

Constructional Methods and Management Strategy of the Cognition

Practice Course in the Mechanical Major

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Keywords: Cognition Practice, Mechanical Major, Course Construction, Implementation Management

Abstract. As the process of the cognition practice in our college of mechatronic engineering has the disadvantages of unclear goal, short time, bad cognitive effects and other problems, this paper clears the teaching target of professional cognition practice, puts forward the cognitive practice curriculum construction scheme and constructs a new strategy of implementation and management of cognition practice. We take the cognition practice of the major of mechanical design, manufacturing and automation for an example to design and practice task setting, practice process supervision and practice effect summary evaluation to verify the validity of the strategy and achieve the satisfactory of teaching effect.

Introduction

Professional cognition practice is an important part of higher school machinery specialized practice teaching link, is students' perception of campus outside the machinery of professional post group and understanding between different positions of the characteristics and position relations, deepen the understanding, clear in the next four years, learning orientation and professional skills, establish suitable for their professional orientation and professional career planning of key teaching link. However, our college students are only a mere formality, and lead the students to the workshop after a visit to write a cognitive practice report to complete the task.

Clarify Teaching Objective of Professional Cognition Practice

The main teaching objectives are: first, to provide students with the opportunity to produce practice. Practice is very strong, and our school mechanical professional to the application of technical personnel training as the goal, the students have to solve engineering problems, familiar with the production process of enterprises, the ability to apply the theory of professional. Therefore, cognitive practice is the key link of students' contact and perception of enterprise production practice. The second is to provide theoretical basis for theoretical courses. Through the field cognition, experience the application of professional theory in production. The third is to help students understand the professional (industry), to guide career planning. It can not only broaden students' horizons and stimulate their thirst for knowledge, cultivating the interest in and through in-depth business, a comprehensive understanding of the status quo of professional (industry),

career planning guidance, foster a sense of students of professional pride and a sense of social responsibility.

Construction Methods of Professional Cognition Practice

Construction of Course System. Based on the problems and professional cognition practice target, research group from the point of view of mechanical design manufacturing and automation professional curriculum system, reform of academic evaluation and curriculum teaching reform, construction of professional introduction, professional cognition practice, career planning and employment guidance curriculum system is the task of teaching reasonable arrangements for in 1 to 3 of each year, the formation of theoretical study, business practice, self-planning the development of closed-loop excitation system. In the curriculum content, introduction of professional theory and knowledge, cognitive practice of practice teaching and employment guidance of career planning organic combination, stimulate students to professional knowledge, skill and ability urgent needs, to future career and job status expectations, promote the realization of curriculum objectives.

Construction of Course Teaching Team. The curriculum system as the basis, to curriculum as a link, composed of course leader, teaching experts, business mentor professional introduction course teaching team, through 3 years of unremitting teachers team construction, continue to carry out teaching and research activities, teaching and research, the construction of teaching resources, the teaching quality steadily. According to the academic department and the teaching quality supervision and evaluation of the students of this course teaching quality evaluation, nearly 3 years of professional introduction course teaching satisfaction and teaching quality improved steadily. The construction of teaching team directly promotes the improvement of the teaching effect of professional cognition practice.

Construction of Practice Base. At the beginning of the course construction, the lack of practice base, only the local two companies, and not stable, limiting the students to the professional width of cognition. After the practice base construction, and inside and outside the District 18 machine tools, instrumentation, robotics and other company signed practice base agreement, hired personnel of enterprises as a practice teacher, and listed on the base of practice teaching, for business mentor presented letters of appointment. In order to carry out the construction of practice teaching base, college and enterprise joint development projects, and NXZ, WZV co-construction technology research and development center, to provide students with a superior practice base.

Evaluation Reform of Course Achievement. Academic evaluation is the course of realizing the connotation development and key link of the reform of the teaching model is to improve the quality of personnel training, cultivate effective starting point for mechanical professional qualified personnel. Construction to preview the report, enterprise mentors, and theory explanation and practice, enterprise practice, practice notes, learning attitude, autonomous learning ability, professional accomplishment, summarize the single evaluation process observation points, set specific scores and process evaluation of the observation points for end of the weight of evaluation. According to the difference of learning ability and learning ability, the observation points and the evaluation criteria are established.

Management Strategy of Cognition Practice

The trilogy of cognition practice is as follows:

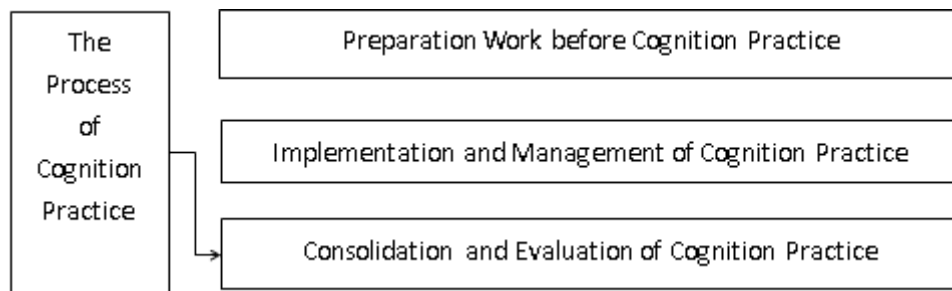


Figure 1. Trilogy of cognition practice

Preparation Work before Cognition Practice. Preview reports require students to follow the direction of teaching oriented autonomous practice, active cognitive practice. Students through the network research, teacher counseling, field surveys and other means to complete. Preview the report to help students' clear internship goals, in-depth understanding of the various types of jobs, jobs, equipment, products, processes, processes, and other enterprises, such as the amount of fixture information. Report content design requires teachers to go deep into the business, and business mentors to fully communicate, to jointly develop. For the new special expertise enterprise, can design according to the characteristics of preview report. Enterprise website content is limited, design research and development, production organization, salary treatment, training and promotion and other information disclosure is less. The students have difficulty in autonomous practice. Invited enterprise personnel, technology, production and other departments and experts to the school for the students to carry out lectures, practice need to focus on the cognitive content FAQ, security for the students to pay attention to matters, rules and regulations, enterprise management is illustrated. Through this link, and then combined with the introduction of professional courses, students work before the basic completion of the internship. the Figure 2 shows CAXA intelligent manufacturing factory training, combined with visual, hearing, hands carry out the integration teaching of theory and. In the lab to build real factories and enterprises environment and working process, let students experience digital design, manufacturing, process, testing, management of various types of post operation specification and skill requirements, to feel different enterprises and technical personnel role tasks through simulation training. A profound understanding of the fusion Internet plus manufacturing as a new generation of information technology and modern manufacturing industry, has made Chinese and mechanical engineering students opportunities and challenges.



Figure 2. Intelligent manufacturing training facility

Implementation and Management of Cognition Practice. According to the practice arrangement, let the students visit the production line, understand the production process of the realization method, understand the enterprise production environment, feel the enterprise atmosphere, and the understanding of the practice and the actual situation one correspondence. Therefore, this stage is the further deepening of the understanding of the work before the internship, but also the perception of education, need to do a good job in order to work: Workshop sometimes space is relatively small, the group can protect the safety of students. Experienced tutor of enterprise to the various production processes like the palm of his hand, and engineering experience is very rich, you can use plain language to explain to students the practice content. Students can not only learn professional knowledge, also can from the engineer's manners and behavior learning to do a mechanical engineer should have the quality. To complete these tasks, students on the one hand to advance understanding of the issues involved in the knowledge, on the other hand, it should be based on the issue of active observation or seek help from the corporate mentor. When the project is set up, the general problem of divergence is given priority to, can be cut from a number of angles to answer so that students in the search for the answer can also proceed from a number of aspects..

Consolidation and Evaluation of Cognition Practice. Cognitive practice ultimate aim is to cultivate the professional interest, professional understanding, guide the academic and career planning. This also requires the contents of the following aspects: combined with the employment guidance and career planning curriculum theory knowledge content, invite school influential professional teachers or enterprise human resources department supervisor to school in academic and career planning guidance for students about cognitive practice what he saw and heard in the process of the relationship between learning and school, about the enterprise of mechanical expertise knowledge and skill requirements, encourage students for learning and training skills for future education and career plan. Cognitive practice report has been sent to the students before the internship, and requires the practice process to carry, the free choice of pre-selected issues in the company's focus on learning to visit the study. Students according to their own understanding of the answer to the question, and there is no single standard answer. The report contains feedback to investigate the students in the internship harvest and inadequate, as a reference for teachers to further optimize the program. Internship report writing should be completed within one week after the end of the internship, set aside time should not be too long. So that students in the memory of the time according to the internship diary writing internship report, the real reflection of the effect. Review practice report, evaluation of teaching practice effect is necessary. Answer to problems with substance related and independent opinion is the basic standard of marking the report, is to measure the quality of practice of a ruler. Report of the harvest, insufficient, opinions and suggestions should be paid attention to and summarized, the comprehensive evaluation of the effectiveness of practice, lack of rational treatment, in order to continuously improve the quality of teaching.

Conclusion

This paper explores the methods to practice the system construction and puts forward the "trilogy" of the cognitive practice. In the practice of mechanical design and manufacturing and automation of Beifang University of Nationalities, we achieved good teaching results, which verified the professional cognition practice course construction. The teaching reform and implementation of management strategies has certain validity and feasibility, which can be extended in other engineering majors in our university.

Acknowledgement

This research was financially supported by the Foundation of Ordinary Project of Teaching Research and Reform of Beifang University of Nationalities (Grant No. JYYB201552), the Foundation of Key Project of Research on the Reform of Teaching and Education of Beifang University of Nationalities (Grant No. 2016JYZD03) and the Foundation of Key Project of Teaching Research and Reform of College of Mechatronic Engineering of Beifang University of Nationalities in 2015. Thanks for the Foundations!

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