The Research on the Quality Assurance System of Postgraduate Education for the Full-Time Professional Degrees

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Key words: Professional degree graduate students, Ability oriented, Questionnaire investigation, Quality assurance system.

Abstract. To build a new ability-oriented quality assurance system, we have made a questionnaire investigation on the basic demands of the students and made an in-depth analysis to the goal of quality assurance system. According to the results of the analysis, the author thinks that the school should reform the quality assurance system from the four angles of the training plan, teacher staff, curriculum system, evaluation system and presents ideas for optimizing these four angles at the latter part of this paper.

The Connotation of the Quality Assurance System of the Ability Oriented Full-time Professional Degree Graduate Students

This paper based on three concepts of full-time professional degree graduate students, quality assurance system and ability oriented, which deeply analysis the connotation of the quality assurance system of the ability oriented full-time professional degree graduate students.

Full-time Professional Degree Graduate Students

The training target of professional degree graduate students is to produce high level professional talents with compound abilities of engineering technology and management, which divided in to full-time professional degree graduate students and part-time professional degree graduate students. The recruit target of full-time professional degree graduate students is fresh graduates.

Quality Assurance System

The quality assurance system of higher education comes from enterprise quality assurance system, which aims to ensure the quality of education and improve its effectiveness and efficiency. The definition of quality assurance system is “The whole of higher education quality assurance is the restriction and cooperation between the various elements of the system which affect it.”[1]

Ability Oriented

The main feature of full-time professional degree graduate students is “Ability oriented”, which means all teaching activities aim at developing students’ ability of practice. We should reform the outdated part of the traditional training program which violate the ability oriented principle and finally make the professional degree graduate students quickly adapt to the working environment to create value for the society.

Demand Analysis of Quality Assurance System Based on Questionnaire Survey

The key to the research of the quality assurance system is to understand the current views of professional degree graduate students to their own education situation. At present, most researches about quality assurance system are still in the exploratory stage, and there is no general pattern for
the universities. Therefore, we should start with the basic needs of the students to set up a system for students.

**Design and Reliability Test of the Questionnaire**

In order to investigate the current situation and problems of graduate education and training of full-time professional degree graduate students, the author takes Wuhan University as an example and designed a questionnaire named “The questionnaire of education reform for full-time professional degree graduate students in Wuhan University”. There are 129 questionnaires in all. We had received 91 questionnaires back, which included 89 valid questionnaires accounting for 69% of the total.

After the questionnaire design, we should make a reliability test for it. Reliability test refers to the analysis for the accuracy of the structure of questionnaire, namely the analysis for the reliability of its results under repeatedly use. At present, the most popular one is Cronbach’s alpha, which is used to test the internal consistency of the data. This paper used SPSS19.0 to do the reliability test of the questionnaire. The test results are shown in Table 1. According to the basic theory of reliability test, if the Cronbach’s alpha were greater than 0.9, we could believe that the questionnaire is reliable.

<table>
<thead>
<tr>
<th>Cronbach's Alpha</th>
<th>Number of items</th>
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<td>.987</td>
<td>41</td>
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**Statistics and analysis of the Questionnaires Results**

Due to the space limitation, this paper will analyze the key parts and problems of the questionnaire.

![Figure 1. The adaptability between course setting and actual demand.](image)

**The Adaptability between Course Setting and Actual Demand**

The result of this question was shown in Figure 1, which indicated that the current course setting of the professional degree graduate students was not appropriate, and it could not fully meet the needs of students for school teaching and future engineering practice. This situation requires the manager to establish the appropriate system to regulate the course setting.
The Combination between Practical Application and School Teaching

The result of this question was shown in Figure 2, which indicated that most teachers who guide the professional degree graduate students can combine the theory with practice. This situation is worthy of recognition. In the construction of the quality assurance system, we should insist on this advantage and try to reduce the empty talk.

The Implementation of Double Tutor System

The result of this question was shown in Figure 2, which indicated that the implementation of double tutor system is not optimistic. At present, most of the students don’t have a tutor from outside the school, which is the problem that needs special attention in the construction of quality assurance system.

![Figure 2. The combination between practical application and school teaching/ The implementation of double tutor system.]

Questionnaire Summary

(1) The training system of professional degree graduate students is not perfect yet, and the feature of ability oriented is not obvious. We should reform the training plan, teaching form and do reform on other aspects in order to guarantee the ability training of professional degree graduate students.

(2) Double tutor system is urgently needed to be implemented.

(3) Professional degree graduate dissertation is too biased to the theory research and neglected the actual operation. We need to optimize the professional degree graduate dissertation and make it into the guarantee of students’ practical ability.

(4) School teacher should combine the theory with practice in teaching.

Target Analysis of the Ability-oriented Quality Assurance System for Professional Degree Graduate Students

(1) Training plan optimization: Training plan is the basic guarantee of quality. But in the course setting of the pre training program, the proportion of public course and professional theory and professional practice is not reasonable. The practicality and comprehensive of the courses are not strong enough, the course system still have frontier and international problems. These problems are not conducive to the comprehensive improvement of the overall quality of professional degree graduate students. The revision of the training plan should base on teaching the basic theory and method, at the same time, we should do researches on the training situation and employment market research to outstand the ability training. On the angle of curriculum design, we should pay great attention to the training of comprehensive quality, innovation ability and adaptability. On the angle of basic theory, the application of knowledge is emphasized. In foreign language learning, we should emphasize on improving the practical level of foreign language of the students, by which to
make them be able to translate, read professional reports, writing projects, etc. Important courses can be jointly set up with large enterprises.

(2) Optimization of teaching staff: The teaching staff system includes all the teachers and the research team, and the teaching staff and the double tutor system are the key point of this system. The biggest difference between the graduate students and the professional degree graduate students is that the professional degree graduate students have a dual tutor system, that is, the school teacher focused on theoretical knowledge and scientific research work, the external tutor is the technical staff of the enterprise, which guides the students’ ability of engineering practice. In western developed countries, teachers in university generally have the working experience in the production of the first line, otherwise it is difficult to do the teaching tasks in the university. But in China, the majority of teachers who are engaged in professional degree education have been engaged in academic guidance in university. They are generally in accordance with the training of academic master’s approach to train the professional master, it is difficult to fundamentally improve the working ability of professional degree graduate students. Therefore, in order to guarantee the teaching quality of the professional degree graduate students, we must make a substantial optimization of the existing teachers.

(3) Curriculum system reform: The training target of professional degree graduate students is to train the high level specialized personnel with the ability of the compound application. The setting of the curriculum should be more extensive, and it also needs to be reflected in the consistency of the same field with other academic masters. In addition to the basic theory, the curriculum should reflect the practical teaching requirements and improve the students’ practical ability. At the same time, school should do researches on the future jobs that students may be engaged in. The school could put the pre job training of the students’ potential future job in to the course system, which can make the students more quickly adapt to the works after they graduate.

(4) Evaluation system optimization: New ideas should be used in the teaching evaluation of professional degree graduate students. University should cooperate with enterprise and encourage students to use their spare time to the enterprise for production practice. University can according to the report given by the enterprise to give the students final or graduation appraisal.

Construction of Quality Assurance System for Full-time Professional Degree Graduate students

Training Plan

In order to reflect the characteristics of professional degree, we should separate full-time professional degree graduate students from academic graduate students on the setting of training plan. Most of the professional degree graduate students are fresh undergraduate who have passed the graduate students enrollment examination, so their basic learning ability is same as the academic graduate students’. The training scheme design of professional degree graduate students should take both theoretical study and practical ability training into consideration. So we should add the content that the students may use in their future work into the plan and reduce the credits of theoretical study. Increasing the learning hours and credits of production practice, engineering practice and other courses and improve the practical quality of this kind of course. At the same time, strengthen the contact with the enterprise, firmly grasp the basic needs of enterprises for the talent and according to the work needs of enterprises to design the training program, effectively improve the status of practical courses. Specific training plan design process is as follows:
Teacher Staff

(1) Allow school tutors to work part-time in the enterprise. This measure can improve the engineering practice ability of the tutors in university and greatly reduce the situation that teachers can’t combine theoretical knowledge with actual operation [2]. Meanwhile, it will significantly relieve the shortage of enterprise tutor which was caused by the enrolment expansion of the professional graduate students.

(2) Universities should vigorously implement the regular meeting system and increase the communication between tutor and students. This measure can quickly solve the problem of the students. At the same time, the regular meeting system can make the students feel the future meeting environment in their future work and increase the communication ability and team consciousness of students. It would make the students quickly adapt to the work environment.

(3) Universities should set up the school and enterprise joint training mode. The training mode called “Sanxia class” and “Guanghe class” have been set in the undergraduate training of School of Power and Mechanical Engineering, Wuhan University. It is the mode that the employer launches earlier recruitment in the faculty they need and sign employment agreement with students. After that, the employer will open courses that the enterprise needs in school and give students a certain salary. This mode greatly mobilized the enthusiasm of the students. For the enterprise, it greatly reduced the cost that enterprise experts serve as the second tutor in university and reduced the risk of new staff training. Therefore, the author believes that the dual tutorial system of professional degree graduate students can be implemented through the combination of school and enterprise training.

Curriculum System

(1) According to the result of communication with the enterprise, university should change part of the on-the-job training into the graduate student course and make the students finish their pre job training in school, which make the graduates adapt the working step quickly.

For most enterprise, the pre job training for fresh staff is very necessary. At the same time, many graduates found their learned knowledge become out of date after working because of the slow-update of teaching content in school. Students have to pay a great deal of time and energy to cramming for the forefront of the industry knowledge. Although some school have opened the courses like the lecture of forefront of the industry, but it can’t play a significant effect. So we can move part of the enterprise’s staff training it to school. It is a great help to both students and enterprise.

(2) School should reduce the proportion of the theoretical knowledge and improve students’ self-learning ability. In the engineering practice, the requirement of the depth of knowledge is low but
the requirement of the knowledge coverage is very high. This situation showed that the most important thing for the enterprise is how to let the students absorb knowledge quickly. For the theoretical courses, we should set less courses and make the content of the courses wider and focus on improving students’ self-learning ability and learning efficiency.

(3) School should effectively promote the cooperation between enterprises and university and open the courses that can improve the practical ability of students.

**Evaluation System**

For the evaluation of professional degree graduate students, we should not only take the traditional examination scoring system [3]. According to the curriculum system described above, the pre job training courses should adopt the traditional scoring mode. Because of the heavy responsibilities of post training, we should use the scoring mode which is objective and rigorous. For the theoretical knowledge courses, we can examine them by letting them give a lesson on the stage in front of other students. In this way, we can check the learning ability of students and improve their expression ability. For the school enterprise joint practice courses, school should evaluate the students by the contribution they made in the enterprise practice base on the feedback of the enterprise. At the same time, school should do tracking survey of the graduates to measure and modify the training mode. Only in this way can the system keep pace with times.

**Summary**

This paper started from researching the purpose and meaning of this subject and studying the concept and features of the professional degree graduate students quality assurance system. After this, we identified the research methods and make a questionnaire survey in Wuhan University. We used SPSS19.0 to analyze the results of the questionnaire. Through the descriptive statistical analysis of the results, we learned about today’s professional degree graduate students’ demand of the teaching arrangement, course setting, faculty etc. After that, we combined the data obtained from the analysis with the traditional theory and established a design plan for the professional degree graduate students quality assurance system which included four aspects of training plan, teacher staff, course system and evaluation system. According to the existing theory and the analysis of the results, we have made great efforts to optimize and redesign these four aspects, in order to achieve the design goals of the quality assurance system and solve the problems in the training of professional degree graduate students.

**Reference**

