

# Research and Practice on the Training Model of Micro-Professional Talents of “Web Front-End Development” Based on School-Enterprise Co-Construction

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**Abstract:** *With the popularization of Web 2.0 technology and people's higher and higher requirements for user experience, traditional Web interfaces can no longer meet people's requirements for interactive features. Web front-end development technologies are getting more and more attention, and major industries are developing Web front-ends. The demand for talents has also increased substantially. This article proposes a new teaching model for the web front-end development technology course in the teaching process, and discusses the specific teaching reform and implementation methods in the new model.*

**Keywords:** *Micro-major, Web front-end development, Talents training*

## 1. Introduction

With the rapid development of the Internet, the talent gap in the software industry is increasing. Web front-end development and technical talents have also become positions that have seen rapid growth in demand in recent years. Job statistics found that in 2019 campus recruitment positions, there are “Web front-end development engineers” in positions posted by multiple industries. Due to the high overlap of the shortage of talents of employers, the competition for talent is very fierce, and the offer salary given by the company is not only high. In other positions, salary growth is also the fastest. In this context, the front-end development technology talent training model of higher vocational colleges should also be continuously innovated and reformed, with the main goal of cultivating compound front-end development talents to meet students' learning needs and adapt to market needs.

## 2. Demand Status of Web Front-End Development Technical Talents

Traditional Web front-end development refers to the design of the layout of static web pages, which is the main work of developers in the Web1.0 era. At that time, the content of the website was mainly static pages, and people entered the website mainly by browsing the content of the webpage to obtain relevant information. Since 2005, with the development and popularization of Web2.0, a large number of interactive Web applications have emerged. People have higher and higher requirements for user experience when visiting websites. The design of the front-end pages of the website has thus undergone quality change. A good software-based interactive form on the front-end page can provide users with a better experience, so the development of the front-end page is more and more difficult. At this time, the Web front-end development refers to the comprehensive use of HTML, CSS, DIV, and JavaScript, DOM, AJAX and other technologies realize the overall layout of the website and improve the user experience. In some countries with more developed technologies, front-end development technicians have been independent and formed a dedicated development group. At present, my country lacks a large number of front-end developers. With the popularization of Web2.0, major domestic industries will be The demand for development talents will be greatly increased, and Web front-end development technical talents will also receive increasing attention. An excellent web front-end development technician must have both breadth and depth in the knowledge system. Traditional web designers only need to master basic tools such as Dream-Weaver, Flash and Photoshop to be competent. This is also the current situation. Many colleges and universities have core courses in the web design

curriculum system. It is far from enough for current web front-end developers to master these. The current front-end development is closer to the back-end development of the website in terms of technology and difficulty. More professional technicians. In order to better cultivate the technical talents of Web front-end development, we have revised the teaching plan, combined with the current specific technical requirements for Web development technical personnel for teaching.

### **3. Comparison of Talent Training Models between Computer Majors in Vocational Colleges and It Training Institutions**

The IT industry is developing very fast and there is no time to take care of the training of new employees. In view of this, various IT vocational training institutions in the society have grown rapidly. They focus on specific technical knowledge, closely follow the market demand, and teach teachers with rich practical experience. In a short period of time, they provide high-intensity lectures and training so that students can meet the needs of the company. Employment requirements. Of course, most of the training costs of training institutions are expensive. After simple statistics, it is found that most of the students participating in IT training are juniors or fresh graduates. In order to maximize the value for money, students are naturally more attentive in their studies. . IT training institutions train students to quickly enter an industry by taking shortcuts. The negative impact it brings is that the foundation is unstable. Fast and efficient training does save time, but the later learning ability is missing. Some students find it after graduation. Without the ideal job, the company will not be recognized. The reason is that the company pays more attention to the long-term development potential of employees and hopes that employees have a strong interest in learning and strong self-learning ability to adapt to the rapid changes in IT industry technology.

The talent training of “Web front-end development technology” in higher vocational colleges must not only maintain their original strengths, but also learn the strengths of the talent training model of IT training institutions. It is not only guided by the learning of vocational technical skills, but also pays attention to the learning of professional basic knowledge, and strives for students to strike a balance between the current application of technology and the professional foundation for long-term development.

### **4. Web Front-End Development Technology Curriculum Reform**

The purpose of the curriculum reform is to adapt to the development and popularization of web 2.0, to cultivate and master basic Web front-end development technologies, including HTML, CSS, DIV, JavaScript, DOM and AJAX, etc., and to master website performance optimization, search engine optimization and server-side development Basic knowledge of technology, master the use of various Web front-end development and testing tools for auxiliary development, etc. Curriculum is set up based on the technical requirements of the Web front-end development engineer position to meet the requirements of technical talents in Web front-end development. The teaching content is set to include 5 modules including HTML, DIV, CSS, JavaScript, DOM and AJAX. Teaching content. In order to better adapt to the development of Web development technology and the needs of society, we also add knowledge of HTML5 in the course. In the newly constructed knowledge system, CSS+DIV technology runs through the entire teaching process, focusing on the role of CSS+DIV technology in the front-end page design of modern web pages, and integrates JavaScript, DOM and AJAX technology with them in the teaching to cultivate Students have the ability to design and develop modern front-end pages.

The web front-end development technology course adopts case-based teaching, with the goal of “task-driven, project-driven”, and standardizes the process of web front-end development. Using current excellent quality course websites, excellent corporate websites and typical commercial websites as examples, learn the front-end Page design and development, learn advanced technology and concepts, and enable students to independently complete design tasks for self-selected topics through case teaching. The teaching design model based on the cognitive flexibility theory of constructivism is adopted in teaching. In the process of teaching design, the concept of constructivism is always used when completing the case, and the new knowledge points are constructed by sensory, situational knowledge, and From the construction of practical knowledge to the final reconstruction, the final meaning construction is formed. Students can realize the understanding and knowledge of knowledge from different situations in the process of learning, and improve students' practical and practical ability through cases. During the teaching process, all project cases are from actual projects in the current

enterprise. According to the theory of software engineering, the project cases are divided into three levels: technical layer, operation layer and comprehensive layer from bottom to top. The technical layer focuses on the learning and mastery of the development technology, the operation layer focuses on the application of technology, applying technology to practice, and the comprehensive layer focuses on the integration and innovation of technology. The technical layer is the foundation of the operation layer and the comprehensive layer, and the comprehensive layer is the realization and deepening of the technical layer and the operation layer. Practical courses are added with curriculum design to strengthen students' research training and project experience during school, improve computer majors' Web front-end development capabilities, and enhance students' professional competitiveness.

## 5. Web Front-End Development Technology Ability Training

Improve teaching resources, adopt in-class multimedia teaching methods that are compatible with teaching characteristics, adopt key domestic and foreign teaching materials, introduce advanced teaching ideas from first-class universities and successful software talent training institutions at home and abroad, and learn from foreign courses to adjust, update and enrich The teaching content adopts bilingual teaching method, and strives to be in line with the training goal of software talent internationalization. Construct a resource platform for independent learning, build a library of program design project resource cases, enrich students' extracurricular learning levels, establish a corresponding course teaching website, and realize a teaching mode that combines both inside and outside classes.

In addition to the off-campus teaching base during the internship, the school also builds a group of comprehensive practice bases based on campus network studios and Internet companies based on the specific characteristics of Web front-end development technology. In the teaching process, teachers can lead students into the base and participate in actual web development and social practice. Bases such as campus network studios are managed and maintained by students to improve their professional abilities and enable students to complete their work. The transition from theory to practice, the transition from school to "workplace". The establishment of the above bases strengthened students' practical and job adaptability. In teaching, we require students to have no less than 20% of the practical aspects of projects and topics, strengthen the training of students' practical ability, and set up a number of courses reflecting the latest development of Web front-end development technology to provide a platform for cultivating students' professional quality.

Web front-end development technology is relatively practical. We also hope to improve students' development technology and ability through curriculum reform, and ultimately improve students' professional quality and design ability, so that they can be qualified for professional positions after entering the society. In the web front-end development technology course assessment, we use a diversified and professional assessment system to replace the traditional assessment method. For the assessment of web front-end development technology courses, we adopt a variety of assessment methods, such as work presentation, work integration, project acceptance, etc. Taking students' work and self-selected topics as an important part of the evaluation and assessment, students have exercised their verbal expression skills and communication skills while reporting and demonstrating their work. They have also deepened their knowledge of the Web front-end development technology and In-depth understanding of project development. In the project acceptance assessment, in order to allow students to better complete the project, we are divided into phase acceptance and comprehensive acceptance. The phase acceptance is used to check and understand the learning situation of students, understand the students' mastery of Web front-end technology, and find problems in time And find a solution. Comprehensive acceptance is to test the students' Web front-end development ability and related comprehensive ability through the students' realization of specific project cases. This kind of assessment method can objectively evaluate the students' ability level and cultivate their spirit of unity and cooperation, and promote Students' comprehensive professional ability training and improvement.

## 6. Conclusion

With the rapid development of information technology, the training of technical talents for Web front-end development in higher vocational colleges must correspond to the needs of the market and conform to the law of market and technology development. Higher vocational colleges should be guided by the policies of the competent education department, centered on the demand for talents in Web front-end development brought about by the Internet + and emerging technology industries, and be oriented by the employment of enterprises, with the purpose of assisting students in matching

employment, with job skills and comprehensive Quality is the core and cultivate talents with composite Web front-end development technology skills.

### **Acknowledgement**

The Shandong Soft Science Research Program in 2019(No.2019RKB01559): Exploration and Research on School Enterprise co Construction of Micro Professional Models for Talents Cultivation in Web Front End Development Certificate

### **References**

- [1] Li Xiaofeng, Zhong Minghui. *Research and Discussion on the Talent Training Mode of Web Front-end Engineers Based on Html5 Technology in Colleges and Universities*. *Brand Research*, 2018, 000(007):P.145-146.
- [2] Liu Chunxia. *Exploration and practice of the “JavaWeb Development Technology” course jointly established by schools and enterprises*. *Modern Information Technology*, 2019, 003(010):P.102-103.
- [3] Men Yafan. *Exploration of web front-end talent training model based on 1+X book card integration*. *Industry and Information Education*, 2020(6):19-22.
- [4] Zhao Dawei, Chen Gang. *Research on the Training Mode of Web Front-end Development Technical Talents*. *Computer Knowledge and Technology: Academic Exchange*, 2015, 11(024):109-110.
- [5] Xu Na, Liu Zhen, Ma Xiaowei, et al. *Research on the Commercialization Path of School-Enterprise Co-construction of Online Courses*. *Journal of Hebei Energy Vocational and Technical College*, 2019, 19(01):21-23.