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Research on the Training Methods of Higher Vocational Software Talents under the Background of Supply-side Reform

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Abstract

There are nearly 700 software and information service companies in Wenzhou. Cultivating a group of excellent software companies, software products and industry application solutions is an important part of Wenzhou's industrial transformation and upgrading. This project designs a questionnaire on "The current situation of talent demand in Wenzhou software enterprises" from different dimensions, aiming to understand the development status of software enterprises in Wenzhou, the technical requirements for software talents, the quality requirements and the development prospects of talents, and to propose targeted solutions under the background of supply-side reform.

Keywords

Software Technology; Talent Training; Methods and Approaches.

1. Introduction

On November 10, 2015, President Xi emphasized at the 11th meeting of the Central Financial and Economic Leading Group: "While moderately expanding total demand, we should focus on strengthening supply-side structural reform, focus on improving the quality and efficiency of the supply system, and strengthen the economy. Sustained growth momentum." Vocational education should also closely adapt to the requirements of national economic development, increase professional reform efforts, and vigorously promote the supply-side reform of vocational education personnel training from the aspects of professional structure optimization and professional setting management, so as to provide matching for national economic development. and high-quality human resources.

2. Wenzhou Software Talent Needs

Wenzhou's economic and industrial structure is dominated by traditional light industry, with relatively low technological content. At present, most of Wenzhou's enterprises developed from family workshops or small hotels, and most of them are labor-intensive and resource-consuming. There are problems of low management level, low technology content, low product added value and low sales price. Under the background of supply-side reform, the development mode that relies on low cost and low price as a competitive advantage at the expense of consuming a lot of resources and polluting the environment has faced difficulties. At present, Wenzhou's economic development is standing at a new starting point, and the development mode must be changed: in terms of demand structure, to promote economic growth from mainly relying on the secondary industry trend to relying on the first, second and third industries to synergize; In order to promote economic growth from mainly relying on increasing the consumption of material resources to relying mainly on scientific and technological progress, the quality of laborers and the level of management have been improved. Achieving these transformations requires comprehensive innovation.

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The software industry is a green industry with high penetration, high add-on, high investment and high efficiency, which plays a strong role in promoting the digitalization of traditional industries and is a "multiplier" for national economic and social development. In 2017, the business income of software industry in Zhejiang Province was more than 420 billion yuan, the value-added tax rebate of software products was more than 16 billion yuan, the business income of Wenzhou software industry was about 3 billion yuan, and the value-added tax rebate of software products was 200 million yuan, showing great potential for development. At the same time, the software industry is a knowledge-intensive industry, and the carrier of knowledge is talent, and the quality of the talent team is particularly important.

Through preliminary research, the software talent supply side and industry demand side of local higher vocational colleges in Wenzhou cannot fully adapt in terms of structure, quality and level. Enterprises strongly report the problem of not being able to recruit and retain talents. In fact, a big reason is that the current way of training software talents in colleges and universities is out of touch with the needs of enterprises, especially with the local economy.

3. Current Situation of Software Talent Cultivation

The United States and India are two typical big countries in the development of the software industry. The US software industry has always been a leader in the world's software industry. The level of software technology and software enterprise management is world-class, and industry standards and industry norms are also derived from this. Among them, colleges and universities play a very important role in the talent training system of the software industry in the United States, providing basic education and systematic theoretical research, and emphasizing cooperation with enterprises. The two have mutual influence and complement each other. In the past ten years, colleges and universities have begun to integrate into the development of the software industry, and the cooperation between software enterprises and colleges and universities has become more formal. The main way is to combine school education with career development to improve the efficiency and effectiveness of talent training.

There are two main ways of cooperation with enterprises. One is that enterprises provide human, material and financial support for talent training programs and research projects, and provide students with opportunities for internships and part-time jobs. Some more targeted short-term training courses can strengthen professional knowledge, improve professional skills, and better adapt to work and meet challenges. Many companies sponsor the software development studio program to train masters of software engineering. First, it is to recruit capable graduates in the future, and second, it can also pay attention to the latest technology and products at any time, and the school just uses these resources such as human resources and funds. It can be said that it is the best of both worlds to better cultivate students' practical ability, enhance the practicability and applicability of training plans, and allow students to enter work roles faster in the future.

The characteristics of talent training in the Indian software industry are clear service targets, reasonable curriculum plans, advanced teaching methods and close cooperation with enterprises. In order to ensure the advancement and practicability of software talent training, NlTl has formed alliances with world-leading software companies such as Microsoft, SUN, Oracle, etc., so as to obtain the latest technical information of these companies at the first time, and then concentrate on practical combat. Experienced software developers and educational researchers write the latest teaching materials, and keep up with the development and changes of technology to continuously create and improve teaching material writing and curriculum design, ensuring that the teaching materials are the latest and most practical.

The training of software talents in the United States and India has its own merits, but both have achieved extraordinary achievements. Although there are differences in specific practices, they are essentially the same, that is, to adapt to market changes and needs, constantly look for a suitable

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software talent training model, and fully cultivate the talents needed for the development of the domestic software industry.

In China, the report of the 19th National Congress of the Communist Party of China clearly stated: "It is necessary to improve the vocational education and training system, deepen the integration of industry and education, and school-enterprise cooperation." It clearly puts forward the development path of "adhering to the integration of production and education, school-enterprise cooperation, and promoting the simultaneous development of higher vocational education and the economy and society".

At present, the main methods of school-enterprise cooperation in domestic software majors are: implanting enterprise projects into professional courses, dispatching enterprise engineers to participate in professional course teaching; Double-qualified teachers; proposed and implemented a series of methods and measures, such as the way of training with real projects of cooperative enterprises, and promoting the reform of software engineering teaching. The school-running model of "integration of production and education, integration of school and enterprise" is a new development path opened up by current vocational schools, but this is just the beginning, and because the actual situation of each school is different, and the characteristics of each major are different, so the specific approach Not all the same.

In general, the current research deficiencies of such topics in my country are mainly manifested in the following aspects: (1) At this stage, domestic research mostly focuses on qualitative research, and less quantitative research based on surveys; (2) Research focuses on policy theory, there are few reflections on the specific implementation operations and effects; combined with the local economy, there are few studies on local higher vocational colleges.

4. Suggestions on the Training of Software Talents under the Background of Supply-side Reform

4.1 Reasonable Positioning of Training Objectives.

According to the actual situation of local colleges and universities, it should be positioned to cultivate application-oriented software talents, who are mainly engaged in software design and coding, software testing and software process management. Teaching practical teaching content, supplemented by effective teaching methods, so that the cultivated software talents can master the basic theoretical knowledge and software programming expertise necessary for employment, and have the basic abilities and basic skills required by the software industry occupation; it is required to master the latest practical knowledge and technology in the IT industry and software industry. At least one should be proficient in one contemporary mainstream programming and development tool, and have successfully completed software development tasks with no less than thousands of lines of source code. So that after graduation, you can adapt to the requirements of the job without professional training.

4.2 School-enterprise Deep Cooperation Talent Training.

Starting from the supply-side reform, on the basis of literature research and preliminary investigations, build a software talent training mechanism in higher vocational colleges based on deep school-enterprise cooperation with local characteristics that can promote the development of the local software industry. In order to seamlessly connect the talent training of the college with the needs of enterprises, improve the employment competitiveness of students, and at the same time cultivate high-quality skilled talents for enterprises that can be "used and retained", so as to achieve a win-win situation for colleges, enterprises and students, All majors have cooperated with industry associations and benchmarking enterprises, and the cooperation methods include co-construction of "order classes", co-construction of training rooms, post-internships, and undertaking industry-university-research projects.

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4.3 Construction of Higher Vocational Software Technology Professional Curriculum System Guided by Work Process

The main task of higher vocational colleges is to cultivate high-quality and high-skilled talents. The talent training program is the overall design of talent training, a reflection of the guiding ideology and overall thinking of talent training in higher vocational colleges, and is related to the content of talent training in higher vocational colleges. , access and quality. In this regard, the article focuses on the exploration and practice of the work process-oriented construction of the curriculum system for higher vocational software technology majors.

4.4 Focus on the Cultivation of Skills in Teaching Modes and Methods.

Master the theory and technology of software development and maintenance through engineering practice, which is quick and easy to understand, and interprets complex and abstract concepts with concrete and vivid examples, which can achieve twice the result with half the effort. Well-designed cases with appropriate scale and difficulty that meet the teaching requirements are an important part of the teaching activities of this course. The selection of specific cases should preferably be an example of an engineering project, with both successful experience and failure lessons. Based on the needs of actual engineering projects, students are divided into multiple project groups, and each group should independently complete the tasks of each stage such as project demand investigation, demand specification, system analysis and design, and final product submission. Each team is required to strictly follow the software process specification, design a demand survey outline, write a detailed demand specification specification, select appropriate software process technologies and tools that conform to the actual project, formulate perfect project management measures, and reasonably configure the members of the project team. Advance layer by layer, submit products and related documents on time. Practice has proved that similar teaching practices are popular with students and the effect is very good.

5. Conclusion

With the popularization of information technology, the recruitment of software majors has long been no problem, but the difficulty of high-quality employment is in stark contrast to the extreme shortage of high-quality software talents. For enterprises, the core problem is not the extreme shortage of quantity, but the extreme shortage of structure; for students, it is not difficult to find employment in quantity, but in terms of quality. In the process of cultivating students majoring in software technology, higher vocational colleges should combine the actual situation of the students, take the needs of enterprises as the standard, optimize the teaching mode with the times, carry out personnel training education, and vigorously promote the supply of vocational education personnel training. side reform, the efficiency and effectiveness of personnel training.

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