

Research on Talent Cultivation Mode of Software Engineering Based on the School-Enterprise Deep Cooperation *

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Abstract—This paper analyzes the existing problems of school-enterprise cooperation in software engineering in two aspects of school and enterprise. Then, this paper puts forward the measures of deep integration about software engineering school-enterprise cooperation in three aspects of school, enterprise and government. In this paper, finally, these ideas and methods have achieved good results in the professional reform practice at college of information Science and Technology Taishan University.

Keywords—school-enterprise cooperation; software engineering; deep integration

I. INTRODUCTION

At present, the professional reform of application talents training has become the main task of colleges and universities in China, the idea and method of which is school-enterprise cooperation[1][2]. High level of application-oriented professional reform has also vigorously promoted the deep integration of school-enterprise cooperation[3]. According to this premise, the software engineering school-enterprise cooperation has achieved initial success. But this cooperation is short-term and unstable. In the process of school-enterprise cooperation, both universities and enterprises have some problems.

II. THE SCHOOL-ENTERPRISE COOPERATION PROBLEMS

A. Enterprise Analysis

Student management is relatively loose in enterprise. There is a lack of mentor who guides student's software development skills in the enterprise. In general, students are regarded as cheap labor in the process of enterprise practice[4], there are some problems such as professional mismatch, weak technical position, etc..

Most enterprises are profit-making organization, economic benefit is one of the most important driving forces for enterprises to propel the school-enterprise cooperation. Therefore, enterprises are interested only in cooperation which can bring economic benefits immediately. Enterprises also hope to see the benefits quickly in the school-enterprise cooperation. Generally, enterprises hope to obtain stable enterprise employment sources in the future, technical support, new staff training, good social reputation and so on in the process of school-enterprise cooperation. However, enterprises do not make the training application talents as starting points. If the enterprise requirement is difficult to meet, or there is a loss of self-interest in the process of cooperation. These reasons lead to that school-enterprise cooperation is difficult to continue and develop.

B. University Analysis.

There are some problems in the curriculum system in universities. One of the obvious problem is that there is a lack of foresight in technology, and even technology fall the current application technology[5]. By increasing the depth of cooperation between school and enterprise, it will help university to know the technical information of enterprises. Thereby, the curriculum system can be constructed and perfect better.

The ability of the most teachers has been questioned by enterprises. The reason for the disconnection between talent cultivation and social demand is that school software and hardware are behind the rapid development of technology, which is prominent in human factors. The practical ability of college teachers is weak. And the teacher does not understand the talent requirement of the enterprise. It is difficult for teacher to absorb the content of enterprise training, and change it into teaching content, teaching cases. And it is also difficult to teach students hands-on training and operation. Therefore, the level of teachers is very important in the school-enterprise cooperation.

In the process of school-enterprise cooperation, the teacher's technical ability, teaching ability and academic level will affect the evaluation of university's cooperation ability, which will affect the willingness of enterprises cooperation. If the teacher's ability is weak, it will bring distrust and suspicion for enterprises, so it is very difficult to establish cooperative relationship. In addition, the basic purpose of school enterprise cooperation is to training talent. Teacher is the main implementer of the cooperative project, and the quality of the teacher determines the quality of the talent cultivation. The quality of talent will also affect the benefit of enterprises which involved in cooperation can be met or not. Thus it will affect the willingness and strength of enterprise to continue investment and dynamics. Therefore, the teacher's ability in practice and teaching determines the implementation effect of school enterprise cooperation project, and determines the sustainability of school-enterprise cooperation relationship.

III. MEASURES OF SCHOOL-ENTERPRISE DEPTH OF COOPERATION

A. School Level

It is important to construct the construction management system and work specification of deep school-enterprise cooperation. According to the needs of the school-enterprise cooperation, the organization structure, management system and specialties setting should be adjusted. In particular, school should create an environment in which teachers are willing to practice and guide students in practice and innovation. And school should identify the responsibilities and rights of the relevant subject.

B. Enterprise Level

It should study the target and workflow of school-enterprise cooperation, and form the enterprise standard, management system and work specification which based on the deep school-enterprise cooperation. We can describe the measure in three aspects. The first one is that we need establish the basic conditions for enterprises which engage in school-enterprise cooperation, such as industrial advantage, technical advantage, management advantage, good performance and integrity and so on. The second one is that we need to establish the system for the investment and the using of school-enterprise cooperation funds. The last one is that we need to establish the standard and evaluation methods about school-enterprise cooperation, such as enrollee, teaching, promoting teacher's quality, educational reform, industry-education integration, academic services and so on.

C. Teacher and Employee

We need to explore different ways to cultivate teachers and employees. Specific methods are shown in Table 1.

TABLE I. TRAINING METHODS

Training Methods	Specific Method
centralized training	Opening up its technical training resources and developing a continuous knowledge updating plan for university teachers, including curriculum updates.
project training	Opening project resources so that teachers can participate in project development and delivery. Training teachers with practical work.
technology and culture Salon	Organizing teachers to participate in the discussion of technology and application topics. Developing communication between schools and enterprise, such as entertainment, academic, and practice.

D. Government Level

The government should set up macro-control mechanisms and incentive mechanisms to supervise, check, evaluate and encourage the school-enterprise cooperation.

IV. SUMMARY

High level applied specialty reform is an important job in all kinds of colleges and universities. After years of school-enterprise cooperation, we have accumulated many problems that need to be solved. The paper analyzes some problems existing in school-enterprise cooperation from two aspects of school and enterprise, and puts forward the idea of solving the problem from the school-enterprise depth of cooperation. These ideas and methods have achieved good results in the professional reform practice at school of information Science and Technology Taishan University.

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