Research on Innovation of Computer Software Engineering Practice Teaching System

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Abstract: This paper analyzes the defects existing in the cultivation system of China's software talents and puts forward the teaching reform that adapts to the current university software engineering. The software engineering course is a very practical subject, which is closely linked with theoretical knowledge. The knowledge points are connected in series and need to use different teaching methods to promote the practice teaching. Therefore, innovation should be closely linked with the characteristics of the curriculum, re-orient the concept and training objectives of the curriculum, overcome the shortcomings in the current software engineering teaching, grasp the important role of practical training in innovative teaching, and further strengthen the students' actual operation ability. A new teaching system suitable for software engineering.

Keywords: Teaching; Software Engineering; Innovation; Practice

1. INTRODUCTION

In order to adapt to the requirements of the development of China's information technology into the Internet era, the training mode of software engineering talents in universities has been continuously improved and adjusted to improve the skill level of software engineering students. In particular, strengthening engineering practices has become an important measure for the training of software engineering talents. Cultivating software engineering talents with higher professional qualities, strong engineering practice capabilities and international technical skills is a major issue that needs to be solved in talent training for software colleges.

This year, the output value of the software engineering industry grew rapidly. In the second half of 2017 alone, the output value of the software engineering industry reached RMB 6 trillion, up 16.1% year-on-year. The industry situation is excellent. Based on the good situation of the software engineering industry, the demand for software engineering professionals will inevitably increase, and new requirements will be put forward for their work skills. Therefore, we must make adjustments to the talent training of the software engineering major based on the current situation, so that the software Engineering students can better serve the software engineering industry. The software engineering course is a very important course in the training of software engineering professionals and is a core course in computer science. It mainly involves the theory, methods, environment, technical standards, and development tools in software development.

In order to provide the software industry with better professional and technical personnel and promote the sound development of the software industry, it is necessary to explore how to establish a new type of software engineering personnel training model and engineering practice teaching system, which is currently facing new challenges.

2. INSUFFICIENCY IN CURRENT SOFTWARE ENGINEERING TEACHING

In the current software engineering teaching program, combined with the current social background, there are still many deficiencies, mainly in the following areas: (1) In the current teaching system, whether it is a professional training goal or a training program, there are One of the major issues is to emphasize theory and practice, and not to put enough emphasis on practice. (2) The proportion of experimental teaching system design and comprehensive experimental projects in total experimental projects is low, which greatly limits students' practical ability. And the cultivation of innovative capabilities, and lack of process management for practical teaching, and the supporting quality monitoring and evaluation system is not yet sound; (3) In the current innovation education system, there is an absence of an effective innovative education system and a lack of innovation ability and engineering for students. The training of competence, the lack of engineers with engineering background in the innovation team, and the lack of guidance on the effectiveness of student innovation.

3. SOFTWARE ENGINEERING TEACHING INNOVATION

In view of the current problems in software engineering education, combined with the current environment, this article has conducted in-depth analysis to study the connotation of practical teaching, reorganized the software engineering practice teaching, and established a teaching quality assurance mechanism. This process is quantifiable and controllable. Explore the model of deep interactive interaction with software engineering companies. In this regard, this paper proposes a brand-new teaching

system that includes three types and eight links. At the same time, the software engineering practice teaching system, which focuses on cultivating student engineering practices, is mainly implemented in "curriculum design, curriculum experimentation, project development training, development training, and corporate practice", and sets up professional competitions, innovative experiments, and venture projects and other extracurricular practices. Teaching form.

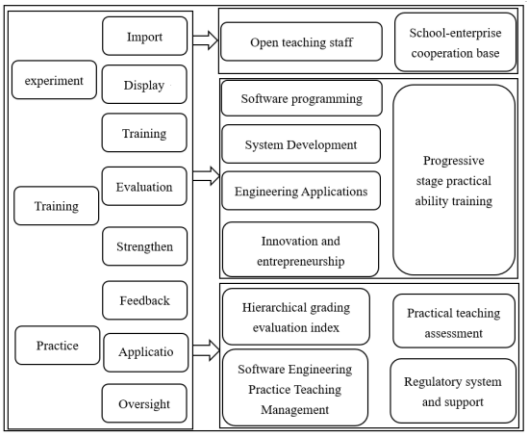

Figure 1 Three types of software engineering practice teaching syste

The three types refer to experiments, training, and internships. These three types are indispensable and interrelated, and the theory is linked to reality, which in turn makes it possible to guarantee the requirements of practical training for software engineering personnel training.

The experimental course is to meet the teaching requirements of the theoretical course and to complete different tasks in the laboratory according to different courses. This is an important and indispensable practice in training software engineering talents. The experiment is to train students in the actual verification of scientific principles or engineering principles, that is, to cultivate students' practical ability, develop new technologies, and discover new principles. Experiments are a further supplement to theoretical teaching. Through experiments, students are better able to master theoretical knowledge.

The practical training course is based on the simulation of the actual work environment and the actual case of the actual engineering project of the company. It is tutored by experienced teachers or project managers. According to the limited time, students can complete software engineering on time, develop their professional skills, teamwork, project experience, etc., and improve their own engineering skills.

The internship program is to effectively join the company and learn in practice. According to the company's specific requirements, participate in the company's project team, complete the actual project within the specified time, and integrate some of the theoretical knowledge learned into the modern software engineering enterprise.

Students' participation in internships is a very important part of the software engineering profession. The best way to cultivate them is to establish a joint training mechanism for schools and enterprises. For students who have completed the theoretical course, they can go to the company to participate in the project, and the schools and enterprises can cooperate closely to improve the students' ability of innovation and engineering practice. On-campus external tutors jointly adjust software engineering personnel training objectives, optimize curriculum systems, practice systems, and innovate education systems. In the cultivation of software engineering talents, it is necessary to have not only reasonable training programs and curriculum systems, but also good teaching teams and faculty. But also need to provide students with the infrastructure, including a variety of equipment and the environment needed for theoretical course experiments. For training highly qualified software engineering talents, the construction of a practical teaching base is particularly important.

Student research and innovation have established a fixed pattern in many universities. Students can independently complete scientific research and participate in practice, and to some extent improve the purpose and direction of student training. Under the teaching of software engineering theory, students are free to combine and complete the practical content driven by the teacher's difficulty of arrangement and the scale of the actual training program. In the later period, they can also complete thesis writing based on scientific research results and become a product of student scientific research innovation. Allow students to complete their training programs, sum up their own experiences and gains, and record the training content in a written form for preservation, which will greatly help later learning. Through software testing and maintenance, students can form a complete set of architecture.

Through the above discussion, we can see that changing the current lack of practice in software engineering teaching enables students to participate in practice and review the mastery of theoretical knowledge based on the problems encountered in practice. This will enable students to better master software engineering skills.

4. CONCLUSION

At present, computers have developed rapidly and new technologies have emerged. As university campuses for talent cultivation, the teaching curriculum must also be updated in time to keep up with the development of the times. Schools should divide the teaching content according to the

characteristics of the computer software curriculum system and unify commonalities so that students can not only master the basic theory of the software curriculum as a whole, but also can use the theoretical knowledge learned and deeper understanding in practice to achieve a more in-depth understanding. Software engineering professional training objectives.

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