Research on the Practical Teaching Reform of Computer Basic Course in the University of Finance and Economics

Li TANG* and Yan-Ling ZHANG

Department of Information Science & Technology, School of Science and Technology, Tianjin University of Finance and Economics, Tianjin 300222, China
tangli0831@tjufe.edu.cn, yanlingzh@126.com
*Corresponding author

Keywords: Computer basic course, Graded teaching, Classified teaching, Practical teaching reform.

Abstract. Information society puts forward higher requirement for the practical teaching of computer basic courses in the universities of finance and economics. Research shows that the original uniform teaching cannot meet the professional demand and the needs of different levels of students. According to the status of computer basic courses in Tianjin University of Finance and Economics, this paper puts forward the suggestions on the practical teaching reform, reconstructs the practical teaching system of computer basic course, adopts the practical mode of the graded teaching and classified teaching to the students with the different majors and different levels. In addition, some measures of teaching reform are proposed to be taken. Finally, the practical teaching reform will cultivate the application ability and computational thinking ability of the student.

Introduction

With the development of economy and the increasing popularity of computer, information technology has been gradually infiltrated into every field. "National medium and long term education reform and development plan (2010-2020)" proposed to enhance the analytical and problem-solving ability of students with information technology. The information society requires the college students to have stronger application ability and more comprehensive knowledge of computer. It puts forward higher requirements for the education of computer in the colleges and universities. Many colleges and universities have been carried out the teaching reform of computer basic courses, such as the University of Northern British Columbia has set up two levels of basic computer course for the students[1], and Nanjing University of Finance and Economics advocates the teaching mode of taking the application as a guide[2].

The universities of finance and economics should strengthen the computer knowledge and application to cultivate comprehensive talents[3]. Many universities of finance and economics carry out teaching reform of computer basic courses. Dongbei University of Finance and Economics adopts the graded teaching mode and divides students into junior and senior levels[4]. The computer basic courses use classification teaching and pay attention to the theoretical teaching and practical teaching in Jiangxi University of Finance and Economics[5]. Anhui University of Finance and Economics adopts the graded teaching according to the levels of computer knowledge of enrolled students[6].

Analysis of Teaching Reform

Existing Problems in the Teaching

Tianjin University of Finance and Economics not only reinforces the education of economic and management, but also pay attention to improve the computer level of students. The computer basic courses include "Fundamentals of Computer Application I" and "Fundamentals of Computer Application II", which are important required courses for students in our university. "Fundamentals of Computer Application I" includes: computer foundation theory, computer hardware knowledge,
operating system and its application, multimedia knowledge and its application, office software application, and Internet applications. "Fundamentals of Computer Application II" includes "VB Programming Foundation" and "Multimedia Application" to different professional students.

The practical teaching is very important part of computer basic course in our university. However, the current practical teaching cannot meet the requirements of education. Existing problems lists as follows:

First, because the students come from different regions and different economic conditions, computer practical level of enrolled students is also different. The original uniform practical teaching limits the innovative space of students, is not good for the improvement of innovation ability of students. It will lead to the lack of learning enthusiasm of different students, and cannot effectively arouse the learning interests of students.

Second, the different profession has the different requirements for the computer practice. The original uniform practical teaching does not reflect the professional characteristics. It is urgent to set computer practical teaching suitable for the professional demand.

Third, the students mainly depend on the explanation of teachers and a small amount of experiments to learn programming. The relationship between theoretical teaching and practical teaching should be coordinated to solve the poor practical ability of students.

For the some freshmen of 2015, the author launches a questionnaire survey at the 9th week of new term. The results of survey are general and representative with distribution of 700 questionnaires and retrieve of 682 valid questionnaires. Results show that the number of freshmen rarely or never used computer is 115, about 17%. The number of freshmen familiar with the computer is 33, about 5%. The rest of the freshmen is 534, accounting for 78% of the total number. These students have mastered some knowledge of computer, including basic computer application, windows operating system and the simple method of office software. Nevertheless, they have not learned knowledge of database, advanced applications of office software and program design.

Therefore, based on the analysis of present teaching situation and actual status of our university, we draw the conclusion that it is necessary and feasible to carry out practical teaching reform of computer basic course in our university. This paper aims to explore the practical teaching reform of computer courses with graded teaching, classified teaching and modular teaching in the universities of finance and economics.

**Goal of Practical Teaching Reform**

In order to fully mobilize the enthusiasm of the students, improve their practical ability and lay the foundation for their professional jobs, we carry out the reform in practical teaching and realize two targets of reform.

Firstly, we carry out the application-oriented reform of practical teaching in order to cultivate the application ability of students. By integration of the computer courses and their professional courses, the students should apply the computer to solve the problems related to the professional field, so as to promote the development of information technology in the professional field.

Secondly, we aim to train the computational thinking ability of students in the practical teaching. We improve the content of education and cultivate the innovation ability of students and make them consider how to solve the problems by using computational thinking.

**Reconstruction of Practical Teaching System**

According to the present situation of computer fundamental education and the specialty characteristics, we put forward graded teaching for different levels of students and classified teaching for different majors of students. Meanwhile, multi-level practical teaching are combined with the modular teaching to build a three-dimensional practical teaching system of basic computer courses, as shown in Figure 1.
Figure 1. Practical teaching system of computer basic courses.

**Graded Practical Teaching in Fundamentals of Computer Application I**

We propose some suggestions about graded teaching to meet the learning needs of different levels of students. For the same professional students, they should be divided different levels according to their levels of computer, and taken part in graded practical teaching. For example, according to the degree of computer knowledge and the learning situation, students will be divided into different levels: Class A and class B. Class A (Advanced) is the advanced class, and Class B (Basic) is the basis class. Enrolled students will have the examination in Fundamentals of Computer Application I, and choose the class to practice according to their examination results.

**Classified Practical Teaching in Fundamentals of Computer Application II**

To highlight the professional characteristics and adapt to the needs of society, we suggest the mode of classified practical teaching in Computer application foundation II. Because the different profession has the different characteristics and teaching targets of computer, different professional students should learn the different kinds of computer knowledge to meet the needs of different profession. For example, the practical courses are divided into 3 kinds in accordance with the profession and subject: the first one is economics, management and the liberal arts, the second one is science and engineering, and the third one is arts. The different professional students will take part in the different categories of practice: VB program design is for the first kind of students; C program design is for the second kind of students, multimedia practical teaching is for the last kind of students including Photoshop and Flash.

**Multi-Level Elective Courses of Computer**

Multi-level elective courses of computer practice should be set up for students, including: Access database, SQL Server database, ASP dynamic web page design, JSP dynamic web page design, computer network, and so on. A three-dimensional teaching system of computer will be built to enhance the interests of students.

**Modular Teaching**

Content of computer practical teaching will be divided into several modules according to the professional characteristics. We implement modular teaching for different professional students to choose. For example, the module of data statistical analysis is provided for financial professional students, the image processing module is provided for students of art, the module of web page design is provided for tourism majors of students.
Teaching Reform Measures

Based on the reconstruction of computer courses system, some measures of teaching reform should be taken:

First, the institutional guarantee system for the reform of practical teaching should be formulated, including the corresponding practical teaching plan and targets, related system of teaching affairs, management system of students. Meanwhile, new teaching syllabus, exam syllabus and practical syllabus should be built for different profession and different levels of students. The different assessment method and the database of examination will be constructed according to the different professional students.

Second, establish the computer practical teaching platform based on network. Make full use of practical teaching platform, and enhance the practical teaching of computer basic courses. In order to cultivate the practical ability and innovative ability of students, we construct three comprehensive practical teaching platforms, listed in figure 2.

![Practical teaching center of computer basic courses](image)

Figure 2. Computer basic practical teaching platform.

Third, the task-driven teaching mode and case teaching method should be adopted.

Fourth, the teacher are organized to take part in the professional training in order to improve their teaching level and ability according to their present situation for the practical teaching reform.

Finally, a part of students will have the pilot practical courses to test the reform results of classified teaching and graded teaching. It will be gradually implemented for all students.

Summary

In order to improve the efficiency of practical teaching, practice teaching reform is carried out. Construct the model of classified teaching and graded teaching for the practice of computer basic course, built the three-dimensional practical teaching system for computer basic courses. By the investigation to other universities and the questionnaire survey to the students, we have acquired the learning situation of students and some experience of teaching reform. For the different profession and different levels of the students, practical teaching mode is adopted by classified teaching, graded teaching and modular teaching. A variety of practical teaching approaches are developed for computer basic courses to cultivate the application ability of the students.

Acknowledgement

This research was financially supported by the General Project of Education Reform in Tianjin University of Finance and Economics (No. JGY2015-40, JGY2015-17).

Reference


