

## **The Reform and Exploration of Innovative Talents Cultivation Mode**

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**Abstract.** According to the reform and exploration of the cultivation talents mode with mentors from both Universities and Enterprise aspects, the specialized education system of master degree project, which cultivates creativities and entrepreneurship, has been developed. This bi-instructor system helps the realization of being productive of basic theoretical research results. For the realization of the enterprise projects, reformations of technologies and education the talents with practical techniques, this education system aims to help our postgraduates be more creative and be more practical. The talent people education system and the quality supervision system, which will be functional throughout the master project, of it is mentioned in detail in this paper and the working results are as expected.

### **Introduction**

Bi-instructors productive talent people cultivation project is based on the professional knowledge of postgraduates but it concentrates more on making the knowledge for practical manufacturing purpose. This project makes the postgraduates to get trained for engineering practice and technology improvement. Meanwhile, the postgraduate will also benefit from the project for research summarization ability and key points abstraction ability. After the cultivation of bi-instructor system, postgraduate will be more capable of case analyzation, work drawing standardization and project design both theoretically and practically. To maintain the quality of practical master cultivation project and the value of practical master degree, corresponding documents are also composed such as Detailed Rules and Regulations of talents cultivation, Incentive Policy, Quality Checking of the cooperation of the University and Enterprise etcetera. The cultivation quality is highly expected because of the normative management.

### **Perfection of the Practical Talent Cultivation System**

#### **Categorical Cultivation Reformation**

The categorical cultivation reformation will be implemented and the professional degree and knowledge cultivation will be paid great attention. To meet the demand of qualified applied talents, combining to currently certified master degree distribution of our University and postgraduate recruitment plan, the cultivation purpose and recruitment of postgraduates are adjusted and perfected. The experiment unit will change part of master majors from both academic and practice concentrated master programs to separated applied talent master and academic researching master. The scientificity and research-oriented character of academic researching master cultivation will be reserved but the practical purpose cultivation method for technology and practice will be added. Integrating the applied resources and dedicating more effort to train applied-postgraduates, the comprehensive quality and professional characteristic will be improved.

#### **Professionalize the Cultivation Method**

The cultivation method will be made according to the character of different majors to stimulate the combination of different professional knowledge resources. Concentrating on the general good for improving the quality of the talent cultivation and for the level of master education management, the cultivation strategies of both the creativity concerned academic graduate and the applied

concerned dissertation graduate will be made. The purpose of constructing the identical class selecting system and the professional practicing environment is to be achieved. The reformation of cultivation plans is made corresponding subject clots. The combination knowledge of ship industry, marine science, automobile industry, informatics, control science will be achieved and the mutual beneficitation pattern among different subjects will also be constructed.

### **Structured Cultivation Plan**

The cultivation plan of our master program will be structured with progressing steps. The master program is not the extension according to the postgraduate study method but the cultivation of theoretical and applied engineering ability improvement. In the year 2015, our University revised the academic based master cultivation plan and the dissertation based master cultivation plan. The new cultivation plan keeps the scientificity of academic based postgraduate cultivation plan but the applied master specific courses such as Management, Engineering Practice and Technical Skills are added to our reformed education plan. There are 115 research aspects for applied postgraduates, which provide 383 different specific courses. Emphasizing postgraduate engineering application ability or integrated management ability, the classes design will fully consider the technology and practical use of knowledge. Then the postgraduate comprehensive quality and engineering application ability will be instructed and trained.

### **Build Innovative Practice Base**

The innovative practice base will be established for cultivation system. The bi-instructor cultivation system will be built and instructors from both the University and the Enterprise will be invited to provide postgraduates both academic and application instruction. The instructors have to be responsible for postgraduate classes teaching and composing of the dissertation. Reformation of Bi-instructor system is the cornerstone of the standard dissertation master completion. The instructors have to make the plan to achieve the goal of teaching the postgraduates not only for academic purpose but also emotional purpose.

For meeting the demand of cultivation applied talent, 18 innovation application bases and 16 above provincial and ministerial-level engineering cultivation centers are built to provide resources for being innovative to postgraduate. Joint cultivation courses are based on actual application, target on career hunting, emphasize the combination of theoretical courses and applied courses [1]. The classes will be introduced into experimental teach and the postgraduates will be involved in curriculum practices to practice their case analyzing ability and problem-solving ability via theory-deduction and hands-on practice processes.

### **Emphasis Characteristic of the Cultivation of Applied Talents**

#### **Benefit for Postgraduates Innovation and Entrepreneurship**

Applied talents cultivation is the need of our society. The postgraduates could be self-employed instead of applying for a job. The postgraduates are encouraged to do research projects and experiments, which fit the ideas of majority entrepreneurship and general innovation. The applied master is the extension of Outstanding Engineering project of the undergraduate program so the course system of master program and undergraduate program is united. According to the design and levels of workshops, the postgraduate engineering applied technique has continuous deep development. The Outstanding Engineer Program and Applied Master Program are the supplements of each other [2]. As the result of the program, the cultivation direction of the applied talent has becoming clarified so as to provide the talented postgraduates who have the potential of being entrepreneurs with academic and practice experiences.

#### **Support Researches of Postgraduates Basic Applications**

The depth and breadth of applied master courses design, topic research, cooperation between school and enterprise, bi-instructor instruction should be guaranteed to prove that this cultivation system is Applied Research based. Relying on inner and outer University innovation practice bases provincial

key lab and engineering research center with the characteristic of innovation and practice, the time and quality guaranteed professional practical teaching activities are launched. Research, Application and Career Development are paid great attention. Research Ability and Practice Results are enforced.

### **Solve Shortage of the High Level Talents Problem**

The bi-instructor project will help the University and Enterprise to be the supplement of each other to increase the options of postgraduates of academic courses, practice courses, and topic choosing. The cooperation between the University and Enterprise will be tightly connected with actual production, which will provide the opportunity for postgraduates to keep close to the production line and will also make the postgraduates be responsible for research topics independently. Through the upward activities, postgraduates study interest will be stimulated and they would have the chance to enjoy themselves for the research achievements. Postgraduates will engage more with academic activities, workshops, and academic cooperation because of solving key technology problem for the enterprise. Besides activating academic environment, the postgraduates will be affected by the culture of the enterprises gradually. The enterprises will be advertised and postgraduates would be willing to continuously work for the enterprises and the high talent shortage problem would be solved [3].

### **Benefit the Cooperation Both the Enterprises and the University**

The bi-instructor project will benefit the cooperation both the enterprises and the university. Meanwhile, the leadership of instructors both from the university and the enterprise would be practiced. With the combination of plentiful knowledge storage of University professors and abundant experience, advanced research equipment of enterprise instructors, the interdisciplinary and inter-unite cultivation project will become real and the cooperation and resource sharing will be functional [4]. Because of the introduction of enterprise instructor about key industrial problems and the troublesome technology difficulties to slow down the progress of enterprise, the postgraduates will be more well-informed. The instructors from different subjects and different resources could put a good use of their own advantages to help the postgraduates have professional knowledge and practical ability improvement. The purpose of stimulating postgraduates to be more innovative and to be more self-improving will be achieved.

### **Monitor the Cultivation Quality of Applied Talents**

#### **Play the Role of Master Degree Education Supervision Experts**

The supervision work follows the rule of regular checking and random inspection methods. The quality checking will be executed from the key monitoring point. Some project report and experience exchange sessions will also be held to share the information and to supervise the research progress of postgraduates. The cultivation plans, courses distribution, teaching quality and effectiveness will be evaluated. The cultivation processes could be supervised and guided.

#### **Implement Qualification Examination Principle of Requirement**

As for the growing of master education volume, the problems of how to maintain and improve postgraduate cultivation quality, how to train well educated and innovative postgraduates have become the important subject in hand. In order to optimize resources, intensify mentors functions, emphasize research achievement, our University put the Master Supervisor Enrollment Qualification Checking Principle. There are 8.7% of the master supervisors haven't passed the qualification check annually. The unqualified master mentor will be disqualified and to be examined next year. If the master supervisor qualified for enrollment, he or she could recruit postgraduates since then till the next examination.

#### **Dissertation Sampling Surveying and Punish Academic Dishonesty**

In order to improve the master dissertation quality, to build the effective monitoring principle and to

guarantee the quality of master degree, 40% of the master dissertation will be sampling surveyed to completely eradicate low-quality dissertation. Judging from the working result, the percentage of qualified dissertations is increasing year after year. Academic integrity is one of the guarantees of the high-quality talents. Then to enhance academic ethics and construction of study style is the key to improve cultivation process. The teaching quality and academic honesty will all be considered as elements of teaching accidents. The academic misconduct will be punished if it is discovered.

### **Summary**

The applied master dissertation topic selection should be related to the needs of enterprise and applying practice, which should have clear professional background and value of the application. Researching, making decision and design according to the real case, the research project will be more specific and professional. The academic instructions come from both instructors from the University and Enterprise has to be responsible for topic choosing of postgraduates dissertations. The bi- instructor project is still in the exploratory stage, completing quality supervision and evaluation system are still need improved.

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