

Exploration and research on practical teaching system of material specialty applied talents

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Abstract. With the popularization of higher education in China, great changes have taken place in the structure of higher education system, application-oriented institutes have come into being, and the orientation of running a school is to cultivate applied talents for the needs of local economic development. According to the material major, this paper proposes to establish a practical talent demand oriented design three-in-one practice education system including employment, internship and graduation, improve the students' practical ability and comprehensive quality, and lay a solid foundation for the students' employment.

Introduction

With the popularization of higher education in China, great changes have taken place in the structure of higher education system, application-oriented institutes have come into being and showed a relatively fast trend of growth in higher education, and the position of applied-oriented institutes has been clarified, which is to cultivate applied talents who can make contribution to the development of local economy and society [1]. It is still a dilemma faced with any application-oriented institute, however, that how it can improve the quality of talents and meets the need of economic and social development.

For the application-oriented institutes in our country, it is one of the most important responsibilities for them to ensure successful employment after graduation and produce special talents for society. But at present the contradict in the talent market is that on one side graduates cannot find employment, while on the other, enterprises are unable to recruit suitable staff, the reason for which lies at the separation from pragmatic work, and lack of solid and useful practice and graduation designs among students. Therefore, the application-oriented education must proceed through practical teaching, such as combination with employment, scientific arrangement of graduation practice and graduation design practice, improve students' practical ability and comprehensive quality, lay a solid foundation for students' employment, and also provide useful talents for enterprises. To meet the needs of future projects and engineers in higher engineering education, we have conducted exploratory researches on the reform of practice teaching system of material major in our school and focused on the cultivation of students' ability in engineering practice, design and innovation.

Existing Implementation Mode

Production Practice, Graduation Practice and Graduation Design. In the current undergraduate professional training plan, most material majors in domestic colleges and universities still use the traditional teaching mode. Practice teaching before graduation consists of production practice, graduation practice and graduation design. Generally, the production practice is arranged in seventh semester for 5 to 6 weeks, the graduation internship in the last semester for 1 week and graduation design for 14 to 16 weeks. Production practice enterprises are often firms engaged in material production and material quality testing. The on-the-job practice mode is usually adopted in order to improve the students' engineering quality and practical ability. After the completion of the production practice, the students will return to school, submit the practice report, records and other related results, and gain grade point after the assessment. At the beginning of the eighth semester,

students will begin their graduation designs after the design topics are selected and preliminary research is completed. The whole process lasts from 14 to 16 weeks. Topics, which are aimed to improve the students' comprehensive abilities, are generally selected by teachers.

Students Employment. At present, the majority of college students find employment in a two-way and self-independent way, mainly students-driven. General in the process of production practice, graduation practice and graduation design students use their spare time to contact with employment firms, usually by participating in talent recruitment, delivering resumes, through family relations to find a job, during which they have to go for a lot of interviews recruitment meetings and communicate with the firms. The schools mainly provide students with a broad stage to, organize recruitment, contact the relevant firms, introduce students to the enterprise, and provide training, guidance, publicity and other related services for students to obtain employment.

Existing Problems

Effect of Students' Employment on the Practice Teaching. In recent years application-oriented institutes have made many trials in professional education teaching reform and also received a lot of achievements. But in the current situation, problems still exist in the material production practice, graduation practice, graduation design and employment of students.

From the beginning of the seventh semester, students began to look for jobs and prepare for the postgraduate entrance exams. Due to difficulties in employment, students need to devote a lot of time and effort to finding a job. In the seventh semester, students are mainly engaged in postgraduate entrance exams and busy with looking for a job which certainly will effect the graduation design and Practice. Students have rare time to polish their graduation practice and design. However, for the employment is an important index to evaluate the level of a university, and a hard task for school, all colleges and universities have attached great importance to it, graduation practice and design often give way to employment.

The Effects of Production Practice, Graduation Practice and Graduation Thesis are not Ideal. In the existing implementation mode, production practice, graduation practice effect is not ideal because of short practice time, strict internship requirements of the firms, unfamiliarity with some basic production process. Although the students seem to stay in practice, but enterprises guidance is inadequate, and many students are still supervised by school teachers. But because The school teachers have other teaching tasks, live very far from the practice place guide a great number of students and other reasons, the effects of guidance and management are not satisfactory. The students' practice is completely relied on self-management and exploration, therefore the practice effect cannot be guaranteed. Especially due to ineffective management, many students almost do not participate in the internship, but completely copy or plagiarism practice diary, and practice report. All results are completed in the final stages of assault.

For graduation design, the usual procedure in most undergraduate schools for this part is that professional teachers put forward a series of questions and let the students select topics; the graduation design are usually completed in the school, which isolated the actual production. Generally according to the professional knowledge and the need to resolve the problem, students usually go to the library or the Internet to find some information, and go through a deduction from theory to achieve the set goals. Design is the subject of many teachers' "self-false questions", rare is in accordance with enterprise production project. The design conditions and requirements are relatively ideal, and do not meet the actual production condition. The students' comprehensive practical value of training is not high.

The personnel's training of professional and technical is the objectives of undergraduate professional application in the high-end production line. While the students study for these professional skills is to find a suitable job in related firms, this is both interrelated and inseparable. Because of the lack of teaching and practice, students can not pass through solid practice and graduation design to foster their professional abilities and the occupational accomplishment, which greatly reduce the graduates' quality of personnel, and also add more difficulty to their employment. So the internship, the graduation design and the employment all three are closely linked. Only by

integrating these three practices as a set teaching model and making improvement constantly according to internal rules, applications-oriented education can cultivate the needed talents for the enterprises.

The Construction of Practice Teaching System of Applied Talents.

Integrate the internship, graduation design and job seeking as a graduate of a previous system, based on which strong practical ability can be obtained by students effectively and the ability to adapt to the needs of production, so as the quality of employment can get improved[2].

Scientific Training Program. Professional theoretical knowledge learning will be finished as far as possible in the first three years of the university. The last year, we should focus on practice, graduation design, and strengthen the training of professional quality.

In order to promote the practice teaching reform of training mode , we must meet the following two points: First, some of courses should be simplified .The professional subjects should be compact arranged in the first three years , in order to reduce the burden of the students in the last year. This is conducive to the students arrange internships, graduate design and final job employment in advance. Second, the stress of practice graduation design and job seeking must be lay on time continuity and matching combination. The teaching task of the last semester is mainly graduation practice and graduation design. The ultimate goal is to achieve high quality employment and transport really useful material for the enterprise. The process of practice and design is to understand the production line, to gain practical experience and to develop the flexible use of knowledge. Practice, design and employment of the three can be flexibly arranged in time.

Strengthen the School-Enterprise Cooperation. The school should contact actively more enterprises to participate in the students' employment and comprehensive practice, establish and improve the information base, and strengthen business cooperation and friendship exchanges. There are many kinds of the form of cooperation between schools and enterprises, which can be a scientific research cooperation unit, a cooperative school running unit, or a practical base or friendship unit.

Construction of Long Term Cooperation Practice Base. To build a practical teaching system of applied talents training, a basic condition is to establish a practice base which has a long-term cooperation with the school. In order to cultivate talents, it is necessary to establish a common development consortium of university and enterprise, and create a professional training base.

Teachers can understand the enterprise requirements for talent, knowledge and technology through internships and graduate design which the students would be arranged in the production line .Teachers can obtain some joint research projects with the enterprises, promote the combination of theory and practice, and give full play to the role of university social service function through solve practical problems in production with the students. The training mode of school-enterprise cooperation not only can provide a reliable guarantee for improving the quality of school teaching, but also enable enterprises to obtain strong support in talents, technology and scientific research etc.

Strengthening the Construction of Teaching Staff. It, the graduation practice and graduation design of undergraduate application specialty, is the key to the teaching quality and the quality of talents training. In order to guarantee the teaching quality, it is very important to have a group of teachers who are qualified for practice guidance and design guidance, besides having a good practice base[3]. Therefore, the quality of the integration model of guarantee also depends on whether the school has a number of corresponding double type teachers.

In addition to have a solid professional theoretical knowledge, teachers should have a strong practical ability and scientific research ability. The teacher, as a practice and graduation design guidance, is not only responsible for students' practice and graduation design, but also understand the relationship between graduation design and production needs, to help and guide the students to determine reasonable employment goals.

Summary

Since the first batch college students of enlarged enrollment went to the society, the demand for talent of the society of our country gradually shifted from a seller's market to buyer's market. A large number of graduates will be poured into the job market. The employment problem of college students has attracted widespread attention. Many universities carried on beneficial exploration from theory and practice, and have achieved certain results. To better solve the employment problem of college graduates and realize the goal of cultivating practical talents, we should start from the construction of innovation practice teaching system, establish a theory teaching system and practice teaching system which is suited to the society, and cultivate the graduates who meet the actual needs of industry development.

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