Research on Computer-software Majors Talents Cultivation System

ZHANG Jixian, YU Jiangfeng

Zhejiang Radio and Television University , China

Abstract

Open University computer-soft majors should take various measures to enhance students' practical ability and train practical talented person. This article focuses on analysis of the design of computer-software majors talents cultivation plan at the Open University which reflecting the principles of "talent, quality, learning and service". Moreover, this article preliminarily explores computer-software majors talents cultivation system at the Open University.

Key words: Open University; Talents Cultivation Plans; Software Development and Application

1. Introduction

In recent years, China's software industry has made great progress, foreign software companies have expanded in China, while China's domestic software companies are stepping up pace on research and development. According to the prediction made by China's Ministry of Information Industry, Chinese market is expected to have at least 300,000 software talents gap every year, including high-end programmers and junior programmers who are both in particular short of. No matter from national development plans or in terms of the demand for computer professionals, they both prove the important position which the software information industry seizes in the next decade.

2. The Mentality of Designing Computer- software Talents Cultivation Plan

The mentality of designing computer-software majors talents cultivation plan are as following steps:

Set degree education and non-degree education in modular courses

The Open University should be able to meet the different types of learning needs, and should be able to provide degree education and non-degree education, with the modular course system, it is divided into two main modules including the degree course module and training course module.

The flexible learning system: multi-entrance, multi-exit and multi-direction

There are varieties of Open University students; they can be from technical secondary schools, secondary vocational schools, high schools, vocational colleges, and even universities. Therefore, it should take full consideration on the existing basic knowledge and skills of each student at the designing stage of majors, and it should provide both entrance and exit for students to learn to meet labor market needs.

Professional competence as the core, and enterprises, industry associations and training institutions as teaching partners

Higher education has the problem of heavy theory while light practice, so there is a gap between graduates and the actual need of enterprises. For the computer in-

dustry, the enterprise is serious to the staff's practical ability, so in the curriculum, it should put the training of the students' vocational competence as the core objective to meet the actual need of the enterprise, and to improve the professional education of computer soft pertinence and flexibility, to enhance experiment teaching and practice teaching which can help strengthen students' operation skills and application skills.Curriculum development will closely cooperate with enterprises and effectively integrate with social training institutions to realize the goal of sharing and win-win development. And the introduction of market mechanism will promote the formation and development of high quality resources.

Build brand courses and set up a new image

Learning resources is the core competitiveness of an Open University. If the Open University could open several well-loved courses, it will significantly help the Open University set up a new image. For computer soft majors, if we could open several high-level courses and open to the public free of charge, then not only made a contribution for the society, but also made the Open University more attractive to potential learners. In the choice of the course, it should make people who are interested in computer technology as the selecting principle; and it should position on students from first-class university and make them happy to learn the course.

Build first-class service system for learning

Platform, resources and services are three essential elements of distance education. For a specific major, when building first-class teaching resources, at the same time, it also needs to build a first-class service system for learning. This includes two aspects: firstly, each course needs to form a teaching team to realize nationwide standardized teaching counseling through the strength of team; secondly, using information technology to improve service level, for instance, the cohesion of teaching platform and mobile equipment enables students to learn movably, and the information push service allows teachers to promptly reply and answer questions and give advice to students on their next step of learning through tracking their learning activities.

3. Preliminary Exploration of Computer Software Mojors Talents Cultivation System

Computer-software majors targets on graduates have high school degree (including equivalent degree) or above qualifications, and also targets on on-the-job personnel. High school graduates (including equivalent degree) can start learning from the degree course modules, while on-the-job personnel can learn directly from the training course modules.

3.1 Graduation requirements

This major has more than one exit; graduation may take forms as follows: undergraduate graduation by learning all of the courses and passing the examination; single-subject graduation by studying a single course and passing its examination; learning experience certificate by learning a few courses and passing the examinations.

3.2 Vocational ability

Through the development and application of survey software, to set up a reasonable curriculum system, jobs can be classified into two categories: position on “program design and development”, and position on “technical support and services”. Requirements of different positions vary, but the basic requirements are the same. Different positions have different requirements which are summarized in **Ta-**

ble I (in four positions, for example). Job requirements analysis confirms the necessity for modular curriculum: common job requirements corresponding courses should be put in degree course module; while different vocational requirements corresponding courses should be put in training module for in-depth training in a certain direction; to obtain the bachelor's degree certificate, students need to complete all of courses in these two modules; while training personnel just choose the training module, and when they complete the training module courses they can obtain corresponding certificate.

3.3 Curriculum system

Curriculum system sets the necessary theory as the basis, the practice as the core, and divided into degree course module and training course module. Among them, the degree course modules including basic courses and graduation design; Training module can have more than one direction and can directly introduce courses from training institutions. As shown in **Figure 1**, it gives an example diagram of curriculum system about three directions of the major software development and application, including Java programming direction,.net programming direction and software technology support and service direction. Each training module contains items in actual combat for the purpose of practice teaching.

3.4 Teaching plan

The Open University constructs new majors with different directions, but the degree course module is same, as degree course module's role is to teach the basics knowledge to students. Training module's role is to train for a specific direction of application-oriented talents, and it should reflect the current technology hot spots and focus on latest business needs, and regularly adjust the module in the curriculum setting.

4. Conclusion

Currently the number of computer-soft major graduates is increasing, but it is still difficult to meet the demand of IT enterprises for their rapid growth, and there is a dislocation supply and demand relation between graduates who are looking for jobs and IT enterprises who are hard to find computer talents. Enterprises are not only lack of high-end talents, but also are lack of blue-collar who do basic works in the computer software industry. University computer science graduates lack practical experience and cannot directly taking a position, so training institutions can provide graduates pre-job training programs. Based on this situation, Open University computer-soft majors should take various measures to enhance students' practical ability and train practical talented person.

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TABLE I. POSITION AND ITS REQUIREMENTS

Position category	Position	Position requirements
program design and development	java programmer	1. Familiar with requirement specifications and system description document, analysis of system detailed design, code a given detailed design diagram, and complete the coding of unit tests; 2. ability to write software manuals and presentation of text; 3. Understand the development of professional knowledge; 4. Understand object-oriented analysis and design method and unified modeling language; 5. Master one kind of programming language (JAVA, HTML or JSP); 6. Understand basic knowledge of database.
technical support and services	software tester	1. According to the product specifications, write test plan, design test data and test cases; 2. Implement software test, and analysis and report on software problems, find solution to problem in time; 3. Complete the system test, and responsible for product function, property and other tests; 4. Put forward the further improvement of the software and evaluation of the improved plan.
	software after-sales service	1.Customer consultation, help customers using software; 2.Responsible for software after-sales technical service; 3. Communication with customers, collect and organize customer feedbacks; 4. According to customer needs, provide optimal plan and product; 5. Understand knowledge about software domain which sold; 6. Familiar with operation system (WINDOWS);
	computer administrator	1. Familiar with operation system (WINDOWS); 2. Familiar with Internet or office automation technology; 3. Familiar with computer performance, strong hardware maintenance skills; 4. Master general network problem solutions.

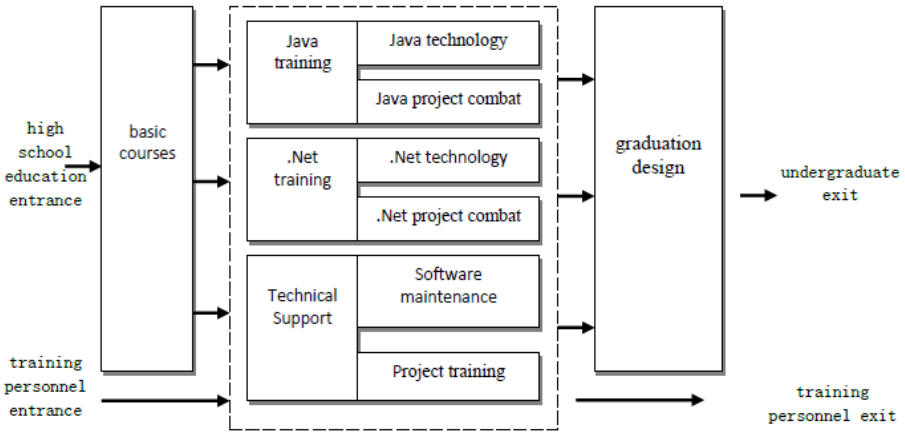

Figure 1. Curriculum system