

# Research on Employment Oriented Computer Professional Talent Training Mode

**Lin Zehong<sup>1</sup>**

<sup>1</sup>College of Engineering, Harbin University,  
Harbin, China 150086

**Zhou Xueyan<sup>1</sup>**

<sup>1</sup>College of Engineering, Harbin University,  
Harbin, China 150086

**Luo Qiubin<sup>1</sup>**

<sup>1</sup>College of Engineering, Harbin University,  
Harbin, China 150086

**Li Wei<sup>1</sup>**

<sup>1</sup>College of Engineering, Harbin University,  
Harbin, China 150086

**Yu Yuehai<sup>2</sup>**

<sup>2</sup>Office of Educational Administration, Harbin University,  
Harbin, China 150086

**Chen Xinin<sup>1</sup>**

<sup>1</sup>College of Engineering, Harbin University,  
Harbin, China 150086

**Abstract :** According to the local schools educational concept of serving the local economy, in line with “student-centered, service to students” objective, the employment oriented computer professional talent training mode is provided, from the construction of talent training mode and curriculum system respectively, introduces the key reform methods. Practice verifies that it can increase the employment rate and student employment levels.

**Keywords:** Employment Oriented; Computer Professional; Talent Training Mode

## 1. Introduction

Currently, most of the universities and vocational colleges have computer specialty, there are a large number of graduates join the workforce every year, although the social demand of computer professionals are also increasing, the computer specialized talent still hard to find a good job.

This state is mainly because the gap between the IT enterprises demand and the computer specialized curriculum in school, as evidenced by following differences. (1) enterprises are not willing to undertake the training costs, a large number of social training institutions arises at the right moment. (2) the traditional computer professional talent training scheme gives prominence to the “science and technology”, rather than “application development”; (3) the IT professional courses in universities lag behind the change of market demand, especially the university talent training scheme is not flexible; (4) Teachers in college update knowledge and teaching methods slowly, which makes the graduates’ practical ability is not strong; (5) students have poor crisis awareness, cannot grasp professional knowledge solidly, and do not have team cooperation spirit. Under this background, employment oriented computer professional talent training mode is the urgent need. Harbin University rise undergraduate in 2000, and its talent training location is

to meet the needs of the development of society and the local economy, to comply with the dislocation development idea, not only different from the traditional scientific research personnel training, but also different from the vocational education with weak theory, and employment oriented professional education cultivate applied ability graduates as the goal at the same time. This part of scheme has used in the 09, 10 and 11 with good effect.

## 2. The School Characteristics

In recent years, the newly-built local universities and colleges need to be strategically situated in order to obtain sustainable development in the ecosphere of higher education. Harbin University is a local university with the guiding principle of “stable scale, optimize structure, improving quality, outstanding features, and enhance services”. The school implements dislocation development strategy, which carries on the strategy of “strengthening the school with high teaching quality, excellent talents, scientific teaching research and making the school a big educational brand”. The purpose is to cultivate applied talents, adheres to the focus of teaching, and constantly strengthens three major functions of personnel training, scientific research, and social services.

For historical and geographic region reasons, the computer specialty mainly includes computer science and technology, computer science and technology (normal), software engineering, network engineering four main directions. A half of the students are in the Heilongjiang province, including the software engineering students enrolled some C grade students. The major employment destination can be summed up as for testing (teaching post, postgraduate, software exam and public institutions etc.) and for working (market-oriented employment). Harbin is the computer software industry relatively backward areas, so most of the market-oriented students choose Beijing, Dalian and other areas to develop themselves. It can be seen that there are

diversified employment direction of computer professional graduates in our school, so the professional curriculum system, especially elective, should carry on student-centered teaching strategies to give students more choices.

### **3. Employment-oriented Talent Training Mode**

Fostering applicative talents and serving local economic construction are the essential concepts held among local colleges. The overall goal of fostering applicative talents is the graduate with employment competitiveness. In computer specialty, the students for testing (teaching post, post-graduate, software exam and public institutions etc.) should primarily focus on the basic knowledge and different elective; while the students for working (market-oriented employment) should be familiar with the software development business, have strong personal business skills and team spirit. So the curriculum should consider the student's requirements, interests, aspirations, and the development of individualized factors.

#### **3.1. Undergraduate Tutorial System**

Using the professional teachers as undergraduate students' supervisor is first introduced from Oxford University and implemented in many universities. Under the tutorial system, the students can share information, and the teachers can help student in living, economy, moral, behavioral and academic etc. Undergraduate tutorial system reflects the basic idea of "student-centered". After military training, students will know their supervisor at the meeting, though the freshman have full of yearning and longing to a new life, they also need the professional teacher answering questions, and provide them guidance. It mainly includes the introduction of professional knowledge, the professional choice, the elective choice and employment guidance.

#### **3.2. Enrollment and training of students in large category**

Enrolment and training of students in large category means the freshman have no explicit specialty, and they can choose professional direction based on combination factors of personal interests, strengths and market requirement. So it is a wide caliber training mode for the actual application. Structure of computer science and technology curriculum system for the "Platform + Module", which is composed of general education curriculum platform, professional curriculum platform and practical courses platform.

(1) General education curriculum platform. General education curriculum platform consist of compulsory course module and elective module. Compulsory course module includes political theory courses, Chinese, Foreign Languages, physical education and military theory. Elective module includes humanities and social sciences courses, natural sciences courses and art courses.

(2) Professional curriculum platform. Professional curriculum platform includes professional platform course

modules, professional core curriculum modules and elective module. Students can choose a professional direction to complete all the course of the module.

(3) Practice curriculum platform. Practice curriculum platform is composed of basic practical courses module, improved practical courses module and quality development practical courses module.

#### **3.3. Elective choice diversity based on interest**

Elective module mainly set up Web application technology and development, mobile network application technology and development, network technology and development, network maintenance and security direction etc. direction. Students have the same general education curriculum platform, professional curriculum platform and practical courses platform, which ensures they have a solid professional foundation, and the elective based on students' interest can help students play their special features.

#### **3.4. Teaching resource optimizing configuration**

College adheres to the employment-oriented, and strengthens the overall quality of the students and integrated vocational capacity-building. So the school actively optimizes the allocation of teaching resources for service. The specific measures are as follows:

(1)The non-normal students can get teacher certification through studying some courses and mandarin Chinese proficiency test, which allows students to have more choices.

(2) School organizes excellent backbone teachers set up abundant electives, such as postgraduate mathematics, software exam, administrative capacity etc. that will help student cope with exams and get some elective credits at the same time.

(3)Students get innovation credits by participating in various subject competitions, such as mathematical modelling, mathematics contest and Speaking English contest.

### **4. The Employment-oriented Curriculum**

#### **4.1. Professional Courses Reform**

On the base of retaining the classic content, professional courses reform should combine the actual project to understand the abstract content. Therefore, the practice classes are arranged after the core professional courses, and the time are not used to complete the required validation experiments, but to carry on project practice, which enhances the understanding of students' knowledge. Such as program design training, algorithms and data structures training, database systems integrated training, software engineering comprehensive training and so on.

#### **4.2. Practice-oriented Teaching**

In order to improve students' ability, the school pays more attention practical teaching, and takes a series of measures to encourage students to hands-on creativity.

(1)Electives integrated training. Electives integrated training is always in schools and the students are required to master corresponding software development technology and complete the basic design process.

(2) Professional training outside school. Professional training outside school enables students to study in the enterprises, through the observation and practice to increase understanding of the software development process, which realize the first docking with the enterprise.

(3) Open laboratory project. Outside the teaching plan, professional teachers design project content based on student characteristics, and complete project design and development process with students together.

(4) Students scientific research project. Students are encouraged to take part in scientific research project with financial support, including teachers' scientific research project and some interesting subjects.

(5) Students innovation and entrepreneurship projects. Students are encouraged to declare all kinds of student innovative business projects to realize the dream.

(6) Student Competition. Through participation in various competitions, students get innovation credits, such as

mathematical modeling, mathematics contest, multi-media design and so on.

The in-school and out-school training base should be actively improved, and the practice of supporting environment must be built. Meanwhile, construction of teaching staff should walk in front of talent training mode reform, because no high-quality teacher resources, the effect of the course will be greatly discount. Teachers' training is the important factor which evaluates the success of university talents training mode reform. Therefore, school carries on teacher training by coalition of college and enterprise to update professional knowledge timely. At the same time, teachers are encouraged to visit in research institutes and universities, which will provide new reform thinking.

## 5. Employment assessment

Employment oriented computer professional talent training mode should improve the employment rate. Table 1 shows the Employment Rate statistics of 09, 10 and 11.

Table 1 Employment Rate statistics

Grade	For testing (%)		For working (%)		Employment Rate (%)
	Teaching post, public institutions and civil servant	postgraduate	Non-computer Professional post	IT companies	
09	5	6	34	53	98
10	4	5	48	42	99
11	3	19	21	24	67

It can be shown that employment situation is becoming increasingly stable. The last row in the table is the employment rate of the senior students, the "for testing" is the number of people have participated in the exam, and the "for working" is the number of people have signed an employment agreement. From the timeframe, the employment rate of grade 11 can be the same as in previous years, and the employment quality is slightly higher than last year in view of the tripartite agreement signed.

## 6. Conclusions

Employment oriented computer professional talent training is a complex and difficult task, which is closely related to employment market, student level and the specialized characteristics. The paper researches on the computer professional talent training program, curriculum system, teaching staff, particularly in terms of practical training. The reform of the talent training mode can better serve the local economic development, and have achieved some results. In the future we will focus more on the setting of electives, especially the integrity consistency and flexibility of professional orientation course in order to deliver more useful talents.

## Acknowledgements

The work was supported by Heilongjiang Education Scientific Research Youth Subject (GBD1213045), and Harbin University New Century Higher Education Teaching Reform Project (XJG2014016, XJG2014018).

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