

Research On Innovation of Production Internship Mode for Engineering Majors in Universities Based on Factory Mentor System

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Abstract. This paper aims to address the shortcomings and difficulties in carrying out production internships for engineering majors in universities. By adopting a dual mentorship system between schools and factories, the article explores and studies the current situation of production internships, the construction of internship models, the development of internship standards, and the organization and implementation procedures of internships. This provides new ideas for improving the quality and efficiency of production internships and enhancing the job adaptability of graduates.

Keywords: higher education institutions, internships, models, innovation, mentorship system.

1. Introduction

Professional internships that are tailored to specific fields will enhance job performance, facilitate role transitions, and enable 'zero distance onboarding', thereby providing significant assistance for future work. It is generally believed that the existing internship mode needs to be adjusted. Various opinions have been expressed on the timing, duration, methods, location, and content of internships. These feedbacks have played a good reference role in the reform of the production internship mode for college students. The choice of internship venue and timing is an important factor affecting the effectiveness of internships. Through relevant surveys, it has been found that most students believe that the best internship timing should be synchronized with the actual production of the factory. The internship should last for more than 4 weeks, and there should be at least one internship during the school period. The internship should be conducted in the fourth semester and undergo strict training before the internship [1].

2. Construction Of Internship Mode

2.1. Establishment of Internship Management Institution

Universities and enterprises should each establish specialized internship management agencies to be fully responsible for the relevant work of graduate internships, including the organization and management of internships, as well as the assessment and evaluation of internships. The internship management agencies of universities and enterprises should closely collaborate and jointly be responsible for formulating internship plans for graduates, determining internship locations and opportunities, implementing management and monitoring, assessment and evaluation, summarization and rewards and punishments during the internship period, negotiating the scheduling of internship courses, teaching content, faculty allocation, funding guarantee and other aspects.

2.2. Establishment of Internship Work Mode and Operating Mechanism

The current focus of reforming the teaching and management of production internships in universities, especially for graduates, is to establish a joint responsibility model and mechanism for internship teaching and management between universities and enterprises. That is, each intern's internship work should be supervised by a dedicated person in the enterprise to guide the internship

and management work, serving as both an internship counselor and a management worker; Similarly, for each student, the institution should have a dedicated person responsible for guiding the various tasks of the internship, serving as both the internship instructor and the internship manager. Establish internship liaison points or stations between universities and enterprises, incorporating student internship work into the daily work of enterprises and university teaching.

2.3. Selection of Internship Methods

Universities can implement a "multi period, phased" internship approach. Taking 4-year undergraduate students as an example, cognitive internships are implemented during their freshman year. Led by course instructors and counselors, visit and intern at relevant enterprises, research institutes, and other units, with detailed internship records and reports during the internship. Through cognitive internships, students can gain a sensory understanding of product design, enhance their interest in learning, and stimulate their sense of responsibility, mission, and pursuit of excellence. In my sophomore year, I completed internships for both on campus and off campus courses. At this stage, we will make full use of the resources of both on campus and off campus internship bases, with the goal of improving students' job performance. Through internships, we will apply the skills learned in professional courses to practice, enhancing students' abilities in operating and using instruments and equipment, daily maintenance, fault detection and repair, and improving their hands-on skills. This will lay a solid foundation for production internships in their third or fourth year. It is best to conduct internships at the production line of enterprises or factories during this stage, and adjust the internship timing according to the actual situation of the enterprise. In the senior year, establish a graduation internship model mainly based on on-the-job internships. At this stage, students go to relevant enterprises to work as interns in professional positions. At this time, students have already mastered comprehensive professional knowledge and have certain practical experience. In actual positions, they can further improve their job capabilities based on the enterprise's production plan and specific work tasks. [2-3]

3. Establishment Of Internship Standards

3.1. Internship Objectives

Through internships, students can broaden their knowledge horizons, hone their professional skills, improve their organizational style, verify their quality and abilities, enrich their practical teaching methods, and enhance their adaptability to military positions. Through internship, gain an understanding of the production and operation channels and processes of the enterprise, the advanced technological status in the industry, the market demand of the enterprise, and the specific job responsibilities; Learn to cooperate and collaborate with others, learn the ways and procedures of production, and learn the basic skills of job positions; Experiencing the specific production process, product design and production process, and technical inspection process; Experience the various aspects and requirements of quality monitoring, the process and procedures of troubleshooting equipment, the joys and sorrows of enterprise life, and the glory and sanctity of the mission of the position. Through professional internships, actively carry out product production work, instrument and equipment technical inspections, and troubleshooting for enterprises, achieve complementary advantages and resource sharing between universities and enterprises, and further improve the quality of talent cultivation in universities.

3.2. Internship Time and Location

For short-term production internships, the duration is generally 1 to 2 weeks, while for the fourth semester, the duration is usually 3 to 4 weeks. Graduation internships may last longer. Internship locations are generally chosen in the R&D or production departments of enterprises. The selection of internship locations should follow the principles of being conducive to the development of internship work, an environment that is conducive to cultivating students' comprehensive qualities, and a place

that is conducive to improving the job performance of graduating students. The internship location for graduating students is generally selected from relevant enterprises.

3.3. Principles followed during internship

Practicality refers to guiding students to step out of the classroom, get closer to production, get closer to enterprises, get closer to practice, and get closer to their positions. Combined with current preparations for information technology production, students can learn business skills that cannot be learned in the classroom, in order to better serve enterprises.

Subjectivity means adhering to the implementation of students' subject status, respecting and trusting students, and encouraging them to actively participate in production activities and internships. Teachers should combine the content inside and outside the classroom, and combine imparting knowledge with cultivating students' comprehensive abilities. They should not only focus on the comprehensive development of students' overall quality, but also pay attention to the cultivation of students' independent thinking and personality, and fully play the main role of students in practical teaching.

Integrity refers to the overall planning and scientific operation based on the principles of systems science, pursuing the overall benefits of carrying out professional internship work. According to this principle, during the internship period in the enterprise, we must resolutely obey the unified arrangement of the enterprise. When formulating various internship training subjects and other contents, we must ensure that they are carried out under the unified arrangement of the enterprise, and try our best not to affect the normal training of the enterprise.

4. Conclusion

Before the professional internship, a special internship mobilization meeting should be held for all students. Not only should important aspects such as the internship purpose, tasks, content, and process be explained clearly to students, but also the relevant systems and disciplinary requirements of the internship should be clearly communicated to students, so that students have a comprehensive understanding of the entire professional internship, and can consciously abide by discipline and cooperate with teachers to do a good job in the internship. Special attention should be paid to safety work during the round-trip and internship processes, and all types of safety accidents should be resolutely prevented from occurring. In order to do a good job in internship work, an internship leadership group is generally established with the head of the professional department as the group leader, responsible for the organization, leadership, and overall management of internship work. To ensure the comprehensiveness of the internship effect, students can be divided into several groups before arranging internships and go to different business departments for internships. This way, the production and operation characteristics of each department can be systematically and comprehensively learned at the end of the internship. At the same time, each internship group is assigned a professional teacher with rich teaching experience, good skill level, and strong teaching ability as the leader of the internship group, responsible for the technical difficulties, product quality monitoring, material procurement, daily student management, and other work of the students in the internship process.

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