Science and Engineering in Jiangxi University of Finance and Economics

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Abstract. Main factors that influence the quality of doctoral cultivation including discipline, academic atmosphere, teacher level, course learning, daily management, scientific research conditions, grant system, personal factors, quality guarantee mechanism, and so on. The study shows that admissions, degree thesis, and doctoral supervisor are the most important steps in the process of doctoral cultivation. Through the practice of Management Science and Engineering doctoral degree of Jiangxi University of Finance and Economics, this study explains that how to use corresponding mechanism to improve the quality of doctoral students’ cultivation.

Introduction

As the acknowledged elites of international educational and academic circles, the cultivation of doctoral students is different from general talents. As it has special, profound and innovative features, and plays an inestimable role in scientific research, knowledge creation and application of science and technology, economic development and social progress of a country or a region. Entering the new century, with the expansion of the doctoral student enrollment scale and students’ number, the training quality has attracted extensive attention from all sides of society. Doctoral education, as the sign of education level, is located in the highest level of education system. How to improve and ensure the quality of doctoral education is an extremely urgent task for higher education in China.

Literature Review

Researches have been made a lot on the related influence factors of doctoral cultivation quality at home and abroad, and they are embodied in the form of researches, academic papers, works and achievements. Some even explore active practice in work directly. In China journal full-text database, the number of the retrieved papers that use "doctoral training quality", "doctoral education (training) quality" as the search keywords, is about 139. Eliminating some conference, communication and awards that have been reported, the number of related papers is about 126, from January 2011 to December 2015. These academic papers are mainly distributed in degree and graduate student education, the study of graduate education, the education management of colleges and universities, the higher education research, China's higher education, China higher education research and other journals.

Researchers exploration to the mechanism and practice of promoting quality of graduate education, mainly concentrated in the following three aspects:

About the Connotation of the Training Quality

At present, the definition given by academic circles about cultivation quality is varied. For example Li Li thinks that doctoral cultivation quality, refers to the quality and ability of a PhD graduates when they are awarded the diploma, and embodies the quality of doctoral student during his doctor degree. The main evaluation index of it include innovation ability, knowledge level, scientific
research ability, organization and coordination ability, ability to meet the social demand and social contribution, academic productivity, etc. [1]. Some scholars think[2], looking from the dimension of subject, the doctoral education should pay attention to the inherent logic and correlation of discipline development, and emphasize the graduate student’s knowledge base and the sufficient degree of preparation for future research; from the social dimension, doctoral cultivation should take meeting the market demand, in particular, employers’ requirements about graduate student’s knowledge, skills, and quality, and regard the ability to adapt to market changes as evaluation criteria for its quality; From the dimension of individual, doctoral education should meet the demand of educatees’ free, comprehensive and harmonious development, especially regard the extent of improving the whole human society’s living conditions, and the all-around progress as the judgment criteria for education quality. Some scholars also proposed that concepts of PhD graduates quality can mainly be divided into four aspects, academic achievement-oriented quality view, career-oriented quality view, academic training-oriented quality view and benefit-oriented quality view. Educatees (pursuing and completed doctoral student) and educators (doctoral supervisors and graduate students’ education director) generally attach great importance to the innovation ability and scientific research ability of doctoral students [3].

The Main Factors about Influencing the Quality of Doctoral Education

The main factors about influencing the quality of doctoral education include discipline, academic atmosphere, teacher level, course learning, daily management, scientific research conditions, grant system, personal factors, quality guarantee mechanism, etc.

Doctoral Graduate Student Quality Promotion Mechanism

The appearance of high-quality doctors is the result of multiple factors including supervisor, student, training environment. Minxes Ma etc. found that [4], a supervisor pays more attention to exert students' subjective initiative in the process of cultivating high-quality doctoral students, which is beneficial to enhance students' sense of academic achievement and sets up the independent academic character as soon as possible, based on the retrospective evaluation of people who is the winner of the "National Excellent 100 Doctoral Dissertation" program. Zhang points out [5] that method of recruitment, scientific research, dissertation, teacher guidance have significant positive relationship with training quality through the empirical study about the relationship between elements of doctoral education modes and the training quality in Shanghai Jiao tong University. This shows that strengthening method of recruitment, scientific research, dissertation, supervisor guide is beneficial to improve the quality of doctoral education. Fallen Qin, etc. have studied the doctoral education quality guarantee system which regards improving the quality as the fundamental [6], centering around "A center", activating "two subjects" (teacher, graduate students), promoting "three combination" (the close combination of the graduate student education with discipline construction, the graduate cultivation with the innovation of science and technology, research with reform, construction and management), implementing the strategy of "four-fold integration" (doctoral enrollment index, cultivation of excellent doctoral dissertations) that high-quality students leaning to talent (team), the key disciplines, the key scientific and technological innovation platform and the significant project.

From the related research results and practical measures of the quality of doctoral students abroad[7-13], we have found that the developed countries have their own characteristics in training doctoral students because of differences about the development history of modern higher education, economic level and social environment. They fully recognize that academic guidance and academic atmosphere play an important role in doctoral education, paying more attention to the individualized education of doctoral students, giving prominence to the core idea of "innovation"; they emphasize the significance of the interdisciplinary and international perspective while training high quality doctoral student, hoping to cultivate a "compound" talent; they have a clear view that doctoral students are valuable resources to the country under the circumstance that the competition become more and more competitive in society, and from the government to the related organization, all social sectors have the obligation to participate in the doctoral education training.
The Key Points of Improving the Doctoral Training

With the increasing development of the higher education, recently, the scale concerning to the doctoral program has been extending increasingly in China. The problems of the doctoral program have been drawing considerable attention. By implementing the research of training program and fundamental requirement involving Management Science and Engineering with regard to some dozens of universities in Jiangxi province, the main step of doctoral training program can be summarized as following aspects:

Individual Training Program

The doctoral individual training program can be established based on the research field of the respective discipline, mainly combining the advantage of individual scientific research and the demand of the major. The training program must be in accordance with the basic requirement proposed by the college regard to the doctoral individual training program, furthermore, combining the doctoral own characteristics, specify the width and depth concerning to basic theory and major knowledge which the doctoral should satisfy, show the capabilities that the doctoral engage in science research independently and reach the basic requirement that the nation give to the gainer of the doctor.

Course Study

The doctoral course can be generally divided into the following two categories: firstly, public course, include English, politic and the basic course of the discipline; secondly, the chosen course resulted from the discussion with the supervisor, including the major core course and elective course. Learning time of the course that needs the examination or the check is usually one year.

Middle Check

According to the training program of the subject and the individual training program, check whether the doctoral course study and the study grade satisfy the requirement. Under the circumstance where finishing the normal course and the degree, give a comprehensive examination with regard to the basic theory and major knowledge, emphasizing the capability of the doctoral science research.

The Selection of the Degree Paper

High quality of the selecting paper is a prior to complete a high quality doctoral paper; an excellent selecting paper is equal to the half completion of the doctoral paper. The selecting paper works to check whether the previous basic research is sufficient, whether the selected paper is appropriate to be a doctoral degree paper, whether the time of starting the research of the degree paper is mature. When the doctor write the selecting paper, it is necessary to report the preparing work of the paper to the supervisor and experts who major in the same discipline, including the title of paper, the aim and necessity of the research, the foreign and domestic research process, the technology route of the paper research, the arrangement of the process, the technical difficulty of the paper needed to be solved and the innovation of the paper etc, and inviting peer experts to evaluate is also necessary.

The Degree Paper Writing

Writing the doctoral degree paper is a crucial step of the training work of the doctor graduates. The doctoral degree paper is a primary basis to check the doctoral capability in science research and the major quality, and must be an expression and a summary of the research’s achievement.

The Evaluation and Reply of the Degree Paper

After the completion of doctoral degree paper, organize the pre-reply at first, according to the advice of the pre-reply group, doctor improve the paper, and then submit the degree application, entering the step of the paper evaluation. Before the formal reply, evaluate the degree paper, which is one of important tool to check the doctoral degree paper for the respective doctor education unit. The evaluation of the paper is divided into two types including concealed evaluation and open evaluation, whereas, the concealed evaluation is prevalent in every units so as to guarantee the evaluation quality and to avoid some factors not caused by the academy.
According to the above steps and our practice in long-term, the guarantee of the doctoral quality mainly focuses on three aspects including the enrollment, the degree paper and the supervisor. Firstly, the enrollment is the source of selecting doctor, also a prior to guarantee the training quality. Chinese education of the doctor has got large achievement, but there exists a big gap between our country and the developed country regard to the level of science research. In the seminar involving the doctoral supervisor, the doctor and those administers who work on training doctor, it is general to all that knowledge and technique can be improved in short time, compared with the capability of innovation, the capability of innovation may be formed gradually in the process of the development of the knowledge and technique, being closely related with the innovative consciousness and the innovative potential. Secondly, the doctoral degree paper is a primary symbol of the training quality of the doctor. The doctoral education is the highest level of the high education, which extensively represents the total level of national high education. The level of the doctoral degree paper is the primary symbol of the measure of the training quality of the doctor. Thirdly, the construction of the doctoral supervisor group is crucial to improve the training quality of the doctor. The doctoral supervisor who is in high level can anticipate the developing direction of the subject, standing on the academic frontier.

The Practice of the Improvement of the Doctoral Training Quality

Management Science and Engineering in Jiangxi university of Finance and Economic received the first level doctoral degree in 2003 and received high-level discipline in 2010, furthermore, the Management Science and Engineering is first ranking among all Finance and Economic colleges and universities in the discipline evaluation organized by the Ministry department in 2012. The doctoral degree of the Management Science and Engineering is in the first lever, including Information Management and Information System, Electronic Commerce and E-government, Economic Control Decision and analysis and Service Computing and Applications which are second-rate disciplines. In the process of the improvement of the doctoral training quality, our primary measures are included as follows:

Doctoral Enrollment

It is permitted to register the respective major, not the supervisor. After achieving minimum passing score, by organizing an expert interview which consists of the doctoral supervisor and the professor, make an evaluation score for the candidate’s reexamination based on three steps including basic of major theory and science research, the major frontier and the potential of science research, the comprehensive capability. After passing the reexamination, make a two-way selection on site so as to specify the supervisor. In order to extend the autonomous right of the doctoral supervisor, the “apply-check” system will use in 2016.

Course Study of the Doctor

In the course study of the doctor graduate, specially focus on the training composed of basic theory and research way of the graduate, set up Research Methodology for Management, Empirical Research Method, and System Dynamics, Advanced Econometrics, The Statistical Software Application of Behavioral Decision etc. For partial course, specially engage the experts from outside the university.

Degree Paper of the Doctor

All the doctor degree paper must be blindly audited in the platform of the Ministry department from 2015, one score for agreeing to reply, 0.5 score for revised reply, 0 score for not reply, only the score meet 3 score or more by five experts, it is permitted to proceed a formal reply, otherwise, delay to deliver audit for half year. To give a rigorous barrier via the measure of the starting paper and pre-reply, the student who rank at the bottom regard to the requirement of the starting paper and pre-reply need to start paper and reply twice after revising the paper.
Incentive System of the Doctor

The school provides outstanding environment of the science research for the doctor graduate, the doctor enter the team laboratory which belong to the respective supervisor, so as to facilitate the communication of science research. Provide one machine position and one computer to each student in the laboratory so as to facilitate the science research. Positively implement “Four Early” (enter the team early, enter the entry early, enter the laboratory early, enter the practical department early), hardly improving the graduate training quality.

Main Effectiveness

Recently, Management Science and Engineering has received some achievements. Achieve the excellent doctor degree paper in Jiangxi province in 2013 and 2014, gain more than 30 graduate innovation funds about specialty entries of Jiangxi province in recent 5 years, and establish more than 30 domestic authorized research papers and more than 20 SCI periodical papers.

Conclusion and Advice

According to the connotation analysis of the doctoral training quality via the university at home and abroad and scholars, the analysis of the factors that influence the doctoral training quality include the level of the subject, the research atmosphere, the level of the supervisor, the course study, daily management, research condition, the award system, individual factor, ensuring quality system etc. we think that the key point to improve the doctoral training quality is the doctoral enrollment, the degree paper and the doctor supervisor, which are three most crucial steps in the process of the doctoral training and interdependent.

The improvement of the doctoral training quality is a systematic engineer, which needs to strengthen the regulation in enrollment, source, course, research, paper and supervisor etc, advising the related department in university to establish respective encouraged measures in order to guarantee the improvement of the doctoral training quality from the regulation.

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References


