

# EXPLORING FOR THE TRAINING MODE OF YANSHAN UNIVERSITY EXCELLENT ENGINEERS INTERNSHIP

Wang Hongbin, Li Haibin, Liu Fucui, Liu Shuang , Cheng Sifan

Institute of Electrical Engineering, Yanshan University

## ABSTRACT

The internship plays an important role in the Program of Excellent Engineers. It cultivates students' engineering quality to meet graduation requirements. In 2010, Yanshan University was accredited as one of the pilot institution for the Excellent Engineer Program and it has two classes of graduates since then. Now the third class has entered the period of internship. Through three years of exploration and experience in the internship training, we have gradually established a five-in-one internship training model of "needs analysis, active initiative, process tracking, continuous improvement and precipitation accumulation" and built a number of practice bases with the industry characteristics. Through making a sound safety guarantee system for practical process, standardizing the construction of enterprise training courses, drawing up regulations for school-enterprise joint tracking and evaluation system of internship, we have finally formed a relatively complete corporate training program. Based on the feedbacks by questionnaires and face-to-face interviews, we investigate our previous graduates, fresh interns, practice base managers and the recruitment organizations' leaders, then discuss the summary of feedback, we have finally set up a mechanism of continuous improvement for the training mode of the internship period and made a tripartite-winning goal for students, school and enterprises.

## KEYWORDS

Excellent Engineers, Internship, Training Mode, Practice Base

## 1 · INTRODUCTION

Excellent engineer education and training plan (hereinafter referred to as the "Excellent Engineer Program") to implement the "national long-term education reform and development plan (2010-2020)" and the "national long-term talent development plan (2010-2020)" of the major reform projects, which is responsible to cultivate a large number of innovative ability for the country, adapt to the technical personnel of various types of engineering high quality requirements of economic and social development. Follow the "guidance for industry, the implementation of school enterprise cooperation, classification, diversity" principle, according to industry demand for talent, develop superior plan, we set up a new mechanism of universities and enterprise training of personnel jointly to strengthen engineering ability and innovation ability as the key point of talent training mode, improve the construction of teachers' appointment, evaluation system, education community and industry jointly formulate talent training standards. Features of industry deeply involved in the training process, school cultivate engineering talents according to the general standards and industry standards, strengthen the cultivation ability of students' engineering and innovation ability. In 2010, Yanshan University was accredited as one of the pilot institution for the Excellent Engineer Program and it has two classes of graduates since then. Now the third class has entered the period of internship. Schools to fully grasp the meaning of excellence training

program, continue to strengthen the philosophy of industry enterprises to participate in the training, pay attention to the cultivation of students' engineering competence and innovation ability, especially in the process of enterprise internship, through the "needs analysis, active initiative, process tracking, continuous improvement and precipitation accumulation" the five-in-one internship training model improve and refine the implementation for the process of enterprise culture, drawing up regulations for school-enterprise joint tracking and evaluation system of internship, we have finally formed a relatively complete corporate training program. Based on the feedbacks by questionnaires and face-to-face interviews, we have finally set up a mechanism of continuous improvement for the training mode of the internship period and made a tripartite-winning goal for students, school and enterprises.

## **2 · PROBLEMS IN THE CORPORATE INTERNSHIP**

### **2.1 The factors of students**

#### *2.1.1 The unclear occupation planning leads to the contradiction between The Graduate Candidate Test and job hunting.*

In 2010, Yanshan University was accredited as one of the pilot institution for the Excellent Engineer Program. We screened 30 students to composed the pilot class by volunteering, organizing interviews and other links for the first phase of the two session of students in 2009 and 2010. For these students the career planning is clear, they have a basic understanding for the training model of the excellent engineer education and employment prospects. Therefore, during the period of internship for 2009 and 2010 grade students they have relatively high agreement for internship work, they have a low rate of take Graduate Candidate Test, there's hardly impact for the internship. Since 2011 we screen students from college entrance examination, the cut-off mark is higher than others. Candidates and families of the candidates almost know nothing at all about the Excellent Engineer Program, therefore, there's considerable blindness for candidates. Personal career planning in the course of study at the University, leading to conflicts with internship, mainly for Graduate Candidate Test and internship.

During the internship, students must adapt to the enterprise management and the strict system of the company, the strong pressure of work are inconsistencies with students' goal for the entrance examination, from the data of students we can found that the rate and quality of taking the test is lower than that of ordinary students.

Students who want to participate in the test the scores of internship are generally lower than the student achievement to direct employment, enterprises generally reflect that students do not attach importance to the work, they can not to put the energy to their work, part of the enterprise clearly no longer receive students who preparing for the exam to get into internships.

#### *2.1.2 The contradiction between expectation and the actual work*

Students in this major completed campus study in 3 years, and 1 year for internship. Their head high, before entering the enterprise internship, they want to enter the key post in the research and development of enterprise. Actually, enterprise internship, enterprises will be based on the characteristics of each student, arrange to research and development jobs and post-sales support job, human resource intern positions, even if assigned to the technical research and development jobs, they could only cooperate with enterprises dedicated research and development team to support, so there's a large gap in expectations of students and actual work. The gap lead to students not interest in internship.

### *2.1.3 The contradiction between less adaptable and the strict system of the company*

During the period of school, students' schedules are not fixed. After entering the internship, the harsh system of enterprise challenges the students' ability to adapt to everything. For example, the practice base in Shanghai, students do not make positive changes after the check of dormitory hygiene, withholding allowance 100 yuan for the second time according to the rules. After communicating with students, students' attitude changes over, they are aware of their problem. Practice base in Beijing, there is only an hour for lunch break, nap time is not enough, so they always dozing during afternoon working hours, they were warned by the company for this. These problems are reflected in their lack of adaptation, students can't adapt to the rules and regulations of the enterprise.

## **2.2 School factors**

### *2.2.1 Practice base construction is insufficient*

It has been one year and a half from proposing the Program of Excellent Engineers to the first batch of students went into internship but still facing some problems. Each school is exploring how to construct practice bases. Yanshan University has constructed some practice bases by contacting some big companies according to different college speciality under the lead of Office of Educational Administration.

However, some schools and enterprises have not totally understood the main point of the Program of Excellent Engineers, therefore, at the initial stage of the program, there were few enterprises that allowed students to work for them as trainee. There is no chance for students to choose, so we cannot achieve the win-win aim for both enterprises and students.

### *2.2.2 The limited practice conditions in school cannot be fully satisfied the training*

Program of Excellent Engineers is to strengthen engineering ability, innovation ability of the students. So we adopt 3+1 mode, which means that in the first three years of school, students need to finish the study of theory, and then they would practice in companies at the last year, in order to make students become excellent engineers when they graduate from university. Whether the students could perform good or not in companies is highly depending on the practice condition in school. And then it could determine the level of students when they graduated from school. We need to improve the practice conditions as soon as possible and improve teachers' cultivating engineering consciousness in order to improve students' ability.

### *2.2.3 The weakness of regulations and moral training for students in school.*

It is difficult for students to adapt to society immediately when they graduate because universities focus more on the theory education instead of morality and law. Students are often slack, dishonest and irresponsible so that sometimes they violate the rules and regulation of the companies. All above make a negative impact on the reputation of the school.

## **2.3 The factor of enterprises**

### *2.3.1 Enterprise only focus on benefits, lack the awareness of investment*

Companies often want to get benefits with little investment. Value of trainee for the enterprise is very limited, it's always hoped by companies that they can cultivate some talents with a little cost through internship.

The actual problem in the process: students are unable to meet the requirements of enterprises, students' occupation plan make them leave the enterprise, they are not willing to

keep working in enterprise. So companies lose their motivation to cultivate students, and students don't feel satisfied, enterprise does not provide employment opportunities clearly, enterprises range students to do some low technology content work, such as drawings, circuit board test error correction, documentation through a low living allowance. Students are tied of work with all of these reasons.

### *2.3.2 Guidance teachers' guiding methods should be improved*

There is still a lack of appropriate solutions about how to conduct in-depth guide to the trainee. During the internship, we need to guide students from two aspects, life and work, it's beyond the reach of school counsellors and teachers, and enterprises have never engaged in education, all kinds of differences between students and enterprises cannot be timely communication, which reduces of the enthusiasm of students and enterprises.

## **3 · THE IMPROVEMENT OF TRAINING MODE**

We set up a mechanism of continuous improvement for the training mode of the internship period through react over the past and all kinds of problems.

We has gradually established a five-in-one internship training model of "needs analysis, active initiative, process tracking, continuous improvement and precipitation accumulation" and built a number of typical practice bases through three years of exploration and experience. Finally, we set up a mechanism of continuous improvement for the training mode of the internship period and made a tripartite-winning goal for students, school and enterprises.

First of all, we conduct research on the enterprises to adopt the form of visits. We investigate the needs of enterprises for talents, and invite experts to lecture to increase students' understanding of training mode. At the same time, give students what they need for enterprises to lay the foundation for entering the internship.

Secondly, this major has internship for one year, the internship period is too long, therefore the original visit internship of the enterprise cannot satisfy the requirements. So we start with all the power to communicate with research companies in order to expand our influence, expand the scope of the base construction.

Both colleges and enterprises are exploring on how to establish security mechanism, how to establish the lowest needs of life for student subsidy standards, how to establish the student tracking mechanism for students to submit reports to enterprise mentor and teacher in school regularly and how to establish the communities mechanism of enterprise mentors and teachers.

Effective process tracking makes school to discover problems in the process: the insufficient part of enterprises to provide living subsidies for students made low living conditions, there are some security risks, some students cannot meet the requirements of enterprises. To these problems, the school was carried out with the improved carding, raised the minimum living allowance requirements, at the same time, enterprise or school responsible for the accommodation, security, traffic safety, refined tripartite agreement, make the practice norms for students clear.

Through three years of construction, with the annual survey, we eliminate some enterprise practice base, continue to strengthen the cooperation between enterprise that suitable for students. Finally, we formulate the training mode jointly, achieving the enterprise participate in the depth of teaching. At present, there have been eight practice bases have already been built, these bases receives a maximum of ten people each year. There is more freedom for choose, which can stimulate their interest in internship.

The process of training now: Introduction the required of skills in practice bases in the third grade first semester, make them choose the course according to their interests or skills need in practice bases. The second semester of the third grade, students write their resumes for practice bases, in order to the initial screening, and then we organize students to participate

in the written test and interview; at last, enterprises determine the list and signed the tripartite agreement with students. School buy students commercial insurance, bases implementation of lodging, insurance matters. At the end of the third year in school we send students to practice base to start 10 months internship. During the internship, the enterprise mentors and teachers in school guide students complete the internship, the graduation design and examination assessment.

Graduate survey data through 2014 school principal Mycos company shows, employment rate and employment quality were higher than those of other major students, enterprises recognized degrees also increased year by year, the questionnaire showed that students were satisfied for the internship, which is the important guarantee of employment for students.

#### 4 · CONCLUSION

After training three session of the students, our work has begun to take shape. Institute of Electrical Engineering, Yanshan University has accumulated precipitation of high quality 8 practice bases, the bases satisfied the Excellent Engineer Program well. School and enterprises set up an independent training program to improve students' ability. We provides a new way for personnel training for enterprises and promote enterprise innovation, at the same time, also expanded the influence of the Yanshan University, finally completed the tripartite-winning goal.

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#### ***Corresponding author***

Dr. Li Haibin  
Institute of Electrical Engineering,  
Yanshan university  
Qinhuangdao, Hebei Province 066004  
18903341793  
[hbli@ysu.edu.cn](mailto:hbli@ysu.edu.cn)



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